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Education, Technology and Cultural Change: A Review of Social, Cultural and Religious Practices of the Adi Community of Arunachal Pradesh, India

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Abstract

Arunachal Pradesh, the North easternmost state of India, is a home to twenty six major tribes and more than fifty sub-tribes. A majority of the people are of Mongoloid race with unique characteristics in terms of dress, language and customs. The tribal societies follow patriarchal and primogeniture system and practice endogamy while strictly observing the law of clan exogamy. Each tribe has its own structured institutions that sustain law and order, settle disputes and undertakes every activity for the welfare of the respective tribes. In terms of religion too, the tribes of the state have been traditionally following *Donyi Poloism*, the practice of worshipping the Moon and the Sun God.

However, with the advent of technology and advancement in the field of education, there have been significant changes in the practice of the traditional customs and socio-religious beliefs so much so that a majority of such practices are on the verge of extinction. While there are attempts at preserving the age-old customs and practices primarily through *developing* scripts and digitizing the folk tradition, the changes in all these aspects are far too many to be incorporated holistically.

The paper takes into account the cultural and religious practices followed by the Adi community of the state and will analyse some of the major changes witnessed during the recent times through the prism of education and technological intervention. Quantitative data has been collected using a questionnaire for a sample size of 700 Adi households. Descriptive results were used in analysing the data.

Keywords: Donyi Polo, Digitization, Primogeniture

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Introduction

Arunachal Pradesh is a home to twenty six major tribes and more than fifty sub-tribes. A majority of the people are of Mongoloid race with unique characteristics in terms of dress, language and customs. The tribal societies follow patriarchal and primogeniture system and practice endogamy while strictly observing the law of clan exogamy. However, with the advent of technology and advancement in the field of education, there have been significant changes in the practice of the traditional customs and socio-religious beliefs so much so that a majority of such practices are on the verge of extinction. The same can be stated of the dialects spoken by the major communities of the state. Lack of scripts and hence, a concomitant lack of printed literature has created a void which, to a large extent, been filled by English and Hindi. Only in the recent times, attempts at digitizing and archiving the oral literature have been attempted, which are primarily transferred from one generation to another orally. These oral literatures serve as a store house of traditional knowledge systems, customs and myths which are followed by the communities across the state and bind them together.

Although the state is yet to come out of its locational remoteness and infrastructural constraints, yet in the recent years, it has developed considerably in the field of education. For many years, the region has remained cut off from the rest of the world. This geo-political inaccessibility has also affected in the institutionalization of the educational system in the state. With no uniform script and language, with the exception of the Buddhists in Kameng and Lower Lohit areas (as they used Tibetan and Tai-Khampti for the Buddhist religious texts), the tribes of the state had used Assamese as the link language.

At the beginning of the 20th century, Arunachal Pradesh had no schools at all. The first school was established in 1918, in Pasighat, and the second in 1922, in Dambuk. The first college offering undergraduate courses was established in Pasighat in 1964. Against such a backdrop, knowledge passed across generations orally, and the senior citizens and village elders were entrusted with the responsibility to guide the younger generations regarding their cultural traits and customary practices. Ballads have continued to date and are deeply rooted in time, place, and culture.¹ These are an important means of transmitting knowledge. Gradually, community institutions were established where need-based skills were taught.² However, these institutions were largely confined to the geographical area of settlement of a particular tribe.

The real impetus to English education in the state came with the Christian missionaries. Initially, when people, particularly students, came down from the hills to the plains of Assam and to Shillong, the then capital of Assam, they witnessed the pace of societal development owing primarily to the adoption of English language as a medium of instruction, as introduced by the missionaries, and the medium of official communication as well. A large number of them started converting to Christianity and they realized English as 'the medium that would guarantee jobs in the administration'³, although largely confined to the members of the Adi community. In May 1970 and January 1971, the students of Pasighat College (later renamed as Jawaharlal Nehru College) launched mass rallies and demonstrations demanding 'replacement of Assamese as the medium of instruction in schools, and intensive teaching of Hindi and English.'⁴ However, this created a deep schism largely on linguistic and community lines as the Wanchos of the greater Tirap district were in

favour of retaining Assamese as the medium of instruction largely because it provided a link with the people in Assam and also it was the 'lingua franca of NEFA'⁵ (renamed as Arunachal Pradesh on January 20, 1972). English education in the state was officially sanctioned in 1971 when the NEFA administration had all its schools affiliated to the Central School system with English as a medium of instruction from the primary levels itself.⁶

English education notwithstanding, the general and basic infrastructure of the state has not developed much yet with several areas still remaining inaccessible. However, in the last decade, realizing the potential of hydropower and other mineral resources, several companies have started their functioning here with basic minimum facilities. The situation can be gauged from the fact that train services connecting the capital of the state has started only this year. The state run schools are in a deplorable condition, mobile telephony and services of national banks have only recently been started in many places of the state and most of these regions lack advanced medical facilities. The result of all these are migration of a majority of people from the interior areas to the capital city and setting up of most of the institutes and organizations in the vicinity of it only. The second strand of migration pertains to the students, a vast majority of whom move out of these regions for better education in other metropolitan cities of the region. While students leaving their native states in search of better education is a general phenomenon in the northeast, the problem in Arunachal Pradesh is compounded by the fact that there remains a palpable disconnect between the knowledge of the rituals and customs of their own culture and religious belief. This is primarily because of the lack of a script, written literature and a noninstitutionalization of the local cultural practices. As the students leave the confines of their community and villages, which are stronghold of their culture and tradition, they gradually lose touch with all these and adopt and get exposed to different nuances of their culture which has been re-created primarily for entertainment value and public consumption.

Adi culture and tradition: an Overview

Adis are a major tribe of Arunachal Pradesh with their population covering three major districts of the state, viz., East Siang, Upper Siang and West Siang. Like every other tribe of the state, Adis too are known for their unique customs and beliefs, beautiful dances and elaborate dress pattern. The major religious belief is *Donyi Poloism* although in the recent years, people have converted to Christianity.

One of the most prominent rituals followed by the Adis is the chicken sacrifice (*Ayenkanam*) during which the liver is taken out after killing the chicken following which the priest gives the prediction. This apart, rituals of prediction also include *Tagyrsonam* and *Ambuikanam* in which the dried leaves and rice grains are used for making predictions. The predictions are usually done by a resident shaman, also a *Miri*, who could be a female as well. The predictions are usually made regarding the nature of illness, which is usually classified into two types, viz., those caused by natural factors and those by the supernatural ones. Looking at the dried leaf or the dead liver, nature of illness is determined and propitiation to God are made to ward off the evil spirits.

In case of dress, separate dresses for men and women are woven by the women of the community. Helmets are made from cane, bear and deer skin, worn by men depending on the region. While older women wear yellow necklaces and spiral earrings, unmarried girls wear a *beyop* – an ornament consisting of 5-6 brass plates fixed under their petticoats. The traditional measure of family's wealth is measured on the basis of the possession of domestic animals, primarily *mithuns*, beads, land and other ornaments. Further, traditionally *gale* and *galuks*, worn by the male and female respectively, have a hierarchical origin. The hierarchy is determined the colour and the motif of these dresses.

The Adis have the most vibrant form of village democracy and judicial set ups with equal participation of men and women. The *Kebangs* use to meet in village community houses called *musup* or *dere* where major decisions are taken. In the recent times, the *kebangs* have been officially systemised with the elders being appointed by the district administration for a fixed tenure and are empowered to decide on disputes and conflicts arising in their respective villages. *Ponung* is one of the major dances of the community where the dancers, both male and female, dance rhythmically to the tune of religious chants by the shamans.

While these rituals and practices are confined to the villages and particularly amongst the older people, the younger generation is generally found to be ignorant of the traditional relevance of these rituals and customs and instead appropriated the same primarily for fun and holidaying.

Methodology

To analyse the level of understanding of some of the major beliefs and customs of the Adi community by the younger generation and the impact of education and technology vis-à-vis culture, a questionnaire with 15 questions has been designed. The questionnaire has been prepared using Google docs and distributed among 700 respondents belonging to the Adi community. The method of distribution included e-mail, posting the URL on the Adi community pages on Facebook, and visiting selective schools, colleges and households with the print version. The respondents have been categorized into four age groups, viz., 15-20 years, 21-25 years, 26-30 years and 31 to 35 years. Five point Likert scale has been used to record the responses. Descriptive results are used for the analysis of the data.

Major Findings

Of the 700 respondents, 67% (469 respondents) come under 15-20 years, 24% (168 respondents) under 21-25 years, 6% (42 respondents) under 26-30 years and 3% (21 respondents) come under the 31-35 age group with 71% (497 respondents) being male and 29% (203 respondents) female. All the respondents are educated with 27% (189 respondents) having either graduate or a post graduate or a professional degree and 73% (511 respondents) have either completed their High School (Class X) or Senior Secondary (Class XII) levels. 82% (574 respondents) follow Christianity and 18% (126 respondents) follow the indigenous faith, i.e., *Donyi Poloism*.

With the lack of a script and literature in the mother tongue (the available literature is only in English), the void is filled by Hindi, especially by the students who prefer to use Hindi over their mother tongue while speaking with their parents or siblings as well as with the people of



Fig. 1. Use of mother tongue at home

their own community. As shown in Figure 1, 80% of the total respondents denied using mother tongue with their family members or with the members of their own community. While 10% of the respondents preferred to remain neutral, 10% of the respondents use mother tongue while speaking with family and members of their own community.

One of the primary reasons for this lack of use of mother tongue is the migration from villages to the urban centres where they mingle with a heterogeneous group of peers and Hindi serves as the most common medium of communication. Gradually, the medium of informal communication at school has become the mode of communication at home and society as well and Hindi is fast serving as the lingua franca of the younger generation.

Distancing themselves from the villages has been responsible for a majority of the younger generation to become aware of the traditional knowledge systems, folk culture and myths associated with the Adi community. Instead they have become used to the vastly appropriated forms of cultural practices which are followed in the cities. The result is a gradual disappearance of many such rituals or the religious and cultural



Fig. 2: Knowledge of cultural & religious practices and myths

fervour associated with such festivals. Thus, only 9% of the total respondents have agreed to be well versed with the religious practices, folk tradition and myths associated with the Adi culture. 20% of the respondents remained neutral, but 71% of the respondents agreed of not being well versed with the same. Out of the 497 respondents who are not well versed with their tradition and culture, 90% (447 respondents) belonged to 15-25 age group, and 92% of those who are well versed with their indigenous culture and traditional practices come under the age group of 31-35 years (Figure 2).

This distancing is also responsible for declining faith in village administration systems. The system of *Kebang* which is an integral part of the Adi community, has been pivotal to resolve all major disputes in a fair and objective manner. Since each village has its own *Kebang*, the justice delivery mechanism has been swift and the decision of the *Kebang* is accepted and respected by everyone in the society. In a



Fig.3: Use of English/Hindi in SNS and Electronic platforms

nation where getting justice is a very time consuming and costly affair, *kebangs* have shown as a strong alternative and stood out as veritable examples of village democracy with an equal representation of men and women as the decision makers. The importance of *kebangs* is further underscored by the fact that the district administrations in Adi majority districts have officially nominated the elders of each *kebang* for a specific period and the verdicts given by them are taken into cognizance if an issue reaches the court of law. However, the faith on the *kebangs* among the younger generation is on the wane as they believe the courts of law serve as better platforms to resolve disputes than the former. 73% of the total respondents have preferred courts of law to resolve disputes over the *kebangs*, with only 17% reposing their faith on it. 10% of the total respondents preferred to remain neutral.

Social Network Platforms and other electronically mediated technologies for communication have emerged as major mediums to share information and remain connected. Some of these portals are instrumental in promoting indigenous cultures and popularizing myths, folklore and knowledge systems unique to a particular culture. The members of such groups are often found to communicate in their mother tongue using native script and in many cases, they use Roman script but the whole content is in their native tongue. Such pages and portals have proven to be immensely helpful in educating the young generation about their native culture and tradition.



Fig. 4: Contemporizing dance & rituals will preserve culture

However, of the total respondents, it has been found that 63% use English on the social network pages as against 26% who use Roman script but Adi dialect to post updates and comments. 11% of the respondents have remained neutral. Further, 70% of the respondents do not devote their time on reading literature based on their native folk tradition and myths, with only 17% showing an inclination for the same. Of the 70% of the respondents, 58% (284 respondents) belong to 15-25 age group. (Figure 3)

While all the respondents have agreed to the fact that curricula incorporation of their native culture will help in spreading awareness about their rich tradition among the children, the forced distancing from the villages owing to circumstances, has also resulted in accepting the forms of rituals as portrayed in the media, especially by the children. Hence, it has been found that 55% of the respondents believe that contemporizing their dance and religious tradition for entertainment, public consumption and profit making; preparing dresses with fashion quotient as a priority regardless of the hierarchy and custom will help in preserving their indigenous culture. As shown in Figure 4, while 15% remained neutral, 30% of the respondents believe that further deviation from the roots and tradition which has so far helped in keeping the community together.

Analysis of the data and reasons for cultural change

One of the major reasons for adopting Christianity is because of the erosion of faith from *Donyi Poloism*. While in the traditional Adi culture, people initially looked up to religion as the medium of relief and respite from all ills along with making it as a thread for binding all the groups and sub groups together, but migration from the villages to the cities in search of better jobs and education has been perceived as a weakening of the belief system. As a result, discontent against it grew and the space got filled up by Christianity. Further, Christianity has been propagated as a source of enlightenment, facilitated education and thereby getting an access to the world outside. In many a cases, monetary benefits and promises for better social infrastructure under the aegis of the church too has helped in getting people under its fold. However, the biggest possible reason for people getting converted to Christianity is because of its impetus on education and on the later stages, using the Roman or Devanagari script to publish literature pertaining to the oral narratives. Further, with the students migrating from the villages to the cities for education, there has been a conscious attempt at getting 'mainstreamed' in terms of religious belief and Christianity provided the best possible option for them.

The festivals, rituals and other social practices of the Adis are directly linked with their belief in a particular religious faith. With Donyi Poloism on the wane, coupled with migration from rural to urban areas in search of education and job, the traditional rituals, festivals and customs too have undergone a massive change. For instance, kebang as a system used to foster harmony and unity in the villages. It commanded trust and respect which stemmed from the belief that the decisions were binding on everyone and the decision delivery mechanism was swift and impartial. The importance of *kebangs* are recognized by the state government and is underscored by the recent steps at systemizing it through appointing elders to the *kebang* council. But, over the passage of time and with most of the people going out of their villages to urban centers, the belief on kebangs too have gone down and the people from the community, especially the younger generation relies more on judiciary and state law and order mechanism for resolving the disputes. Similarly, *musup* and *rashengs*, the dormitories for boys and girls respectively, which had their history dating back to the inter-village wars along with providing a common platform for the boys and the girls to develop their skills have disappeared even from the villages.

Technology brings access to information and it also helps in finding ways and means to preserve the dying cultures and folk traditions. However, in many a cases, as far as the Adi culture is concerned, the impact has been far from positive. Possibly the biggest compromise so far has been in the field of festivals and dances followed by costumes. One of the most famous and popular dances of the Adis is the Ponung in which ladies dance rhythmically to the slow chants of the narration of a myth by the shamans. There is a sacred value attached to it. However, in the recent times, with an attempt to popularize folk culture and contemporize it, the traditional chants and meanings associated with it has been replaced with modern songs and dances instead. Similarly, the color and motif in the dresses which originally has a hierarchical meaning have given way to fashion and profit making. The festivals too have lost the traditional fervour as was seen in the villages. Etor, for instance, was celebrated in villages to propitiate God for prosperity and to have the best breed of the mithuns (Bos frontalis). It involved an elaborate ritual of all the *mithuns* of a particular village being taken to an open ground with a bamboo enclosure and kept there for almost a week. On the day of the festival, the village headman offers a feast to all the villagers after each household completes the individual rituals associated with the festival. However, in the recent years, instead of the individual or common rituals and headman offering the feast, the people of the community, both in cities and villages donate money to have a *community feast*, where many a times, instead of the *mithuns*, chicken, pork or beef is offered.

Conclusion

From the survey conducted, it has been observed that unless urgent steps are taken, the traditional knowledge system, myths, and oral literature of this major community will be lost forever. One of the possible first steps for preserving the same is through institutional or curriculum incorporation of these traditions and myths, particularly in the school levels so that the children are given the correct information about the cultural practices followed by their community. Secondly, proper steps towards archiving the knowledge system could help promote and preserve the culture. Thirdly, for popularization of the culture, technology can be a major medium and social network and electronic portals a potent tool. However, appropriate frameworks must be developed so as to popularize the languages without script and making it accessible to the people in general. The entertainment industry too must play a sensible role in portraying the correct forms of any culture rather than presenting it for mere public consumption and profit making. Devoid of such steps, there is every possibility that cultures in their truest forms would disappear and what would be left is a much diluted and corrupted forms of the same.

While education and access to technology is vital for the progress of any society, the same should also be used for preservation of indigenous cultures and traditional knowledge systems. The indigenous cultures of the state of Arunachal Pradesh is already facing a crisis of identity due to lack of scripts for the languages spoken here and a resultant lack of a literary archive. There is a real danger of the cultures getting subsumed by dominant pidgin culture. The problem is further compounded by the fact that the young generation is largely isolated and distanced from their native cultures and traditions and instead are found to be more inclined towards the western and in many cases the *mainstream* Indian culture. While some of the efforts initiated by the *Adi Bane Kebang* (the Adi Literary Society) towards bringing out a lexicon, developing a script and making the same key board friendly, along with bridging the differences between the various sub-groups of Adi are laudable, but unless these are institutionalized, the outcomes of such efforts cannot be deemed as positive and the danger of eventual decline of the indigenous cultures remains fraught.

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The Use of Trilingual Instruction by Teachers on Different Instructional Phases in Selected Mathematics Classes in Central Philippines

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Abstract

This research sought to determine the extent of use of trilingual instruction: English (international language), Filipino (national language), and Hiligaynon (lingua franca) in Iloilo by Teachers in selected Mathematics classes in Iloilo City located in the central part of the Philippines. Specifically, it sought to determine the following: 1) the classroom activity areas in which teachers use English, Filipino, and Lingua Franca; 2) the extent of language mixing by teachers and their reasons for the use of language "mix" and 3) the language preferred as medium on instruction.

The research involved two public schools in Iloilo City representing DepEd-operated school and Chartered school. In each school, three classes were identified representing sections 1, 2, and 3, with an average class size of forty (40). A total of six (6) teachers were involved.

Three research instruments were employed a survey questionnaire, audio-recordings of classroom verbal interaction, and observation checklist. The survey questionnaire included an attitudinal scale, a difficulty scale, and open ended questions.

Results showed that in terms of sentences uttered, pure English still accounts for the highest number of utterances by teachers. Language mixing was minimal for the teachers. No pure Filipino sentences were uttered by teachers. This is evident because teachers were Hiligaynon speaking. In all the mathematics classes observed, the sequence of activities was almost the same. Teachers believed that the students were more effective in explaining using a mix of languages. Likewise, teachers admitted they are more effective when they used mixed language in teaching Mathematics.

Keywords: mathematics, lingua franca, language mix

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Introduction

All of us have a native language (mother tongue) learned from childhood through which we interact with kinsfolk and the community. Most of us in the Philippines also speak a regional language, also called lingua franca such as Ilocano in Northern Luzon, Cebuano and Hiligaynon in parts of the Visayas and Mindanao, and Tagalog in Central Luzon. Apart from this, most Filipinos speak the national language, which is widely used in centers of population throughout the islands. Many Filipinos can speak English, although the skill of using this language vary. Language has a vital role in the teaching-learning process. Studies show that language affects not only the cognitive and affective faculties of man and his environment, but his behavior as well (Gardner, 1975; O'Malley, J.M. & Chamot, A.J., 1990; Clark, E.V., 2004).

Statement of Purpose

This research sought to analyze the extent of use of English, Filipino and *lingua franca* by teachers in selected high school mathematics classes. Specifically, it aimed to answer the following questions:

1. What is the extent of the use of English, Filipino and *lingua franca* in mathematics classes by teachers?

2. What is the extent of the use of English, Filipino and lingua *franca* in specific activity areas in mathematics classes?

3. What is the extent to which teachers use language "mix" in mathematics classes?

4. What language(s) do teachers prefer as medium of instruction in high school mathematics?

Research Objectives

This research study sought to determine the extent of use of English, Filipino, and *lingua franca* (which is *Hiligaynon* in Iloilo) by teachers in selected mathematics classes in Iloilo City.

Specifically, it sought to determine the following:

1) the extent of teachers' use of English, Filipino, and the *lingua franca* in the various areas of instruction;

2) the extent of language mixing by teachers in the classroom instruction;

3) the language preferred as medium of instruction in mathematics

Methodology

This is a qualitative study of the use of language in mathematics classrooms which employed the documentation and analysis of classroom verbal behavior of teachers, particularly in the use of English, Filipino and the *lingua franca*, and language mix. It also employed a survey questionnaire to generate information on the teachers' attitude and preferences for the use of language.

The Context and Respondents

The research was undertaken in two public schools in Iloilo City representing DepEdoperated schools and Chartered schools. Three first year classes from each school with an average class size of forty (40), were involved in the study. The total number of students was 263. Six (6) teachers were involved, each one teaching a class. The classes in the Chartered school had Section 1 as a homogenous high-ability class while the 2 other sections were heterogeneous lower- ability sections. The classes in the DepEd-operated school were homogenous wherein Section 1 was the high-ability group and sections 2 and 3 were low ability groups. Three observations were undertaken in each class, making a total of 18

Subjects

Table I

Number of Respondents and Observations

Schools	No. of Classes (Students)	No. of Teachers	No. of Class Observations
Chartered School	3 (120)	3	9
DepEd-operated school	3 (143)	3	9
Total	6 (263)	6	18

B. Instrumentation

The instruments for gathering and organizing the data were formulated specifically for this research: a survey questionnaire of attitude and preferences for the use of language in teaching, an audio-recorder to record the classroom verbal interactions, and observation checklist.

The Survey Questionnaire

The survey questionnaire had 2 parts designed to elicit information from the respondents. Part I dealt with personal background information about respondents. Part II included specific items which called for attitudes or preferences measured using a 5-point Likert type scale to determine degrees of attitude or preference. The scale used was: E (extreme difficulty), M (much difficulty), A (average difficult), L (little difficulty), N (no difficulty at all). An open-ended question was asked at the end of the questionnaire to elicit information about language use and preferences.

Audio-Recording

An audio-recorder was used to record the classroom verbal behavior to capture teachers' language use in the classroom. Tally sheets were prepared for use to record the frequencies of teachers' statements using the different languages. A list of activity areas in each phase of the instructional period was prepared to serve as guide for organizing the data.

Phases of instruction

- 1. Review of previous lesson
- 2. Motivation
- 3. Presentation:
- a. Lecture/ Explanation
- b. Modeling/ Giving illustrative example
- c. Discussion/ Question -answer
- 4. Skill Development: Exercise/drill

- 5. Application
- 6. Evaluation: Testing
- 7. Giving assignments
- 8. Other activities (e.g. classroom management)

Data Gathering

Audio-recording

Audio-recording of classroom verbal behavior was undertaken unobtrusively to document the use of English, Filipino and Hiligaynon in the classroom interactions between teacher and students. Three observations were made of each class, with each observation covering a whole period of 60 minutes. A total of 18 classroom sessions was recorded. Transcriptions of the audio-tapes were analyzed. Then, statements were marked according to the language used; that is whether the statements were in English, Filipino, *lingua franca* or a language "mix". Statements using *lingua franca* were *classified as* Hiligaynon, Kinaray-a or Akeanon which were the common languages spoken in Iloilo. After the statements have been marked, they were tallied and the total frequency count for each language was summarized. Percentages of language use and language "mix" were derived. Patterns in the use of language use by both teachers and students.

The percentage of sentences uttered in a certain language was obtained using the formula:

Percentage of SU in the = Total N of SU in the Language X 100

where:

SU – means sentences uttered;

Language – refers to either English, Filipino, Hiligaynon, or "Mix" of language use

Characteristics of the Teacher Respondents

There were 4 female teachers, and 2 male teachers, reflecting the national trend of female to male ratio of teachers. Age range of teachers was 25-50 years of age. Average number of years teaching experience was 11 years. Four of the teacher respondents reported they spoke English well and 2 reported, moderately well.

Results of Survey on Language Use Preferences

1. Three teachers from the Chartered school responded that "English" was preferred in teaching mathematics.

2. The other three from the DepEd operated school responded "language mix" as preferred but one teacher stated that English should be used in higher ability sections and mixed language in the lower ability sections.

3. All 6 teachers responded that students in higher ability classes preferred the use of English in mathematics.

4. All 6 Teachers responded "Undecided" to the question on what language is best for teaching mathematics.

Results of the Open Ended Questions

All 6 teachers in both schools stated that the students using a mix of languages were more effective in giving explanations. All 6 teachers expressed they were more effective when they used mixed language in teaching mathematics

Results of Tape Recorded Observations

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1. In all the mathematics classes observed, the sequence of activities was almost the same.

2. Both English and *lingua franca* were used in the observed classes.

3. The *lingua franca* used was Hiligaynon. (*Kinaray-a* and *Akeanon* were not used in any of the sentences uttered by teachers.)

4. A mix of English and Hiligaynon was evident in the lecture / explanation phase of instruction.

5. Teachers of low ability classes in both schools used Hiligaynon more in making explanations.

6. Filipino was not used in any of the sentences uttered by teachers.

EXTENT OF USE OF LANGUAGES BY TEACHERS

School	Total				
Chartered	Ν	%			
1	678	16.32			
2	703	16.20			
3	715	17.21			
TOTAL	2096	50.45			
DepEd Operated					
1	641	15.43			
2	665	16.00			
3	753	18.12			
TOTAL	2059	49.55			
GRAND TOTAL	4155	100.00			

COMPARATIVE PERCENT OF USE OF LANGUAGES BY TEACHERS PER ACTIVITY AREA

	Language Used				GRAND TOTAL
ACTIVITY AREA					
	English	Hiligaynon	Mix	Filipino	Ν
	%	%	%	%	%
1. Review of previous	93	11	7	0	111
lesson	2.24	0.26	0.17	0	2.67
2. Motivation	187	9	5	0	201
	4.50	0.22	0.12	0	4.84
3. Presentation:	240	38	30	0	308
Lecture / Explanation	5.78	0.91	0.72	0	7.41

4. Modelling / Giving	228	1,267	78	0	1,567
Illustrative Example	5.49	30.35	1.88	0	37.71
5. Discussion / Question-	345	93	90	0	528
Answer	8.30	2.24	2.17	0	12.71
6. Skill development:	341	60	61	0	462
Exercises / Drill	8.21	1.44	1.47	0	11.12
7. Application	67	13	9	0	89
	1.61	0.31	0.22	0	2.14
8. Evaluation / Testing	543	78	42	0	663
	13.07	1.88	1.01	0	15.96
9. Giving Assignments	53	8	3	0	64
	1.28	0.19	0.07	0	1.54
10. Other Activities	83	67	12	0	162
	1.99	1.61	0.29	0	3.90
TOTAL	2,180	1,638	337	0	4,155
	52.47	39.42	8.11	0	100

Conclusions

1. Results showed that in terms of sentences uttered, language mix (English and Hiligaynon) was extensively used by teachers in both DepEd operated and Chartered schools.

2. The extent of use of Hiligaynon was also dominant in the DepEd operated school compared to the Chartered school where English was used more than Hiligaynon. Filipino was not at all used in all classrooms.

3. A mix of English and Hiligaynon was more evident in giving lectures and making explanations, as well as in modeling and making illustrations.

4. Teachers were undecided on the language best used in teaching mathematics. They perceive a mix of English and Lingua Franca to be the best medium for teaching mathematics.

Recommendations

1. Qualitative research on mathematics teaching should be conducted for a longer time in order to obtain a more comprehensive picture of the use of language in mathematics classroom teaching.

2. A documentation of verbal behavior in mathematics classes should be undertaken to for an extensive period of time to be able to generate more conclusive data.

3. Studies on the effects of the use of vernacular in mathematics classes should be undertaken to provide basis for policy making with regard to the use of language in the teaching of mathematics.

4. Studies should be conducted on the relationship between the extent of use of lingua franca and the students' performance, as measured by their grades in mathematics classes. Such studies will be useful basis for writing learning modules.

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Empowering Rural Communities through Small and Medium Enterprises (Smes) in Samar Island, Philippines

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Abstract

The study sought to determine the level of empowerment of rural communities through Small and Medium Enterprises (SMEs) in Samar Island, Philippines. It described the rural community profile, to find out whether or not they influenced the emergence and growth of the SMEs in the area. It determined the status and conditions of the SMEs, the level of empowerment of rural communities with SMEs, and the degree of relatedness of economic, socio-cultural, demographic, bio-physical, and politico-legal factors, and organizational variables to the level of empowerment of rural communities with SMEs. It also identified the problems that hindered the rural communities from achieving a high level of empowerment; and pointed out the reasons for the SMEs survival and growth over the years.

This descriptive survey utilized structured survey questionnaires, personal interviews and dialogues with the respondents. It was conducted in 12 municipalities in the three provinces of Samar Island, involving 256 respondents from 18 randomly selected rural communities with SMEs.

The findings showed that while the socio-cultural, demographic, bio-physical and politico-legal factors influenced the emergence and growth of SMEs, the economic factors influenced them the most.

The organizational variables of the SMEs such as the membership and ownership structure, leadership, policies, systems and procedures, resource mobilization, linkages and networking, communication systems, and awards and recognition were rated "good", and found significantly related to the level of empowerment of rural communities as regards material, perceptual and relational changes.

Keywords: Empowerment, Small and Medium Enterprises, rural communities,



Introduction

In rural communities, business establishments like the small and medium enterprises (SMEs) can be a source of power. SMEs have the capacities and capabilities to generate employment and income that can provide people fair chances of accessing, owning and controlling resources. Through employment and income that SMEs can provide, people get opportunities of availing improved services on health, nutrition, and education and further maximize their potential towards availing

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better facilities on housing, water and power supply. SMEs in rural communities emerge and grow when the needed support mechanisms conducive to business operations are in place. Trade policies for example, should encourage investors to establish, develop and expand their businesses. Other factors that may prove beneficial to the emergence of SMEs such as the presence of credit institutions with good lending packages, the technical intervention and support from government and private sectors such as capability building and skills enhancement programs to equip and capacitate the management and staff of the SMEs on the intricacies of business management.

Objectives

The study is designed to determine the level of empowerment of rural communities through the SMEs in the Samar Island, Philippines as determined by the changes in the material, perceptual and relational aspects of their rural life. It described the rural community profile in terms of economic, socio-cultural, demographic, bio-physical and politico-legal factors and find out whether or not they influence the emergence and growth of the SMEs in the area. The status and conditions of the SMEs in terms of membership and ownership structure, leadership, policies, systems and procedures, resource mobilization, linkages and networking, communication systems, and awards and recognition were also determined.

The level of empowerment of rural communities with SMEs was looked into in terms of material change, perceptual change, and relational change.

The degree of relatedness of economic, socio-cultural, demographic, bio-physical and politico-legal factors, and organizational variables to the level of empowerment of rural communities with SMEs was sought.

Common problems that hindered rural communities with SMEs from achieving high level of empowerment as well as the reasons for the SMEs survival and growth over the years were determined.

Methodology

This study is a descriptive survey, which utilized an interview schedule and structured survey questionnaire as the main sources of data. It employed a multi-stage sampling procedure.

Based on the target, 18 or 100 percent of the SMEs participated in the study involving 256, out of 270 respondents which constituted 94.81 percent.

To determine whether the community profile influence or not the emergence and growth of the SMEs, a structured survey questionnaire was utilized.

There were personal interviews conducted with the management and staff to establish the profile of the community organization. Their responses were validated from the available documents such as minutes of meeting, policy manuals, financial reports and other pertinent records of the organizations. To rate the status and conditions of the SMEs in terms of membership and ownership structure, leadership, policies, systems and procedures, resource mobilization, financial resources, linkages and networking, communication system and awards and recognition, a rating scale of 1-4 was used, in ascending order.

The survey instrument was translated into Samarnon purposely to elicit the desired data for the study. The translated version of the survey instrument was pre-tested in the three (3) rural communities with reported existing SMEs in Northern Samar involving 43 respondents. Pre-testing allowed certain revisions of some items in the instrument before they were used in the actual survey.

Owing to the relatively large number of respondents covered in this study, the researcher hired the services of nine (9) enumerators who were trained on how the instruments are administered.

To show the extent of agreement or disagreement of the respondents on the different items used by the researcher to measure the empowerment levels of the rural communities, a set of structured questionnaire was utilized.

The empowerment levels of rural communities in terms of the changes in the material, perceptual and relational aspects were evaluated using the scale of 1-Disagree to 4-strongly agree.

Findings

Rural Community Profile

Economic factors. The highest monthly income derived by the richest households in the 18 rural communities in Samar Island, comes from Northern Samar (mean of Php.55,000.00), while the lowest is generated by households coming from Samar (mean of Php 41,230.00). For the whole island of Samar, it revealed that an average of Php 45,970 represents the highest monthly income derived by the richest households. The average income of poorest household on the other hand, is Php 1,590 per month, which is short of 80.18 percent in order to meet the poverty threshold level of Php 8,022 income per month.

As to the overall picture of the 18 rural communities in Samar Island more than one half are living below the poverty threshold level.

The majority of the 18 rural communities engaged in commodity trading; while others concentrated on copra production and marketing, palay/rice production, and livestock and poultry production. The operating capital of most of these industries and enterprises operating in the rural community are partially provided by the owners plus their outside borrowings.

The major sources of capital for business operations available in the rural communities are banks, private creditors, and cooperatives. Other sources identified are government agencies, NGOs and other development institutions, and pawnshops. These financing institutions gave preference to small business owners, teachers and employees, tricycle and pedi-cab drivers as their beneficiaries whose average amount of loan entitlement mostly ranged from P5000 to P10,000 at a monthly interest rate of 5 percent, and a maximum term of 6 months.

Socio-cultural factors. All of the 18 rural communities conduct activities such as fiesta celebration and health immunization campaigns. The majority conduct CIVAC. Other community activities include barangay consultation/meetings, launching of community programs and projects and fund raising activities. Parents and Teachers Associations, Youth organizations, and BHW associations exist in all of the 18 rural communities; primary cooperatives in 14 rural communities; civic and religious organizations; and associations of farmers and fisherfolks, drivers and vendors.

Most of the rural communities have barangay health centers manned by the BHWs. Colds ranked number one among the reported illnesses during the last 6 months followed by fever and flu, coughs and other illnesses like diarrhea, amoebiasis, chest pains/TB, dengue, schistosomiasis, and pneumonia.

The majority of the rural communities have day care centers utilized as preparatory schools, and elementary schools, 50 percent have high schools and only 16.67 percent have vocational schools established in the community.

Out of the total 4,914 households from 18 rural communities, 48.78 percent have dwelling units made of wood/nipa; 31.89 percent have concrete dwelling units; and about 19.37 percent have barong-barong type of dwelling units.

Demographic factors. On the average, the majority of the total estimated percentage distribution of the population of the 18 rural communities are Catholics, and about 50.97 percent are males and 49.03 percent are female. The average household size is 5 and the average population per rural community is 1,413 with 720 male.

Bio-physical factors. The total estimated land area of the 18 rural communities is 7,925.20 hectares, of which 49.17 percent are planted mostly to vegetables, palay, coconut, root crops and fruit bearing trees. The majority of the rural communities have concrete roads and most of them have shallow wells for their supply of water. All of the 18 rural communities have access to electricity provided by the electric cooperatives operating in the 3 provinces of Samar Island. As to the presence of recreation facilities, 77.78 percent have public plaza; sports facilities; and beaches where the residents hold their picnics or parties usually during weekends.

Politico-legal factors. The majority of the rural communities have 11 barangay officials, Out of the total 188 barangay officials from the 18 rural communities, 52.13 percent are female, and 47.87 percent are males, an indication that more women were elected into office than men during the last barangay elections. In terms of policies and ordinances passed, most of them were on tax collection, cleanliness and safety of the community.

The Influence of Community Variables on the Emergence and Growth of SMEs

Community variables influenced the emergence and growth of SMEs in the rural communities. While the economic factors had strong influence, the socio-cultural, demographic, bio-physical, and politico-legal factors influenced the emergence and growth of SMEs in the rural communities.

The result implies that SMEs emerge and grow in rural communities: where people have visible means of income, sources of financing are accessible and industries are concentrated. They are also in a socio-cultural environment where people in the community organize among themselves regardless of their religious affiliation, spearheading activities that will redound to the benefit of the whole community and consequently promoting closer ties among them. Household population and household size of every family and the age range of population are basis in determining the type of enterprise to engage in, and in determining the size and volume of business transactions where road network, water supply and recreation facilities are present and easily accessible; where political leaders have good relations with the community residents and are supportive of enterprise development efforts, are manifested by the kind of policies and ordinances passed by the leaders SMEs are bound to develop.

		MEAN SCOP	RE		
VARIABLES	Management staff n=87	Community Household n=84	Institution Representatives n=85	OVER- ALL MEAN	VALUE
Economic	2.35	2.49	2.55	2.46	SI
Socio-cultural	2.03	2.13	2.12	2.10	Ι
Demographic	2.00	2.11	2.18	2.09	Ι
Bio-physical	2.33	2.24	2.37	2.31	Ι
Politico-legal	2.25	2.43	2.30	2.33	Ι
Overall Mean Score	2.19	2.28	2.30	2.26	Ι
Legend: 1:00 -	1.66 D	oid not influence	(DNI)		
` 1.67 -	2.33 II	nfluenced (I)			

 Table 1. Perception on the influence of community variables in the emergence and growth of SMES

2.34 - 3.00 Strongly Influenced (SI)

The Status and Conditions of SMEs in the Rural Communities

Status of SMEs. Of 18 SMEs covered by the study seven are single proprietorship; six primary cooperatives; two corporation; two partnership; and one NGO/PO. The average number of years that these SMEs have been in operation was 12 years. The highest however was 29 years, while the lowest was 5 years. The oldest registered SME came from Eastern Samar, having been registered for 29 years with the Department of Trade and Industry (DTI). The SME with the latest registration came from Northern Samar, having sought its registration in 1999, with the Cooperative Development Authority (CDA) a year after its organization and operation. The average number of personnel that these SMEs have is 23, with 105 as the highest and six as the lowest.

Membership/Ownership Structure

Single proprietorship. Out of the seven SMEs registered as sole proprietorship, four are from Eastern Samar; two from Samar; and one from Northern Samar. In terms of capital structure, majority had (71.43 percent) have loans coming from financing institutions particularly banks and government agencies, aside from their own investments as working capital for business operations.

Cooperatives. The total original members of the six cooperatives totalled 2,474, with 94.75 percent are active and the rest are inactive. About 98.87 percent of the members have share capital or investment, an indication that the members realize the importance and benefits of putting up capital or investment in the cooperative.

The average number of members transacting business within a month posted about 258, with the cooperatives from Samar province indicating the highest number of 822, out of 830 total present members. The lowest was also coming from a cooperative in the Samar province, with 14 out of 75 total present members.

Partnership, Corporation and NGO/PO. The original partners or incorporators of the five SMEs registered as partnership (2), corporation (2) and NGO/PO (1), totalled to 28, with 57.14 percent male members and 42.56 percent female. The present membership is 35, 94.29 percent of whom are active. Most (79.29 percent) have capital investment, and 62.85 percent transact business with the organization within a month.

Leadership

The leadership of the seven SMEs registered as proprietorships were vested on the owners, of whom are college graduates, while the other three are college levels. All are male, six have been managing their business enterprises since their inception, while the other one, has barely 2 years of experience in the actual business operations.

For the 11 SMEs registered as cooperatives, corporation, partnership and NGO, the highest number of Board of Directors/trustees was nine, coming from the two cooperative enterprises; while the lowest was three, coming from the two partnership ventures. Almost all of the members of the Board of Directors/Trustees work with their respective business organizations. The Board of Directors/Trustees of these 11
SMEs are college graduates; mostly with one year term of office. The majority (90.90 percent) conduct election as a process of selecting the officers/leaders, while only one practice the appointment process.

Policies, Systems and Procedures

Most of the 18 SMEs generate financial resources from internal sources primarily in the form of share capital or fixed deposit. Aside from the internally generated funds, 9 or 50 percent of the SMEs generate financial resources from external sources through loan availment from the banks and other lending institutions. There are four SMEs, three are cooperatives and one NGO that availed of grants and donations from funding agencies both local and national. Only seven (38.39 percent) of the SMEs implemented resource mobilization programs with the involvement of the member-owners and investors, the majority (61.11 percent) did not.

Linkages and Networking

The majority (72.22 percent) of the SMEs have established linkages with different institutions. Six (6) are linked with NGOs; another six with the GOs; five are linked with trade organizations; two with the academe; and the rest with people's organizations. The linkages focused primarily on technical assistance, financial assistance, and marketing linkage.

Only seven (38.89 percent) of the SMEs had sought membership with a alliance or network. Out of seven, 71. 43 percent were cooperatives being affiliate members of VICTO-NATCCO, RABA, Bahandi Producers of Eastern Visayas, Grains association and PASALEY; and two are NGO and proprietorship having sought membership with the Alliance of Local Producers such as Coir Industry of the Philippines and Samar Products Association.

Communication System

The majority (77.78 percent) of the SMEs used verbal communication in the management of their internal affairs. As to the means of contact during meetings and other related activities, 88.89 percent used personal contact; while one utilizes its own cable TV thru plugs. Frequently used communication facilities by the majority of the SMEs were telephones/cellular phones and typewriters while one uses base radio. There were two SMEs that did not use any communication facility fo their business operations.

Awards and Recognition

Out of 18, only 33.33 percent have joined in contests and competitions and won. These were 3 cooperatives. The rest were sole proprietorship (1), partnership (1), and NGO (1). The cooperatives won awards: Most Outstanding Cooperative with two municipal and provincial level awards and another one at the regional level; Best ERAP Store of the Year and Best in Savings and Credit, both at the provincial levels; Top Seller Award and Most Promising Product Design both at the national level and at the same category (institutional Category). The sole proprietorship involved in the steel craft and welding shop operations won in the Search for the Best Steel Craft

Design at the regional level; the NGO won the Top Seller Award at national level (institutional category); and he partnership venture, participated in the Summer sports competition and emerged as the winner.

Conditions of SMEs

The assessment made by the respondents on the condition of the SMEs revealed that all organizational variables like nature of membership and ownership structure; leadership; policies, systems and procedures; resource mobilization; linkages and networking; communication systems, and awards and recognition were assessed as "good".

		MEAN SCO	ORE		
VARIABLES	Manage- ment staff n=87	Community Household n=84	Institution Representatives n=85	OVER- ALL MEAN	VALUE
Membership		1			
and ownership structure	2.81	3.03	2.87	2.90	G
Leadership Policies	2.90	3.05	2.90	2.96	G
systems and procedures	2.65	2.82	2.61	2.69	G
Resource Mobilization	2.69	2.87	2.68	2.74	G
Linkages and networking	2.72	2.89	2.73	2.78	G
Communicatio n systems	2.71	2.64	2.69	2.68	G
Awards and recognition	2.77	2.66	2.66	2.70	G
Overall Mean Score	2.74	2.85	2.73	2.78	G
Legend: 1:00 -	1.75	Poor (P)			
`1.76 -	2.50	Fair (F)			
2.51 -	3.25	Good (G)			
3.26 -	4.00	Very Good (V	VG)		

Table 2. Assessment on the condition of SMEs as rated by Management and Staff, Community Households and Institution Representative

Level of Empowerment of Rural Communities with SMEs

The rural communities with SMEs were empowered along the aspects of material, perceptual and relational changes. The result of the study indicated that through SMEs the rural people experienced changes in their lives. On the material aspect, the SMES provided employment opportunities that helped rural people increase and sustain their

income and gave them fair chances of accessing, controlling and owning assets; of availing quality services on health care, nutrition and education. On the perceptual aspect, the SMEs helped rural people develop their self-esteem, enhance perception of their own individualities, interests and values; increased recognition and respect for individual's value and contribution, and their capabilities toward thinking ahead and planning for the future. On the relational aspect, the rural people appreciated the contribution of the SNEs toward increasing the role of the people in decision making, and in their bargaining power and participation in the political process. Furthermore, the SMEs are instrumental in providing strengths to local organizations and leadership, and in increasing appreciation among rural people that the SME is a tool towards achieving self-reliance.

Table 3. Summary Table of the mean scores on the assessment of the level of empowerment of SMEs in terms of Material, Perceptual, relational changes as rated by the management and staff, community households and institution representatives

		MEAN SCOR	E		
CRITERIA	Manage- ment staff n=87	Community House- hold n=84	Institution Representa -tives n=85	OVER- ALL MEAN	VALUE
Material Change	2.67	2.83	2.65	2.72	Empowered
Perceptual change	2.80	2.89	2.78	2.82	Empowered
Relational change	2.80	2.97	2.74	2.86	Empowered
Overall Mea Score	ⁿ 2.78	2.90	2.72	2.80	Empowered
Legend: 1:00 1.76 2.51 3.26	- 1.7 - 2.5 - 3.2 - 4.0	5 Not Empo 0 Slightly E 5 Empower 0 Highly E	owered Empowered red mpowered		

Problems on Achieving High Level of Empowerment

The common problems that hindered the rural communities from achieving a high level of empowerment were categorized into different levels- that of the individual, organizational or institutional and societal. At the individual level, the problems were focused on the negative attitudes and values of the people, and their lack of commitment to work for the development of the community. At the organizational or institutional level, the problems are focused on the weak support mechanisms from the stakeholders towards development programs and services in the community. At the societal level, the problems were traced to the government's and private sector's inadequate support to enable them to establish physical infrastructure that will enhance production, storage, processing and marketing of agricultural products. There were also problems on insurgency, too much politicking and poverty due to lack of gainful employment and income opportunities.

Reasons for the SMEs Survival and Growth Over the Years

The responses of the respondents with regard to the reasons why SMEs survived and continued to grow over the years, put emphasis on the following reasons- good business management; sound business policies, systems and procedures; sincerity, commitment and dedication among the leaders and staff; need-based products, programs and services; and strong linkages and partnership with government agencies.

Test of Relationships

The hypothesis that the organizational variables (nature and ownership of business enterprise, leadership, policies, systems and procedures, resource mobilization, linkages and networking, communication systems and awards and recognition) are not related to the level of empowerment of rural communities as determined by changes in the material, perceptual and relational aspects of rural life was disconfirmed indicating that the organizational variables are all related or associated with the level of empowerment.

Table 4. Perception on	the influence of	community	variables i	in the	emergence
and growth of <mark>SM</mark> E					
	1				

	X2 VA	ALUE	DECDEE			
VARIABLES	Computed	Tabulated Value 5%	OF DECISION FREEDOM		INTER- PRETATION	
Membership and Ownership structure	146.96	16.92	9	Rejected Ho	Related	
Leadership	183.85	16.92	9	Rejected Ho	Related	
Policies, systems and Procedures	106.14	16.92	9	Rejected Ho	Related	
Resource Mobilization	170.06	16.92	9	Rejected Ho	Related	
Linkages and networking	184.10	16.92	9	Rejected Ho	Related	
Communication systems	66.82	16.92	9	Rejected Ho	Related	
Awards and recognition	54.35	16.92	9	Rejected Ho	Related	

The test result of the hypothesis that the economic, socio-cultural, demographic, physical and politico-legal factors were not related to the level of empowerment of rural communities, indicated that except for bio-physical factors, all other factors such as economic, socio-cultural, demographic and politico-legal, were found to have

significant relationship with the level of empowerment of rural communities with SMEs.

	X2 VA	LUE	DECDEE		INTERPRE- TATION	
VARIABLES	Compute d	Tabulate d Value 5%	OF FREEDOM	DECISIO N		
Economic factors	54.35	12.59	6	Rejected Ho	Related	
Socio-cultural factors	15.25	12.59	6	Rejected Ho	Related	
Demographic factors	10.67	12.59	6	Accepted Ho	Not Related	
Bio-physical factors	2.18	12.59	6	Accepted Ho	Not Related	
Politico-legal factors	48.21	12.59	6	Rejected Ho	Related	

Table 5. Degree of relatedness of community variables to the level ofempowerment of rural communities with SMEs

CONCLUSIONS

The findings that the majority of the rural communities in Samar Island, Philippines lived below the poverty threshold level are attributable to the many interrelated factors prevailing within and outside the community. While the economy of Samar Island is basically agriculture, the dispersion of industries and enterprises related to agriculture is very minimal; instead concentration on commodity trading ventures has been observed. This situation is magnified by the fact that the lending windows, mostly coming from private creditors are only accessible to small business owners with lesser amount of loans, with higher interest charges and with shorter payment terms.

The organizations existing in the rural communities of Samar Island are limited to parents-teachers association (PTA), youth organization and BHW associations. It is observed that the presence of organizations engaging in economically sound and viable enterprises is very limited. This is one of the reasons why the interventions of government institutions are not very well felt, since their focus are directed to community organizations like cooperatives, now regarded as effective vehicles for socio-economic changes.

Mechanisms to disseminate and implement programs and services of both government and private sectors down to the level of the rural communities have been found to be weak. As concluded, rural communities in Samar Island lack access to information and communication facilities.

The capitalization of the majority of the SMEs in the rural communities of Samar island came from the members' and owners' own investments, in the form of share capital and deposits. The owners of the SMEs prefer to invest their own capital rather

than avail of external sources due to stringent policies and other requirements imposed, aside from liberating them from the possible risks of not being able to pay.

Only a little over one-third of the SMEs have sought membership with alliances ad network of business organizations from provincial up to regional levels. The membership of these networks and alliances was limited to the kind of commodity, and the type of economic activities engaged in, hence the availment of the programs and services like financial services and marketing assistance, are very minimal, if not nil.

The rural communities with SMEs in the Island of Samar are empowered in all the three aspects of material, perceptual and relational changes. The factors that influenced such empowerment were grouped into: the community related variables, which dealt with the external environment of the SMEs; and the organizational variables, which focused on the internal aspects of the SME as a business organization. On the external environment, the study focused on assessing the economic, socio-cultural, demographic, bio-physical and politico-legal factors of rural communities, whether or not they are related to the level of empowerment it achieved. The assessment revealed that except for bio-physical factors, all other factors were significantly related to the level of empowerment of the rural communities in the study. With regard to the organizational variables, the assessment focused primarily on membership and ownership structure; leadership; policies, systems and procedures; resource mobilization; linkages and networking; communication systems, and awards and recognition. The assessment results revealed that all organizational variables were related to the level of empowerment of the rural communities with SMEs

Implications and recommendations

The enactment of Republic Act 9178, otherwise known as the Barangay Micro-Business Enterprises (BMBEs) Act of 2002, is a positive step of the government in its efforts to spur economic development in the countryside by encouraging the formation and growth of BMBEs, aside from the SMEs. The law defines BMBE (Section 3, a of RA 9178) as a business entity or enterprise engaged in the production, processing or manufacturing of products or commodities including agro-processing, trading and services whose total assets including those arising from loans but exclusive of the land on which the particular business entity's office, plant and equipment are situated, shall not be more than three million pesos (Php 3,000,000.00).

In this regard, enterprises whose asset sizes do not qualify as SME, can now be reregistered as BMBEs where they can avail of the credit windows that will serve their financial needs from any of the mandated agencies of the government. Moreover, the BMBEs once registered, will be exempted from paying income taxes for income arising from the operations of the enterprise, and from the coverage of the minimum wage law.

Organization and Establishment of Samar-Wide Trade Association or Chamber of Commerce

Collaborative efforts among the three provincial offices of the Department of Trade and Industry in Samar Island should be directed toward the organization and establishment of a Samar-Wide Trade Association or Chamber of Commerce. The said association will ensure that the rights, benefits or privileges of the SMEs/BMBEs particularly in Samar Island are vigorously pursued and the interests of the owners/entrepreneurs are being protected.

Establishment of an Inter-Agency Regional SME Development Center

To strengthen the capabilities and capacities of the SMEs and BMBEs in region 8, along the areas of enterprise development and implementation management, it is recommended that a Regional SME Development Center be established. The University of Eastern Philippines and the Department of Trade and Industry of Region 8 will spearhead this, in collaboration with other agencies of both government and the private sector, including federation or union of trade associations and/or chambers of commerce.

Research Recommendations

Based on the findings of the study, it is recommended that similar study be conducted in other regions of the country to derive findings that may either support or refute the conclusions arrived at. The study may include technological factors, aside from the community variables used may include technological factors that will focus on how automation and technological advances influence the growth and development of SMEs, and how they relate to rural community empowerment.

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Management Practices and Communication Patterns of Lyceum De Cebu: Bases for Enhancement

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Abstract

This study assessed the extent of implementation of the basic management functions practiced by the teaching and non-teaching personnel in an academic institution in the Philippines. Also, it evaluated the effectiveness of the organizational communication patterns demonstrated by the two groups. In terms of management, the functions of planning, organizing, leading, and controlling were analyzed. Included in the assessment were the different communication patterns used such as downward, upward and lateral.

Results revealed that the planning and organizing functions were manifested to a great extent and to an even greater extent by the teaching staff and non-teaching staff, respectively. With regard to the leading and controlling functions, both groups manifested them to a great extent.

Referring to the effectiveness of the organizational communication patterns in the institution, a downward pattern was regarded by both teaching and non-teaching staff to be generally effective. Upward communication pattern was also viewed by both groups to be effective while the lateral communication was appraised by the teaching staff to be effective but very effective by the non-teaching staff.

The Fisher's t-test of differences revealed that there were no significant differences in the assessments made by the teaching and non-teaching personnel in management functions as well as in communication patterns.

In conclusion, the institution can benefit from an enhancement program geared towards the improvement of management practices and organizational communication. Moreover, collaboration among administrators and subordinates ensure the successful implementation and evaluation of the program proposed in this study.

Keywords: management practices, communication patterns, enhancement programs

Introduction

This study is based on the theory advanced by Murphy (2002) who summarized the challenges and opportunities open to administrators whose "mission of educational leadership has changed from knowing what to do in order to control and manage to knowing how to live in order to unleash the synergy of the system."

School management has never been more crucial as it is today. It is imperative in these complex times to reassess the quality of management practices prevailing in the academic institution. It is the primary responsibility of the school administrators to develop the institution's capacity to envision a desired state of affairs that induces commitment to continuous improvement (Fullan, 2006). Thus, the thrust now is for school administrators to rethink education and create new, more effective paradigms of management to improve the entire system.

Increasingly, researchers and practitioners are examining the role that effective communication has in propelling individuals to overcome barriers, work through problems, and achieve goals (Dumler, 2008). Many managers today consider open communication as a means of improving organizational effectiveness and quality. The goal of constantly improving quality can be achieved only if it supersedes differences, jealousies, competition between individuals and departments, and turf battles (Clarke, 2002). Aldag (2006) observed that communication pervades every aspect of the organization – every individual, team or department, each of whom has an external relationship with customers, suppliers and competitors. The organization cannot achieve its goals without open, two-way communication.

This study sought to determine the extent of implementation of the basic management functions and the effectiveness of the organizational communication patterns manifested in Lyceum de Cebu in the Philippines in order to recommend proposals for enhancement. Specifically, the study required the teaching and non-teaching regular personnel to assess the nature of their implementation of the different management functions such as planning, organizing, leading, and controlling. It also determined how effective the organizational communication patterns are in the academic institution under study based on downward, upward and lateral dimensions. Additionally, the assessments made by the teaching and non-teaching staff in terms of management functions and organizational communication patterns were compared. Using the results of the overall evaluation as bases, programs for enhancement are suggested and a model of management enhancement proposed (Figure 1).



Figure 1. Management Enhancement Model

Other models of management have been proposed in the past. Hoda's study (2004) examined the relationship between the cultural values and readiness to change in the

context of the non-profits, particularly two head start programs. This exploratory study used two standardized surveys to investigate (a) the values of upper and frontline management, (b) the alignment – misalignment of values of the two levels of management, (c) the relationship between differences in values and individual readiness to distinct eclectic sets of values with contrasting emphasis on one or more culture types. His study provided organizational leadership with an understanding of similarities and differences in managerial perspectives when different subcultures work together and its relationship to change. The study also suggested strategies to bridge culture gaps, leading to better management strategies.

Le, Barbosu, Luque and Wang (2012) introduced information Role Based Access Control (RBAC) model as an effective tool in accessing information for management use in the context of team collaboration and workflow to coordinate clinical education programs. Business intelligence as a management model in higher education was recommended for decision support in managing learning facilitator (Naowanich and Jeerungsuwan, 2013). In a study conducted on school-based organization, the management framework recommended goals, policies, curriculum, standards, accountability and the administrators and faculty development (Thida and Joy 2012). However, no model has yet been available that combined the functions of the management and communication flow of the entity.

The proposed management enhancement model is two-pronged. The first part involves a series of activities (i.e. meetings, brainstorming, etc.) oriented towards the implementation of positive changes in the various aspects of the basic management functions. The second part is a development program designed to enrich the existing organizational communication pattern in an institution. The output is a creation of a competitive advantage in key areas of management and communication. This model works on the bases of effective internal processes and structures that internalize the importance of the four management functions and the various types of activities involved in each type. Various strategies are available to help adaptation to an uncertain environment. In communication, goals are achieved by guaranteeing that structures are in place to ensure the richness of channels. To be effective communicators, managers must understand not only general interpersonal communication concepts, but also organizational communication patterns.

Based on the proposed model, a planning function intervention scheme is designed to enhance and sustain management practices, by periodically revisiting the vision, mission and goals of the school in lieu of the changes in the internal and external environments. The planning process is systematic and inclusive, involving effective action plan development as well as communication strategies to all stakeholders.

In the organizing function, periodic job analysis is essential as well as the creation and maintenance of a structure that supports organizational strategy. The distribution of authority is also crucial in an effective organization.

Improved practices involve periodically revisiting the compensation package to meet existing economic conditions. Intensifying internal coping strategies like budgeting and preparing reports overcome resistance to resources allocation restraints. Shared decision making by empowering all employees should be highly encouraged and accountability for all decisions and actions be upheld at all times including those implemented through group advisory. In the control function, performance standards for the intended outcomes of each functions are specified. It also accounts for a review of policies to guide present and future actions, of monitoring schemes, and of formulating standards to correct deviations and implement corresponding sanctions for violations committed.

Communication patterns are inherent in most organizations and can move in different directions (Goldhaber, 2005). The upward communication is a type of organizational communication which contains primarily the information managers need to evaluate the organizational area for which they are responsible and to determine if something is going wrong within it (Kreps, 2006). Techniques that managers commonly use to encourage upward organizational communication are informal discussions with employees, attitude surveys, the development and use of grievance procedures, suggestion systems and an "open door" policy that invites employees to come whenever they would like to talk to management. Certo (2006) commented that organizational modifications based on the feedback provided by upward organizational communication will enables a company to be more successful in the future. It is noted that the basic assumption behind upward communication is that employees should be treated as respected partners in searching for better ways to achieve goals (Kreps, 2006).

The lateral communication pattern makes use of theory input that communication moves across organizational members at the same hierarchical level. This communication is needed to coordinate activities of diverse but independent departments. On the other hand, through lateral communication, departmental relationship can be coordinated well enough to enhance the attainment of management system objectives (Certo, 2006). Many organizations are placing increasing emphasis on horizontal communication (Clarke, 2002). Downward communication is important because the lack of communication from superiors can leave workers misinformed, feeling disconnected, and less satisfied with their jobs (Dumler, 2008).

In enhancing upward communication, subordinates accountability to superiors is emphasized. The quality of the decisions made depends on the accuracy and timeliness of the communications that moves through the formal system. The more tangible and objective the information, the more likely that subordinates will communicate accurately with their supervisors.

Downward communication focuses on the theory input that communication flows directionally through formal and informal networks. The use of extensive feedback processes up and down the hierarchy ensures clarity.

The critical components of the model include a unifying vision in transforming internal processes and structures such as the management functions and communication flows to maximize effectiveness. Ultimately, this study was conducted with the aim of providing an environment that supports the fullest development of the human capacity.

Method

This study is a descriptive survey of management functions and communication patterns in a cooperative institution in the Philippines. The respondents included all teaching (n=20) and non-teaching (n=6) employees of Lyceum de Cebu in the Philippines working in various levels and offices of the school. Only those with regular employment status were involved in the survey. Their length of stay in the

school put them in a better position to assess the institution's management functions and organization patterns. The questionnaires used in this study were developed by the researchers. A panel of experts determined the validity of the instruments. The questionnaires were complemented with unstructured interviews to verify the responses given by some respondents. The first survey on Management Functions Questionnaire asked respondents to what extent the four basic management functions are implemented and manifested in their institution. Each question is followed by an assessment using a 4-point Likert scale equivalent to the following:

- 4 Very Great Extent (VGE) means that the management function is practiced and manifested in all instances.
- 3 Great Extent (GE) means that the management function is practiced and manifested in the majority of the instances.
- 2 Less Extent (LE) means that the management function is practiced and manifested in some instances.
- 1 Never (N) means that the management function is not practiced and not manifested in any instances.

The second survey Organizational Communication Questionnaire contains questions to determine the effectiveness of the communication patterns used in the institution. The scales have qualitative equivalents with the following meaning:

- 4 Very Effective (VE) means that the communication pattern promotes task accomplishment in all cases.
- 3 Effective (E) means that the communication pattern promotes task accomplishment in majority of the cases.
- 2 Less Effective (LE)– means that the communication pattern promotes task accomplishment in some cases.
- 1 Ineffective (I) means that the communication pattern cannot promote task accomplishment at all.

Permission to conduct this study was sought from the President of Lyceum de Cebu. Once approval was granted, the proponent sought the assistance of the various heads of the school to administer the survey instruments. The questionnaires were administered during the department meeting of each unit when the proponent explained the purpose of the study and to answer questions that might be raised by the respondents.

The accomplished questionnaires were collected and the responses to each instrument were tallied. The data were then processed and tabulated. Weights were assigned to the different scales and the weighted mean of each item was determined. The following formula was applied:

$\Sigma f \chi$		
μ		= N
Where	:	
μ	=	weighted mean
Σ	=	summation
f	=	the number of responses
under	each sca	le
χ	=	the weight assigned to
each s	cale	
Ν	=	number of respondents

Fisher's t-test was used to determine the differences between the two groups. The level of significance was set to 0.05

Results

Basic Management Functions

Table 1 describes how both teaching and non-teaching staff fared in the different management functions. The non-teaching staff (3.32) showed a higher mean from the teaching group (3.02) in basic management functions. The differences, however, were not significant with all values less than the critical t value of 2.080. This means that the practices relating to the said functions were adapted to a great extent. Specifically, the school in all cases (μ =3.41) prepared a blueprint during the planning process and identify the goals and the means for achieving them.

In the organizing function, the school related practices were applied to a great extent (μ =3.21) in terms of creating a structure that serves as a framework for the management to provide the means of coordinating people, technology as well as institutional resources to attain the school's goals and objectives.

The administration of the institution (μ =2.94) exemplified and reinforced to a great extent not only authority, but most importantly, proper guidance to the people in the school towards the realization of its goals.

With regard to the control practices, the school to a great extent (μ =3.12) was able to implement mechanisms to regulate and monitor the school's activities in consonance with the expectations established based on standards of performance.

Table 1. Descriptive Statistics of the Extent of Manifestation of the Implementation of the Management Functions

Indicators	Teaching Staff <u>n=20</u>		Non Teaching Staff <u>n=6</u>		Factor Mean	
	μ	Int.	μ	Int.	μ	Int.
1. Planning	3.21	GE	3.61	VGE	3.41	VGE
2. Organizing	3.08	GE	3.34	VGE	3.21	GE
3. Leading	2.77	GE	3.11	GE	2.94	GE
4. Controlling	3.03	GE	3.21	GE	3.12	GE
General Mean	3.02	GE	3.32	VGE	3.17	GE

VGE=3.26 - 4.00; GE=2.51 - 3.25; LE=1.76 - 2.50; N=1.00 - 1.75

Communication Pattern

Table 2 shows the effectiveness of communication among the teaching and non-teaching staff. On the extent of effectiveness of the communication patterns existing in Lyceum de Cebu, again the non-teaching staff (3.25) showed a higher mean from the teaching group (3.21). No significant differences, however, were found in all the three organizational communication patterns as the critical t value were less than the computed t value of 2.08.

The average mean (3.28) shows that the school has a very effective communication flow permeating in all three directions – upward, downward and lateral. Specifically,

the downward communication patterns adopted by the institution were assessed to be generally very effective (μ =3.40) which means that information generally passed through the chain of command that is through the hierarchical status structure. Table 2- Descriptive Statistics of the Effectiveness of Organizational Communication Patterns

Indicators	Teaching Staff <u>n=20</u>		Non Teaching Staff n=6		Factor Mean	
	μ	Int.	м	Int.	μ	Int.
1. Downward Communication	3.30	VE	3.50	VE	3.40	VE
2. Upward Communication	3.19	Е	3.22	E	3.21	Е
3. Lateral Communication	3.15	E	3.33	VE	3.27	VE
General Mean	3.21	E	3.35	VE	3.28	VE

VE=3.26-4; E=2.51-3.25; LE=1.76-2.50; I=1.0-1.75

Discussions

The purpose of this study was to determine the extent of implementation of the basic management functions and the effectiveness of the organizational communication patterns manifested in Lyceum de Cebu in the Philippines in order to recommend proposals for enhancement and to propose a management model to the school's administration.

The lack of significance in the responses between the teaching and non-teaching groups in management functions only showed that all members generally practice these functions. The school functions were not only performed by the people at the top, but it was shared and has trickled down to all sectors in the school hierarchy. This also means that the organization's goals are clearly communicated to all its members, ensuring their support and holding them accountable for their actions and decision. It can be inferred that the school is able to foresee the outcomes that the organization desires to achieve over the short, intermediate and long term period. Consistent with Senge (2007) it has been observed that to remain competitive in the global economy, organizations must learn to be comfortable with uncertainty and complexity. Hence, the planning helps organizations deal with complexity and uncertainty by providing a blueprint for the change.

The school administration was able to build a widespread commitment among their subordinates to attain the school's objectives and to stimulate the people to pursue higher performance. The availability of essential materials needed in the job created an environment where its people tend to adhere willingly to school rules and policies and with less resistance.

Practices of the control function can be considered admirable. The school's systematic process to regulate all activities led to full cooperation and compliance among all the employees in attaining the goals set. Infractions were addressed immediately and rectified through remedial measures.

Controlling according to Mockler (2001) is a systematic effort by business management to compare performance to predetermined standards, plans or objectives.

It also enables management to determine whether performance is in line with these standards and presumably to take any remedial action required to see that human and other corporate resources are being used in the most effective and efficient way possible in achieving corporate objectives. Control is both a process and an outcome (Dumler, 2008).

In terms of planning strategies, Lastimado (2000) emphasized the importance of laying down the objectives during the goal setting stage.

From a social system perspective, organizational effectiveness is not one theory but is comprised of inputs or resources from the environment, harmony among and quality of the school organization's transformational components, and the relative attainment of feasible standards that can be exchanged for other resources and incentives.

Hence, organizing function is extremely important to the management system because it is the primary mechanism managers use to activate plans. It is a means for achieving any and all organizational objectives (Mooney, 2004). Its purpose is to facilitate the use of each resource, individually and collectively, as the management system attempts to attain its objective (Certo, 2006). It can be construed from the findings that the work in the school is divided into specific jobs to ensure efficiency in their performance and attain better quality output.

Furst's research (2004) aimed to identify specific relationships between employee perceptions of managerial influence tactics, their beliefs regarding an expected organizational change, and their commitment to change. The findings suggested that managers may be more likely to shape their beliefs when they rely on supportive influence behaviors, including rational persuasion. These tactics communicate to employees why the change is necessary and provide evidence that the change will be successful.

The upward communication pattern and the lateral communication appraised by the teaching staff to be effective but very effective by the non-teaching staff. Upward communication of the school showed a well developed network, which helps the administrators gain timely information to make sound and prudent decisions. The message line traveling from the lower echelon to the higher up was conducive for the two groups to keep an open flow of data necessary to resolve common problems. It also provided the subordinates the leeway to give suggestions or ideas for improving task related procedures to increase the quality and efficiency of output.

The lateral communication of the school indicates that communications move across organizational members at the same hierarchical levels without too much filters nor threat of distortion. This channel of communication was designed not only to inform, but also to provide support and coordinate activities. The inter-department messages were regarded as an appropriate means of facilitating the accomplishment of joint projects or tasks. Vital information on matters affecting school operation were shared between and among the departments concern. Further inferred from the findings that, in a learning organization like Lyceum de Cebu, horizontal communication is particularly important in nurturing teamwork and cooperation. As Condes (1989) have shown, the communication management techniques utilized in the school enabled all its members to coordinate their efforts better to attain the school's goals. To improve school effectiveness and loosen the constraints, there should be a coherent, systematic approach to educational reform. Lyceum de Cebu cognizant of this dictum tries to establish systems of improvement using a set of critical environmental,

transformational and performance outcome variables.

As the institution under investigation in this study has successfully implemented, an effective learning organization is characterized by a continuous effort to find ways to create structures that enhance organizational adaptation; provision of a climate that is open, collaborative and self regulating while at the same time attracting people who are amenable to change. Furthermore, it also nurtures the maintenance of an open and continuous communication, and shared decision making mechanisms which are deemed to enhance organizational learning in schools. The model for management enhancement was intended for the purpose of enabling academic institutions to respond effectively not only to contemporary problems but also to new and emerging issues of management effectiveness.

In conclusion, institutions and organizations will benefit from an enhancement program geared towards the improvement of management practices and organizational communication.

It is recommended that future researchers look into the transformational leadership, accountability, faculty development, effectiveness of learning systems by evaluating the employability of their graduates, which were not included in the study.



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Appendix Table 1. Test of Hypothesis on the Planning Function	

	Δ	<u>lean</u>				
Indicators	Teaching Staff n=20	Non Teaching Staff n=6	t <u>computed</u>	t <u>critica</u> l	Decision	Interpretation
1. Formulating the	Jan Carlos					No
school's objectives is						Significant
done and participated by all sectors.	3.20	3.33	1.7540	2.080	Accept	Difference
2. Articulating the vision,						No
mission and goals of						Significant
the school in a clear statement.	3.55	4.00	0.2435	2.080	Accept	Difference
3. Clarifying the individual						
roles of all sectors of						No
the school leading to						Significant
the attainment of its goals.	3.25	3.67	1.2596	2.080	Accept	Difference
4. Identifying present						Na
and ruture						N0 Classificant
opportunities of the	210	2 67	1 2506	2 000	Accort	Difference
take advantage of them.	5.10	5.07	1.2350	2,000	Ассерт	Difference
5. Emphasizing internal						No
and external factors in						Significant
the planning process.	3.00	3.33	0.04942	2.080	Accept	Difference
6. Describing how the					manala inte	No
plans will lead to the						Significant
realization of the goals in a simple manner.	3.15	3.67	0.7599	2.080	Accept	Difference

Appendix Table 2. Test of Hypothesis on the Organizing Function

50		Mean	2			
	Teaching	Non Teaching	t	t		
Indicators	Staff	Staff	computed	critical	Decision	Interpretation
	<u>n=20</u>	<u>n=6</u>				
1. Structuring the human						
and material resources						NI-
to ensure that they are						NO Cianificant
consistent with the	2.00	2.67	4 7000	2 000	A	Significant
vision, mission and	2.90	5.07	1.7220	2,080	Accept	Difference
 Defining duties and 						
responsibilities in a						No
clear and simple						Significant
manner through the	3.25	3.33	1,4882	2.080	Accept	Difference
provision of job	0.20	5105			1.000-pr	onnenenee
description.						
						No
3. Promoting the unity of	3.15	3.67	0.8849	2.080	Accept	Significant
command.						Difference
4. Coordinating all						No
activities and efforts in						Significant
the school in a	3.15	3.67	0.5209	2.080	Accept	Difference
synchronized manner.						
5. Encouraging						No
specialization in the						Significant
performance of a	3.05	3.00	0.2110	2.080	Accept	Difference
specific task for each						
employee						
6. Limiting the number of						No
employeesbeing						Significant
supervised by a certain	2.95	2.67	0.2110	2.080	Accept	Difference
department head.						

		Mean				
	Teaching	Non Teaching	t	t		
Indicators	Staff	Staff	computed	critical	Decision	Interpretation
	<u>n=20</u>	<u>n=6</u>				
1. Providing employees						
with the necessary						No
resources that will						Significant
help translate efforts	2.80	3.67	1.7226	2.080	Accept	Difference
into performance.						
2. Maintaining a reward						No
system that gives due						Significant
recognition to	2.70	3.33	1.4882	2.080	Accept	Difference
exemplary						
performance.						
3. Using the						No
organizational						Significant
structure to	3.05	3.33	0.8849	2.080	Accept	Difference
encourage effective						
followership.						13
4. Allowing subordinates						No
to participate in						Significant
decision making on	2.85	3.00	0.5209	2.080	Accept	Difference
matters which affect						
the former.						N
5. Empowering employees						N0
to make decisions	2.60	2.67	0.011.0	2.000	A	Significant
within prescribed	2.60	2.67	0.2110	2.080	Accept	Difference
6 Soliciting all the school						No
mombars' inputs	2 60	2.67	0.2110	2 000	Accont	Significant
hefore final decidenc	200	2.07	0.2110	2,000	Accept	Difference
berore manuecisions						Difference

Appendix Table 3. Test of Hypothesis on the Leading Function

	<u>Mean</u>						
	<u>Indicators</u>	Teaching Staff n=20	Non Teaching Staff n=6	<u>t</u> computed	<u>t</u> <u>critical</u>	<u>Decision</u>	Interpretation
1	Measuring	<u>n 20</u>	<u>n v</u>				No
	performance based on the standards set by the school.	3.00	3.00	0	2.080	Accept	Significant Difference
2	Requiring every department to prepare reports and						No Significant
	budgets or activities conducted.	2.90	3.33	1.1023	2.080	Accept	Difference
3	Defining standards of performance for all functions done in						No Significant
4.	the school. Implementing corrective action or	3.05	2.90	0.8849	2.080	Accept	Difference No Significant
	deviations committed.	3.05	3.00	0.1663	2.080	Accept	Difference
5	Administering disciplinary actions to erring employees in a foir and						No
~	objective manner.	3.15	3.33	0.5051	2.080	Accept	Difference
6.	school members in reviewing the						No Significant
	school's ongoing operations.	3.00	3.67	0.9555	2.080	Accept	Difference

Appendix Table 4. Test of Hypothesis on the Controlling Function

		<u>Mean</u>				
<u>Indicators</u>	Teaching Staff n=20	Non Teaching Staff n=6	t <u>computed</u>	t <u>critical</u>	<u>Decision</u>	<u>Interpretation</u>
1. Calling of meetings	<u>n-20</u>	<u> </u>				No
between heads and						Significant
subordinates to	3.55	4.00	1.3275	2.080	Accept	Difference
discuss school					24490300000000	
matters.						
2. Using inter-office						No
memorandum to	3.75	4.00	2.0323	2.080	Accept	Significant
announce						Difference
important events.						82
3. Formulating	12000				- 421 () - (17 - 28) ()	No
guidelines for the	3.15	3.33	0.5941	2.080	Accept	Significant
completion of						Difference
A Demienting						No
4. Reviewing						140 Siznificant
department goals	2.05	3.00	0 1927	2 020	Accent	Difference
and objectives by	0.00	5.00	0.1257	2.000	Arrehr	Difference
denartment heads						
5. Discussing school						No
objective between						Significant
the heads and	3.30	3.33	0.0829	2.080	Accept	Difference
subordinates.					1	
6. Controlling the						
activities						No
undertaken by all						Significant
sectors of the	3.00	3.33	0.7554	2.080	Accept	Difference
school through						
progress reports,						
budgets and others.						

Appendix Table 5. Test of Hypothesis on the Downward Communication

Mean						
	Teaching	Non Teaching	t	t		
Indicators	Staff	Staff <u>n=6</u>	<u>computed</u>	<u>critical</u>	Decision	<u>Interpretation</u>
	<u>n=20</u>					
1. Encouraging informal						No
discussion between						Significant
heads and	3.00	3.33	0.8381	2.080	Accept	Difference
subordinates.						
2. Soliciting						
suggestions/inputs						
from the subordinates						No
for improving the	182402121	12/17-2	1010-000000	1968576-0		Significant
school services.	3.05	3.00	0.36972	2.080	Accept	Difference
3. Empowering						No
employees to solve						Significant
problems within their	3.10	3.00	0.80943	2.080	Accept	Difference
department.						
4. Using of grievance						
procedures if						
disagreements or						NT.
conflict occur between						0/L C''C't
and among heads and	2 05	2 22	1 2217	2 000	Accent	Difference
5. Drouiding a feedback	5.05	5,55	1.5517	2.000	Accept	MA
5. Flowlung a lecuback						Significant
reloving opproisel	2.00	2.00	0	2 000	Accent	Difference
reculte	5.00	5.00	0	2.000	Accept	Dureience
6 Adopting an open door						
nolicy encouraging						No
employees to talk to						Significant
the administration	3 15	3 67	1 4235	2 080	Accept	Difference
anytime		- Notes			Tresche	

Appendix Table 6. Test of Hypothesis on the Upward Communication

5	3	Mean				
<u>Indicators</u>	Teaching Staff <u>n=20</u>	Non Teaching Staff <u>n=6</u>	t <u>computed</u>	t <u>critical</u>	Decision	Interpretation
 Sharing of vital information between/among the various departments on matters affecting school operations. 	2.95	3.33	0.9149	2.080	Accept	No Significant Difference
2. Coordinating the activities and flow of information for diverse but related work units	2.05	3 22	0.2435	2 080	Accent	No Significant Difference
 B. Encouraging workers to solve school problems among thereseless 	2.20	2.22	0.4074	2.000	Accept	No Significant
4. Encouraging workers to consult others concerning the	3.20	2.22	0.4074	2.080	Accept	No Significant
school's activities. 5. Promoting teamwork among all employees	3.15	3.33	0.4470	2.080	Accept	Difference No Significant
in the school.	3.20	3.33	0.4074	2.080	Accept	Difference

Appendix Table 7. Test of Hypothesis on the Lateral Communication



Transcending Borders and Building Bridges: Creating a Technological Infrastructure to Support a Community of Practice across Nine Nations

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Abstract

Progressions in technology provide researchers with increased prospects to locate and conduct research across borders. This paper has two aims; firstly, it details the process of creating a technological infrastructure in supporting a particular community of practice as they engage with and learn from others who are distant in time and location. Secondly, the paper describes the different technological platforms such as videoconferencing, social networking, web publishing and data management that allowed for planning, managing, communication and conducting of research across nine nations. Web- blogs enabled researchers to report and reflect during the data collection process; social media such as Facebook provided a communal virtual space for the community to share updates and disseminate information; emails and the video phone service Skype facilitated open discussions with fellow peers in other parts of the world while Dropbox managed and archived data such as images, videos, text and audio.

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Introduction

In the early twentieth century, qualitative researchers attempted to find out about foreign cultures and groups of people. Nonetheless, identifying and recruiting hard to reach populations for research purposes proved challenging for researchers as they had be physically present to report from the field in order to observe and talk to the people about their lived lives. Fortunately, today, progress in technology has given qualitative researchers new tools, such as social networking sites, web cameras, electronic mailing systems that allow researchers the ability to contact, connect, observe and interview individuals who are geographically dispersed and/or hard to reach.

The use of these technological platforms in this article may serve to assist researchers in two important ways; firstly by detailing the process of how to create a technological infrastructure in supporting a particular community of practice as they engage with and learn from others who are distant in time and location. Second, to describe the roles of the platforms that allowed for planning, managing, communication and conducting of research across nine nations

Literature Review

Research with hard-to-reach, or "hidden" populations have been well-documented (Matthew & Cramer, 2008) especially when attempting to conduct research with populations such as members of marginalized or stigmatized groups (Benoit, et al, 2005, cited in Matthews & Cramer, 2008). Today however, advancements in technology have provided researchers with increased prospects to locate and conduct research across borders and with populations that are either geographically remote or inaccessible for personal or other reasons. The Internet provides opportunities for technological platforms that allow for borderless research. In the workplace, information and communication technologies (ICTs) have transformed professional activities and opened opportunities for people to communicate, collaborate and find and share information. Web 2.0's easy navigation enables users to contribute, disseminate and ingest information by providing platforms for rapid feedback and learning through observation (Su & Beaumont, 2010). Besides that, the Web 2.0 which generally includes social networking sites (SNSs) and web blogs has managed to shift focus on active participation, connectivity, collaboration and sharing of knowledge and ideas among users (Richardson, 2006). The emergence of blogs as an online self-publishing vehicle with interactive capability has provided new possibilities for self-expression and social interactivity. In recent times, this form of communicating has become a global phenomenon, with millions of people accessing these sites on their phones, tablets and personal computers to interact with friends or acquaintances (Sennett, 2012, cited in Goodyear, et. al, 2014). Facebook, for example, supports socialisation, and is known worldwide. It provides an opportunity for those who share similar interests, backgrounds, hobbies, etc to network with one another on the site. In the education sector, Facebook enables lecturers to interact with their students by creating groups related to certain topics (Esposito, 2007, cited in Balakrishnan, 2013). Scholars and policy makers have advocated and argued upon the potential benefits of using and embedding technology within the practice of teaching and learning (Russell, Bebell, O'Dwyer, & O'Conner, 2003; Tsoulis, Tsolakidis, & Vratsalis, 2012). In second language teacher education, ICT tools ranging from blogs

to virtual learning environments have been employed to support second language teacher education (Johnson, 2006; Kuzu, 2007). Many studies have shown that Information and Communication Technologies (ICT) such as blogs could promote pre-service teachers' reflective practices and help them better connect theory with practice (Soubrié, 2006, cited in Bangou, 2011).

The Project

The research project is a collaborative effort between Brunei Research Council and Universiti Brunei Darussalam (UBD), the Asia Pacific Regional Network for Early Childhood (ARNEC) and supported by UNICEF (ROSA). This is a regional research project that studied eight selected early childhood programmes from countries across the region between March – June 2015; namely, Bhutan, Cambodia, India, Indonesia, Pakistan, Philippines and Nepal. The purpose of this project was to provide insights into factors that support effective early childhood programmes, with a focus on those that are underpinned by commitment to equity, sustainability and inclusion.

Project Background

According to Shonkoff (2010), early childhood policies and programmes, especially those that cater for children in complex, low resourced and/or threatening environments, are in urgent need of "dramatic rethinking" (p.362). The reason being, traditional, standardized early childhood education approaches that are widely associated in high-income countries with "best practice" are neither practical nor suitable for many communities across the Asia Pacific region.

While there are examples of early childhood programmes that have adopted innovative approaches to overcoming important issues such as access and cultural relevance, documentation of these innovations has not been rigorous enough to support their wider implementation. Hence, Shonkoff's (2010) calls for research that are designed to gather evidence on novel, contextualized approaches to supporting young children's early development and learning.

The research proposed here responds to these calls by supporting documentation of innovative examples of early childhood programmes across the region that can advance knowledge in provision of effective, sustainable supports for early childhood. The proposed focus is specifically on approaches that cater specifically for children from 'marginalized' or 'at risk' communities, which are either grounded in community priorities / circumstances, or have been successful in garnering community support / involvement.

Purpose of the Research

The purpose of the research is two-fold; firstly to support current efforts in documenting examples of early childhood programmes across this region and secondly, in relation to the first purpose, the second goal of this research is to focus specifically on innovative approaches of early childhood care and education.

The aim of this research is to better understand what can be learnt from these selected "noteworthy" practices about how to effectively provide early childhood supports in hard to reach, resource constrained communities. Ultimately, the project hopes to

contribute to building an evidence base on what works, how and why in terms of providing early childhood supports for children from hard-to-reach contexts in the Asia Pacific region through in-depth documentation of existing Noteworthy Practices, with a particular focus on documenting community perspectives and programme-community linkages.

Research Design

The research was conducted in eight countries/sites around the region where Noteworthy Practices had been identified by ARNEC and the research team, following a regional-wide call for Expressions of Interest distributed via ARNEC and other early childhood networks. In line with current priorities outlined in regional discussions and forums, innovative programmes involving the local community that reflect a commitment to Sustainability, Inclusion, and Equity were selected and identified. Local researchers were required to document these innovative examples of early childhood programmes across the Asia Pacific region that advance knowledge in provision of effective, sustainable supports for early childhood.

The project adopted a Case Study methodology whereby each selected Noteworthy Practice site was treated as an individual "case" and the local researchers from countries where the selected programmes, with assistance from the team at Universiti Brunei Darussalam (UBD), were to conduct in-depth studies of each case. Researchers were to be based within the communities that they are working with for a period of 3-4 weeks during initial phases of research and would then be working with and visiting communities regularly over a period of 4-6 months to gain access (to make inroads gain acceptance by the community); the following stage was for the researchers to engage in intensive data collection, finally, the researchers working with the team from UBD would write up the findings in the form of case studies which are articulated through narratives and/or vignettes.

Among the main responsibilities of the UBD team towards the project and the researchers were to facilitate two (2) regional technical workshops on research design, methodology and data analysis; provide ongoing research support for local researchers via online/virtual communication platforms and to provide on-site technical assistance during the period of field work. In order to do that, the team had to create a technological infrastructure in supporting a particular community of practice as they engage with and learn from others who are distant in time and location. The following sections details the process and the contributions of these platforms.

Roles of technological platforms in the research

The research comprised three stages:

Stage 1: Recruitment and induction of country research teams and induction The research required a total number of two people comprising 1 researcher and 1 programme staff. Recruitment and/identification local researchers was conducted through a call of interest via the specific websites, for example, ARNEC. Interested parties were required to respond to the call and email the required information to ARNEC Secretariat which would then share these details with the UBD team. Prior to the call, numerous initial discussions on the research project were held via Skype meetings between ARNEC, UBD and members of the steering committee who are located in India and Nepal on matters pertaining to the research. Out the many respondents, 8 programs were selected, alongside 8 local researchers. As part of the induction process, the First Technical Workshop for Noteworthy Practice Documentation 2015 methodology workshop was held. The workshop allowed for participants to not only understand the research approach in depth but also to have the opportunity to engage each other in their roles as researchers, stakeholders and programme staff, through a collaborative process. Together with the workshop facilitators from UBD, the participants provided and shared contexts that enabled the engagement of knowledge and experience from their particular country's program.

An essential part of the workshop was a session on setting up of the technological platforms which would enable all parties to update, connect and network with each other. As the focus of this research design is on gathering community and programme staff perspectives, notwithstanding the researcher observations and reflections, various social networking (Facebook and Web blogging) and data management (Dropbox) were introduced to capture these forms of data. Researchers were taught how to set up personal Facebook pages (for those who did not have one), while a group page was also set up to provide a platform for the participants to share contexts that enable the engagement of knowledge and experience from their particular country's program. Besides Facebook, the researchers were also required to set up personal blogs to record their reflections throughout the research process. These entries served to provide information on the research sites, besides providing a private space for personal thoughts and feelings as well as to receive feedback from fellow researchers from the said community of practice. An important aspect of these social sites to consider is the issue of privacy, for this project, access was given only to the community.

The research approach sought to gather information on linkages that are formed between programmes and communities, in order to highlight how these linkages support effective practice, and to identify potential areas for further strengthening. In order to facilitate data storage from all 8 sites (Bhutan, Cambodia, India, Indonesia, Nepal, Pakistan, Philippines), the UBD team designed its own workflow process through the use of information technology. Dropbox, in this case, was chosen to manage the data collected as it was accessible from multiple distributed and connected resources and provided free cloud storage service for sharing and storing files including photos, documents and videos. The participants were also taught how to set up their Dropbox accounts and access the data available.

Stage Two : Continual on-going in-field support was provided by research team based at UBD followed by a second follow-up workshop to discuss findings and plan reports.

In order to provide continual support to the researchers, the team from UBD relied very heavily on emails and Skype. Some researchers preferred Skype as a platform for face to face discussion as well as being able to speak instead of writing. Social networks such as web blogs provided the community with on-going information on the progress of each researcher and Facebook was used to reach out to the whole group whenever the need arose. Prior to visits to the sites by the UBD team, the researchers would update their blogs and Facebook page with regards to the sites. As part of the continual support for the researchers, the team from UBD would advise on data analysis and reporting to ensure consistency across sites through emails and occasionally, make important announcements on Facebook as it seemed to be a popular platform for the community.

Stage three: The Final outcome: reports from the researchers

The outcome of the research was for each researcher to produce a report. The blogs which provided a space for reflections and 'storage' of details during the research process provided the necessary information for anecdotes and vignettes in the report. Dropbox which stored interview recordings, photos and other relevant information gave the community access to data to share and disseminate information as well as to back up data. Emails and Skype became essential for communication between the researchers and the UBD team as drafts were sent back and forth for comments, suggestions and even correction. Without these two forms of electronic communication between both parties was necessary for purposes of clarification and explanation.

Limitations and challenges of technology as means of support in the project

All researchers found technology helpful as it played a pivotal role in communication; from the conception of the project to the final stage of report production. In addition, technology helped build personal bonds and friendships as members it provided a channel for communication at all times, albeit the geographical distances. Among the preferred form of technology were emails, Facebook and Skype. Whilst they acknowledged the necessary role of technology during their research process, for example, most started the research process by sending emails to the respective program managers, informing of their intents and action plans, there were also constraints such as the speed of internet, lack of internet access in some remote areas, delay in replies through emails (even to the extent of some mails being ignored). Additionally, some researchers had very little experience with some of the technological platforms prior to the project, for example Web blogging and Facebook, thus were adverse to the idea of using them as forms of communication with fellow researchers.

In conclusion, while technology has the potential for providing a mechanism for researchers to connect and network with others who may share similar life experience by providing a communicative space, external to the physical site of an emerging community of practice (CoP) to support researchers' professional learning and practice, practical constraints such as exposure, researchers personal preference, access and even availability of the technology must be considered. However, it cannot be denied that progressions in technology have provided this research project alongside its researchers, prospects to locate and conduct research across borders through technological platforms that have bridged physical distances and connected this community of practices.

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Performance of the Kindergarten Teachers and Its Relation to Pupils Achievement in Different Learning Areas

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Abstract

This study aimed to determine the performance of the kindergarten teachers and its relation to pupils' achievement in different learning areas in the Division of Kabankalan City. Using the standardized assessment and evaluation of the Department of Education secondary data, 100 kinder teachers and 2901 kinder pupils were investigated to determine the performance of the kindergarten teachers based on their Competency-Based Performance Appraisal System for Teachers and the periodic assessment of kinder pupils collected as secondary data. Weighted mean, Pearson-r, chi-square, Analysis of Variance were used in the study. Findings revealed that the kindergarten teacher respondents were 26-31 years old and most of them were female and married; they spent teaching for two years and less and passed They were very satisfactory as to the Licensure Examination for Teachers. instructional competences, school, and home and community involvement, personal, social, and professional characteristics. It also revealed that performance of the kindergarten pupils on their period of assessment shows that they were slightly advanced in their development. It also shows that domain as to performance of the kindergarten pupils were average overall development. Based on the results, it is recommended that Kindergarten teacher must augment their educational qualification and pursue their graduate studies and must develop the total personality of the children for them to achieve high advanced development to become productive individual.

Keywords: performance, kindergarten teacher, learning areas, professional, pupil

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Introduction

Early childhood educators face tremendous challenges in supporting children's development. Given the task that children must acquire learning best in meaningful contexts, through conversational interactions, and through encounters with written language, these must be the focus of instruction for teacher. Teachers of young children must obtain more education, better compensation, and greater respect; their role in supporting children's well-being and future potential (Taylor, 2003).

A kindergarten teacher must forthrightly hone his/her skills in promoting parenting knowledge, parenting skills, collaborating with parents in instructional decisions, communicating between home/school, advocating for increased parent involvement. Many early childhood professionals succeed in these areas through newsletters, phone calls, and parent/teacher communication folders, emailing, hosting parent/child activities at school, parent/teacher conferences, parent-focused workshops, and continual, in-service professional development.

Considerable evidence exists that high-quality early childhood education programs for children from birth to age five can have long-lasting, positive consequences for children's success in school and later in life, especially for children from low-income families (Raver, 2009)

The researcher observed that the kindergarten teachers are striving hard to do their part in molding the young minds and hearts of every learner to achieve quality learning and academic excellence. Despite of the efforts exerted by the teacher, there were learners who could not cope up with the ideas and still difficult to learn, during seminars and meetings a lot of kindergarten teachers were also facing the same problem thus, the researcher finds it interesting how the kindergarten teacher performance affects to the pupils achievement in developing young learners to become productive citizen in the country. Teachers play an important role in fostering the intellectual and social development of children during their formative years. The education that teachers impart plays a key role in determining the future prospects of their learners and it is said as the weapon in the battle called life, teachers provide the tools and the environment for their learners to develop into responsible adults.

The main purpose of this study is to appraise the performance of the kindergarten teachers and its relation to the kindergarten pupil's achievement in the different learning areas.

Conceptual Framework

Teacher of Kindergarten pupils play an important role in fostering the intellectual and social development of children during their formative years. The education that teachers impart plays a key role in determining the future prospects of their students. Whether in preschools or high schools or in private or public schools, teachers provide the tools and the environment for their students to develop into responsible adults it advocates educational programs that, like Head Start, take into account not only academic needs but conceive of children as whole persons with social, emotional, and physical needs and strengths, in a family context (Hodgkinson, 2003). Although most kindergarten teacher preparation programs address language development, little emphasis is given to the role of experience and learning, especially within the social and cultural context because this dimension of language acquisition is overlooked, many teachers do not know how to support children's language learning at various levels of development nor recognize when language development

does not proceed as expected. Kindergarten teachers need to talk with children in ways that ensure that their language continues to develop, their vocabulary increases, and their grammar becomes more complex. By school entrance, the processes of socialization and language development are well under way. When children are served in programs outside of the home beginning as babies, toddlers, and preschoolers, socialization occurs simultaneously in two environments. It is especially important to respect students' home languages and cultures.

The figure below shows Kindergarten Teacher Performance and Pupils Achievement.



A Schematic Diagram Showing the Relationship of the Variables of the Study

Methodology

Research Design, Instrumental and Responsibility of the Study

This study utilized the standardized questionnaire on Competency-Based Performance Appraisal System for Teachers used as the principal mean of collecting data. It allows a better description and understanding of the study that assist the researcher in interpreting the data. Descriptive research can be either quantitative or qualitative. It can involve collections of quantitative information that can be tabulated along a continuum in numerical form, such as scores on a test or the number of times a person chooses to use a-certain feature of a multimedia program, or it can describe categories of information such as gender or patterns of interaction when using technology in a group situation. It often uses visual aids such as graphs and charts to aid the reader in understanding the data distribution. Because the human mind cannot extract the full import of a large mass of raw data, descriptive statistics are very important in reducing the data to manageable form. When in-depth, narrative descriptions of small numbers of cases are involved, the research uses description as a tool to organize data into patterns that emerge during analysis. Those patterns aid the mind in comprehending a qualitative study and its implications. For the selection of respondents,100 kindergarten teachers and 2,901 kindergarten pupils of the Division of Kabankalan City ,Negros Occidental, Philippines.

Data Analysis

To measure the socio-demographic profile of the kindergarten teachers, frequency counts were utilized. To assess the performance on kindergarten teachers in the Division of Kabankalan, weighted mean was utilized. To determine the significant relationship of the performance of the kindergarten teachers to the pupils learning achievements, ANOVA was utilized.

Findings

Findings revealed that the kindergarten teacher respondents in the Division of Kabankalan City were 26-31 years old (fc=45%) and most of them were female (fc=97%)and married (fc=53%). Kindergarten teachers in the Division of Kabankalan were baccalaureate degree (fc=58%); they spent teaching for two years and less (fc=43%) and passed the Licensure Examination for Teachers (fc=61%).

TABLE I

MEAN PERFORMANCE OF KINDERGARTEN TEACHERS

Teacher's Performance	Mean	Interpretation				
Instructional competence	2.99	Very Satisfactory				
School, home, community involvement	2.67	Very Satisfactory				
Personal, social and professional	3.03	Very Satisfactory				
characteristics						
Grand Mean	2.89	Very Satisfactory				

The Performance of the kindergarten Teachers in the Division of Kabankalan City were very satisfactory as to instructional competences, school, home, and community involvement, personal, social, and professional characteristics.

TABLE II

MEAN PERFORMANCE OF THE KINDERGARTEN PUPILS IN TERMS IN PERIOD OF ASSESSMENT

District	1 st Assess	sment	2 nd Assessment		3 rd Assessment	
	Average of Standard Score	Interpretation	Average of Standard Score	Interpretation	Average of Standard Score	Interpretation
K1	65	slight delay in overall development	86	Average overall development	119	slightly advanced development
K2	88	Average overall development	90	Average overall development	119	slightly advanced development
К3	71	significant delay in overall development	92	Average overall development	118	Average overall development
K4	73	slight delay in overall development	92	Average overall development	118	slightly advanced development

K5	88	Average	115	Average	119	slightly
		overall		overall		advanced
		development		development		development

Table II reveals that the performance of the kindergarten pupils in Kabankalan district were improving as to the period of assessments.Furthermore on the on the third assessment period the performance of the kindergarten pupils in the division of Kabankalan were slightly advance in development except Kabankalan District 3. It implies that the kindergarten performance as to the different period of assessment was increasing and the children were ready for the next grade level.

TABLE III MEAN PERFORMANCE OF THE KINDERGARTEN PUPILS IN TERMS OF SELECTED DOMAINS

Domains	Kindergarten Performance
Gross Motor	9.61
Fine Motor	10.54
Self-Help	10.16
Receptive Language	10.01
Expressive Language	9.21
Cognitive	11.58
Social Emotional	11.49
Total	72.60
Standard score	100.00
Interpretation	Average Overall development

It reveals that the performance of the kindergarten pupils in Kabankalan district as to domains were average over all development with the total of 72.60 out of 100 as the standard score. It implies that the kindergarten performance as to the domains of assessment was in average overall development and the pupils were eligible to proceed on the next grade level.

Relationship between the performance of the Kindergarten teachers to the pupils learning achievements .The ANOVA presents the significant difference between teachers performance to gender of teachers with the p-value less than 0.01. This means that there are no significant differences on the teacher's performance to the teacher's gender in their means, to accept the hypothesis and concluded that there is no significant difference of teacher's performance to their gender.

According to the gender-stereotypic model, boys fare better academically in classes taught by males and girls fare better in classes taught by females. The gender-invariant model suggests that the academic motivation and engagement of boys and girls is the same for men and women teachers. We also examine the relative contribution of student-, class-, and school-level factors, finding that most variation was at the individual student level. Of the statistically significant main effects for gender, most favored girls. In support of the gender-invariant model, academic motivation and engagement does not significantly vary as a function of their teacher's gender, and in terms of academic motivation and engagement, boys do not fare any better with male teachers than female teachers (Martinez, R., and Dukes, R. L.2001).

Analysis of variance between performance and the civil status of the Kindergarten teachers. The ANOVA shows the significant difference between teacher's performance to teacher's civil status with the f tabular value of 3.488 and with a significant difference of .034. This means that there is a significant differences on the teacher's performance to the teacher's civil status, this means to reject the hypothesis and concluded that there is a significant difference of teachers performance to their civil Status.

Furthermore, early childhood interventions help develop "soft skills." A mother kindergarten teachers helps her students learn patience, discipline, time management and persistence — hugely important skills in the workplace and in life. Starting one's school career on the right foot, (Banks, J.A. 2003) adds, "Changes the way a student sees himself, and that changes the way other people see him. It leads to this virtuous cycle" that has profound implications that continue into adulthood.

TABLE IV

Performances of the Kindergarten Teachers to the Pupils Learning Achievements							
	t	Sig. (2- tailed)	Decision	Interpretation			
Teacher	-15.901	.000	Reject Ho	Significant			
Performance – 1st							
Assessment							
Teacher	-18.205	.000	Reject Ho	Significant			
Performance - 2nd							
Assessment							
Teacher	-	.000	Reject Ho	Significant			
Performance - 3rd	386.453						
Assessment							

It presents the significant relationship between performances of kindergarten pupils to pupils learning achievement in the different assessment periods. It reveals that there are no significant differences on the performance of kindergarten pupils to pupils learning achievement in the different assessment periods accept the hypothesis and concluded that there is no significant difference of performances of kindergarten pupils to pupils learning achievement in the different assessment periods.

Kindergarteners are constantly developing in the different domains (cognitive, language, physical, creative and aesthetic, socio-emotional, and values and character). Thus beginning at an early age the child must be cared for and given all the opportunities to address current developmental needs and prepare him/her for lifelong learning. Kindergarten classrooms, therefore, should multi-level because kindergarteners will differ in their development in each domain (Cummins,J. 2005). The ANOVA revealed the significant difference between teachers performance of kindergarten teachers to pupils learning achievements, with a significant difference of .000. This means that there is significant differences on the teacher's performance to the kindergarten learning achievements reject the hypothesis and concluded that there is a significant difference of teachers' performance to the pupils learning achievements.

Many factors contribute to a student's academic performance, including individual characteristics and family and neighborhood experiences. But research suggests that, among school-related factors, teachers matter most. When it comes to student performance on reading and math tests, a teacher is estimated to have two to three times the impact of any other school factor, including services, facilities, and even leadership (Chan, K. S. 2006).

Conclusion

Based on the above findings, this study concludes that kindergarten teachers in the Division of Kabankalan City were at legal age, most were female and married and a baccalaureate degree holder with two years below of experience and a licensed teachers. It is also revealed that kindergarten teachers were performing very satisfactorily to their teaching profession in developing young children, out of the efforts excreted the children were average overall development.

Finally, there is significant difference as to civil status, educational attainment, length of service and eligibility, and there is no significant difference as to age and gender of the teacher respondents. There is no significant relationship on the teacher's performance to pupils learning ability for pupils has its learning style and abilities and the pupils' achievement has its significant difference on teacher performance. It is recommended that Kindergarten teacher must augment their educational qualification and pursue their graduate studies and must develop the total personality of the children for them to achieve high advanced development to become productive individual.

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Trusting for Authentic Friendships in the Perceptive World of Everybody Lies Online

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Abstract

With the technological advancement of communication, especially the internet, more and more people no longer live life in a set of relatively fixed settings but rather they live through online societies. In online venues, it is easier for individuals to have power to manage their relationships, making it freer and expanding possibilities. As such, an online social communities, interpersonal beliefs and relationships are being created and reshaped in a wide variety of ways. This qualitative online study offers insights into the ways in which a group of internet users who do not believe in romantic love online by claiming the social construction of "everybody lies online" paradoxically have faith in online friendships. The argument of this research is that, if friendship choice is, in fact, highly socially available through the use of online social media, then this suggests that authentic friendships could be formed as a result of this powerful tool.



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Introduction

Almost everyone experiences the desire for friendship. Individuals need people whom they can respect, admire, value and interact with in a variety of ways and on various levels. Almost everyone sometimes has the desire for someone to talk to, to be with, to feel understood by, to share an experience with. Friendship reflects the desire for social interaction with another human being. Giddens (1990) sees relationships as "ties based upon trust, where trust is not pre-given but worked upon, and where the work involved means a mutual process of self-disclosure" (p. 121). He emphasises the need to establish trust among individuals and observes that the alternative to trust is "inaction", which in itself may be "risky" because if people do not take the risk of interacting, they will not develop a supportive friendship network (Giddens, 1990 p. 32).

Today, the internet became a major vehicle for social interactions. It has allowed people to communicate with others through a growing variety of applications. From the beginning enthusiasts viewed this computer technology as a new method for enhancing social networks (Rheingold, 1994). Many people use internet for socialising and making friends. It has been suggested that social relations, including friendships, disclosure and intimacy play an increasing part in the lives of individuals (Jamieson, 1997).

However, a number of news items featuring "everybody lies online" have appeared in the media. The media suggest lying is a typical occurrence in everyday online life and so support public perceptions about the higher incidence of deception online. Previous studies (Anderson, 2005; S.M. Wildermuth, 2001; Susan M. Wildermuth, 2004) have suggested that media, specifically news media, might have much to do with people's apprehension about forming online relationships. This is due in part to the overemphasis in the popular press of the dangers of meeting people over the internet. Although previous studies confirm the idea that news media portray online relationships in a negative way, there are various studies have found that exposure to media such as news stories about online deception was not related to people's beliefs, attitudes, social norms or intentions to form online relationships.

This research study, therefore, aims to explore how online friendships are enacted through a socially mediated set of beliefs and practices by looking at why internet users form and create online friendships and how the concept of online deception is reshaped through the use of online social media.

Literature Review

Internet Use for Making Friends

The internet promises to be a real alternative medium to meet people, make friends, or meet romantic partners. It provides new forms of social interaction and interpersonal relationships that are initiated and can be maintained exclusively online or, alternatively, transferred to real life. Early enthusiasts viewed this computer technology as a new method for enhancing social networks via the creation of "virtual communities" (Rheingold, 1994). Scholars have recently started to analyse the role of the internet in supporting the establishment of new relationships both online and offline. In particular, it has been argued that the possibility of forming new social relationships highlights the power of the internet to construct people's social networks

in meaningful ways by allowing internet users to meet new people and make friends who they would not otherwise have come into contact with (Gennaro & Dutton, 2007; Henderson & Gilding, 2004; Katz & Aspden, 1997; Parks & Floyd, 1996).

There is ample evidence that people form online friendships and that these function as a social network of emotional support when it is needed. Knox, et al.'s (2001) study revealed that the primary goal of using the internet among college students was meeting new people and making new friends and over 60 percent of these participants were successful in establishing an online friendship. Gennaro and Dutton's (2007) finding indicated that about 20 percent of internet users have met new friends online, and about half of these individuals go on to meet one or more of these online friends in person. Chou and Peng (2007) found most of their Taiwanese adolescent samples had "net-friends" and felt they could be fairly open and honest with these friends. These adolescents had positive attitudes in respect to the formation of online friendships. The perceived benefits of having a net-friend included a greater chance of self-disclosure and self-promotion, escape from life's pressures (for example, homework, parental, school), more opportunities to experiment with their "ideal self" and having fun (Chou & Peng, 2007).

A number of research studies have revealed a relationship between loneliness and internet use. Coget, et al's (2002) results suggested that internet use is associated with a slightly decreased level of loneliness. However, people who have online friends are more likely to describe themselves as lonely than those who do not. The results of Shaw and Gant's (2002) study on internet users of chat rooms indicated that internet use tended to decrease loneliness and depression significantly, while perceived social support and self-esteem increased significantly. Morahan-Martin and Schumacher (2003) found lonely people preferred online social interactions to face-to-face interactions. Users felt online interactions were less threatening and more rewarding than face-to-face interactions. Matanda, et al. (2004) explored issues of computer anxiety, loneliness and internet use and found better-educated participants were more likely to use the internet for communication. Men, the young, and the lonely used the internet more for entertainment. Whitty and McLaughlin (2007) found lonely people were more likely to use the internet compared to less lonely individuals for social activities, such as playing games and participating in chat rooms. The results of Ando and Sakamoto's study (In press) on loneliness and online relationships indicate their Japanese samples were more likely to feel less lonely and socially anxious as a consequence of making online friendships. These studies support my argument that Thai internet daters use the internet for meeting new people and making new friends, and that loneliness and the need for emotional support are two of many reasons that motivate them to enter into internet dating.

Online Deception

While some modes of internet use encourage fantasy identities that are seen as positive by others (for example, role playing games), fantasy identities on internet dating sites are seen by others as "deception". In looking for true love, strict limits are put on self-presentation, especially on physical looks and wealth.

Online contexts offer individuals an extended ability to manage their self-presentation or their identity, and therefore greater opportunities to engage in misrepresentation or deception (Cornwell & Lundgren, 2001). Concerns about the possibility of online deception thus are commonly addressed (Edgerton, 2004; Klein, 2007; Sawadisevee, 2002) and it is a key term to describe experiences online. However, the different ways

in which this deception takes place and the different reasons for its use need to be sorted out. First, there is the deception Turkle (1995) refers to as "playful". She argues that the internet gives its users more freedom to explore "playful, fantastical online personae" that differ from their "real life" identities. Yet, it is common for many people to express concern about lying and deception occurring online. Knox, et al.'s (2001) study revealed deception on the internet was rampant. Forty percent of their participants reported having lied on the internet. Second, there is the deception Whitty (2002) found to be a result of safety concerns. Women and younger people (aged 17 to 20) in her study tended to lie about features the revealation of which could potentially threaten their anonymity. Third, online deception can be determined by the need for sex, power and love. In one Thai chat room study, Sawadisevee's (2002) participants revealed that they use the online community to express their hidden selves, that is, emotions and feelings that they suppress in the real world because of social norms and rules. The results of this study also indicated that the internet environment facilitates deception as a result of its features of reduced sensation, a disinhibition effect and flexible identity. Lastly, Klein's (2007) study has suggested deception might be motivated by the desire for intimacy and enjoyment of online interactions, and could inadvertently occur through omission or distortion.

In an internet dating study by Brym and Lenton (2001), deception is reported as the "main perceived disadvantage of online dating" (p. 3) and participants see it as commonplace. Over a quarter of their participants reported misrepresenting some aspect of their identity, most commonly age, marital status and appearance. There were almost no differences between the genders in their propensity to misrepresent themselves. A survey of one internet dating site reported 86 percent of their participants felt others misrepresented their physical appearance by making it more flattering (Gibbs, Ellison, & Heino, 2006). Perceptions that others are lying may encourage reciprocal deception, because internet users will exaggerate to the extent that they feel others are deceiving them (Fiore & Donath, 2004). Further, Cornwell and Lundgren (2001) found that individuals involved in online romantic relationships were more likely to engage in online deception than those involved in real life relationships, but this was directly associated with the level of relationships were more likely to engage in deception.

Regarding gender differences in online deception, McCown, et al. (2001) found men lied more than women. In their sample, over 75 percent of men lied and a little less than half of the woman participants lied. Whitty's (2008) study revealed male internet daters were more likely to misrepresent their height and their relationship status than women. However, in Knox, et al.'s (2001) investigation, women were slightly more deceitful than men (43 percent to 35 percent). Their age and physical characteristics were the most commonly reported misrepresentations.

Although much of the public discussion about internet dating has centred on the medium's inability to ensure participants' truthful self-representations, the study of Ellison, et al. (2006) and Whitty (2008) have suggested that the notion that people frequently, explicitly, and intentionally "lie" online is simplistic and inaccurate. Their internet dating participants claimed that they attempted to present an accurate self-representation online to avoid unpleasant surprises in subsequent face-to-face meetings. However, the results of these studies highlight the fact that creating an

accurate online representation of self in this context is a complex and evolving process in which participants attempt to attract desirable partners. As such, people on internet dating sites tended to "stretch the truth a bit" in their online self-representation (Yurchisin, Watchravesringkan, & McCabe, 2005 p. 742). Therefore, some misrepresentation or deception may be unintentional. For example, in the study by Padgett (2007) the online photographs that some men used were 5 to 10 years old or unusually flattering photographs in order to attract more women.

Participants in Whitty's (2008) study stressed the importance of crafting an attractive profile and described this as a process of "selling themselves" (p. 1714). Participants typically elected to have a photograph (many selecting the most flattering photograph they could find), some even going as far as having a glamour shot. Furthermore, about half of her sample did admit to misrepresenting themselves on their profiles. They admitted to lying about their looks, their current relationships, age, weight, socioeconomic status, and interests. The most common way that individuals misrepresented themselves was related to their physical appearance. Noticeably, internet daters do not de-emphasise physical attractiveness as an important quality. They did not misrepresent their appearance for malicious reasons, but rather as a way to attract others. Despite admissions of their own exaggerations in their profiles, the participants in this study were often outraged to find that when they met face to face their online partners had misrepresented themselves in their profiles as well (Monica T. Whitty, 2008).

The importance placed on physical attractiveness may be greater for internet daters than for individuals developing relationships in other places online. As the results of Rosen, et al. (In press) have indicated, internet daters and traditional daters differed on what characteristics they found important in a potential date. While traditional daters found personal information, personality, and education more important, internet daters keyed in on communication style and physical attractiveness. Perhaps internet daters misrepresent themselves or undertake deception in order to attract others in a medium where first impressions are important (Rosen, et al., In press).

Walther (1996) introduced a theory he called the Hyperpersonal Perspective in which he suggests internet users make over-attributions about their online partners. His theory is that when people expect future interactions with a person they infer a perceived similarity to themselves by "filling in the blanks" in desirable ways. Then, the "reciprocal influences" of this "idealised perception" and "selective presentation" creates "self-confirming prophecies" (p. 28), which lead to more intimacy. The Hyperpersonal Perspective predicts that once two people meet, physical attractiveness is important due to those involved having already projected positive impressions based on the written word and perhaps on one or more photographs (Walther, 1996).

Methodology

This research study employs online qualitative survey with a sample of participants who have used the most popular and most widely used of the online social services in Thailand, thaimate.sanook.com. By using the online questionnaire, qualitative data was obtained via open-ended questions that invited individual accounts of experiences. The qualitative collected data was entered into the NVivo 7.0 software data management program and coded. After an exhaustive coding process, themes emerged from the data. Data reduction was achieved by collapsing thematic concepts into emergent categories relevant to the research.

There were 237 females (51.5%) and 223 males (48.5%) who participated in this study. The ages of the largest number of participants (80.2%) ranged from less than 25 years old to 35 years old. With regard to marital status, 69 percent of participants identified as single. The majority of participants indicated they had completed a bachelor degree (68.9%) and more than half of the participants (56%) lived in Bangkok or surrounding suburbs. Almost all participants (93%) identified their religion as Buddhism.

Results and Discussions

Why We Need Friends Everywhere

In this study, the majority of participants (45.1%) who have not had online romantic relationships reported that they use online social media to make new friends. Both men and women state they use the website for friendships. Of these, some were clear that their intentions were to look for friends only, not to find romantic partners. As this participant states:

Nothing serious. On the internet, we mostly speak about things in general. It is for making friends rather than searching for a date or a love partner. (Participant 452)

These comments are typical of the group who are friendship seekers. In using the site particularly to make friends, 34.6 percent of participants who have not had online romantic relationships said they continue to seek online friends. As this woman indicates:

I already have someone I love. I do online chat just for friendship. Online friends can help each other through chatting even though we don't know how they look. (Participant 380)

In this case participant 380 makes it clear that she already has a "love partner" and that the website is a place to make friends, who "help" or "support" each other.

In seeking friends, some of participants said they used the site to relieve loneliness and boredom. This is consistent with the results from previous studies that indicate the internet is linked to a desire to reduce loneliness (Coget, et al., 2002; Morahan-Martin & Schumacher, 2003; Shaw & Gant, 2002). Lonelier people used the internet for entertainment (Matanda, et al., 2004; Monica T. Whitty & McLaughlin, 2007) or to communicate with others. The next three participants describe how they use the website to escape from loneliness. They suggest the website provides them with opportunities to communicate and to meet new people:

...well it's just for a fun chit chat and joking around. Sometimes I can get some support when I'm feeling down. And it's good to have someone to talk to (I'm single) when I'm lonely or burned out from work. (Participant 961)

At one point, I look around and all my friends are married and have their own family. Suddenly I felt really lonely that I started to reach out. Internet, once a part of my work, has become a gateway to get me out of loneliness. (Participant 643)

I've been a widow for two years now. I feel so lonely and have plenty of free time and I found the internet is a place I talk with people and make friends. (Participant 992) In these responses, the participants make a link between their single status and loneliness. Participants 961 and 643 add that their long work days are connected to the need for friends. Increased pressure from work makes it more difficult to find the time to engage in conventional dating methods. People are looking for more efficient ways of meeting. Internet dating has emerged as a credible alternative. The last participant (992) links her loneliness to being a widow. Implicit in these three comments is the suggestion that loneliness would not be so acute if they were in a relationship.

Alternatively, as lonely people may have poorer communication skills, they may choose to use the internet in order to relieve their loneliness and to improve their communication skills. As participant 797 says:

I got a chance to meet new people and learn how to get along with people from different walks of life. I have improved my communication skills with friends who have different ages and locations. It also helps when I feel lonely and I have more friends. (Participant 797)

There are some differences between men and women in the reasons they give for making friends to relieve loneliness and boredom. Men tend to adopt a playful approach in getting to know new people, involving an enjoyment of sociability "for its own sake" or the flirtatious elements of interaction. The desire to establish serious relationships appears to be out of their minds as shown in these two participants' statements:

Come on! It's just a game to kill my free time! Why do we have to take it seriously? (Participant 1196)

Interacting with women on the internet is just for friendship. Online friends are there for me when I feel lonely and bored. They can share some knowledge about things. Yet, I don't believe I can find my soulmate there. Really, it's just for fun. I don't ever wish to find a true love or get married to anyone here. (Participant 749)

For women, on the other hand, the reasons they used the site playfully were different and came from their experiences in talking with men. Participant 516 did not believe that men told the truth:

I've been using this dating website for 5 to 6 years now. There are a lot of flings and flirting but no serious relationship. I don't trust what they say. (Well ... I never lied here but they still don't trust I tell the truth anyway.) So, I don't take it too seriously, just for fun when I feel bored. (Participant 516)

Participant 863 thought that the motivations of many men for using the site was to flirt.

The reason I use thaimate is to make new friends. Most of the guys here are married. (I am not a young girl.) They are about 36 and older. They just want to have chat friends when they feel lonely but they would be thrilled if any girl would want more than just a friendship. (Participant 863) These responses suggest many participants use internet for pursuing friendship. Reasons vary depending upon their marital status. Committed participants use it for making friends, arguing that friendship is distinct from romantic relationships. Single participants use the website to reduce loneliness and boredom as well as to improve their communication skills.

Authentic Online Friendships

Internet participants who believe they cannot find online true love as a consequence of the "everybody lies online" perception paradoxically believe they can trust someone they call an "online friend". This could be explained by the argument that friendship is something distinctive and apart from the values, expectations, and responsibilities that define romantic relationships (Budgeon, 2006). The following narratives from my participants confirm these points:

You can't judge a book by its cover. It's hard to trust people you met on the internet. But it's not impossible to meet a decent person here. Anyway I think it's difficult to find love here. Well, but friendship can always continue. We still talk and catch up now. (Participant 857)

This means that internet participants consider online friendships are less risky and can be trusted more than online romantic relationships, even though they perceive it is difficult to trust people online. The reasons they have for having trust could be the motivation for developing friendships outside their real-life networks. As career and time pressures are increasing, people are looking for more efficient means of meeting other people for social relationships. Participant 984 notes his life and work conditions led him to make friends on a dating site:

I haven't met anyone special for love on the internet yet. People I have been talking to here are just like friends. Personally, I use the internet to contact people. It also gives me more opportunity to get to know a lot of people out there. Nowadays I have a busy lifestyle that makes it hard to interact with people. Those people who I meet on a trip or at places, it's not easy to talk to them and getting to know them because we are strangers. I don't know if they also want to open up and have a conversation or not. But in an internet world, everyone is willing to open up so I can determine who wants to just chat, find friends or lovers. This makes it easy for me to make an approach. (Participant 984)

Internet sites make clear that their purpose is to be a meeting place for persons who desire social relations. It has been argued that because social forms have become more fluid, friendships are becoming more important and central to people's lives as a source of continuity. Pahl (2000) states "sometimes the only continuity for increasingly reflexive people is provided by their friends" and that because so many aspects of one's life may be transitory (jobs, marriages) "men and women may come to rely on their friends to provide support and confirmation of their enduring identities" (p. 69). The results of my study affirm this view. In making friends on the internet site, many participants have found good companions. Participant 778 says:

My relationships on the internet are only about friendships. Give each other support through a rough time. I am lucky that I have received good feelings from friends here and it will be in my memory forever. (Participant 778)

Internet friends support each other in personal life. Internet daters are found to typically have positive experiences in their relationships that are similar to what real life daters have (Rosen, et al., In press). Friendships formed on the internet can last as long as friendships formed in real life such as in school or university, as participant 984 says:

Most people I talk to on the net are good friends. The longest friendship I have here is seven years. And we will be good friends forever more. (Participant 984)

There is not only support in personal life, but sometimes people can gain more constructive knowledge for their work from friends met on the internet, as another participant says:

... I have known various kinds of people. We talk and exchange our opinions. We learn each others' work. Sometimes we support each other when one feels down and we have concern for each other with the status of a good friend. (Participant 81)

The stories above show the connections that bind participants 984 and 81 to other members of thaimate.sanook.com, reaching across various facets of the participants' lives.

Conclusion

Friendship, as a "prototype of social relations", tends to reflect individual choice. This qualitative online study offers insights into the ways in which a group of internet users who do not believe in romantic love online by claiming the social construction of "everybody lies online" paradoxically have faith in online friendships. This means that internet users consider online friendships are less risky and can be trusted more than online romantic relationships, even though they perceive it is difficult to trust people online. Therefore, if friendship choice is, in fact, highly socially available through the use of online social media, then this suggests that authentic friendships could be formed as a result of this powerful tool, which offers more free and individual choice. Since people are obviously interested in forming relationships with men and women whose values and characters are, in important respects, like their own, they normally develop feelings of benevolence or affection toward people who act in ways that are beneficial to their existence.

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Exploring Emerging Trends in Information Seeking Strategies for Discovery Learning

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Abstract

The ubiquitous information and communication technologies and internet are a worldwide phenomenon that has revolutionised people's lives and has reshaped a way which students access and obtain information to assist their learning in the twenty-first century. One significant facet of transformation is the internet has been gradually becoming an only information resource in learning. For locating required information, students in all levels of education generally utilise web search engine services as the primary gateway to information landscape. This research study developed the Virtual Environment for Internet Searching (VEIS), an online usage capturing technique to investigate the strategies used by Master degree students during their information seeking tasks. The results in this study suggest the information searching on the internet is not effortless and search strategies developed by the students are essentially arbitrary. It appears that in the end, it all decides to the students themselves and the uses they make of the technologies. They evidently do searching on the internet in ways that web search engine designers and information seeking researchers have not contemplated or imagined, as yet.

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Introduction

The ubiquitous information and communication technologies and internet are a worldwide phenomenon that has revolutionised people's lives and has reshaped a way which students access and obtain information to assist their learning in the twenty-first century. Communities in today century are made up of global information societies and the internet is an integral part of this. One significant facet of transformation is the internet has been gradually becoming an only information resource in learning. For locating required information, students in all levels of education generally utilise web search engine services as the primary gateway to information landscape.

It is clear that research cultures are rapidly changing and students now perform much of their learning time online seeking for information and will increasingly rely on the internet when searching for information in the future. Online searching is a learning process with unique seeking characteristics specific to particular learning levels (Jansen, Booth, & Smith, 2009; Marchionini, 2006). There is much academic discussion about the form of this new approach and scholars have various ideas about results of these changes. On the pessimistic side:

In a fast food, fast data environment, the web transforms into an information drive-through. It encourages a 'type in-download-cut-paste-submit' educational culture (Brabazon, 2007 p. 22).

A number of studies have been undertaken exploring student online searching. Students are reported to regularly use electronic information technology (Barrett, 2005) and rely heavily on popular search engines, such as Google Search to find what they desire. Brophy et al. (2004) undertook a user testing study where University students were set 15 online information seeking tasks, but given no guidance on how to go about finding answers. They reported that the majority of students went first to a search engine to help them find the information they needed. In fact, over 70 percent of their student samples regularly turned to search engines first to help them find information. The Online Computer Library Centre (2002) reported that 79 percent of students use search engines for all or most assignments, 50 percent use web portals and 40 percent use course specific websites. Griffith (2002) reports that the majority of his student sample used a search engine (Google) as their "first port of call" when locating information. An extensive review of the relevant literature by Rowley and Urquhart (2007) indicated that there are gaps in the evidence concerning the browsing and selection strategies of students and the interaction of some of the mediating influences on information seeking behaviour.

Although the previous work can be helpful in understanding the overall direction of students' online information seeking, there is limited and uneven work in articulating various life aspects of this phenomenon. To my knowledge, no prior work exists that provides insights into the specific searching practices underlying the culture of online searching and students' lives. Further, much of the prior work on online searching has focused on searchings behaviour, such as the searching process and decision making. Although this can shed light on important aspects of internet research, these approaches focused only on the explicit elements and missed the knowledge embedded in these fields, those that are not mentioned explicitly. As such, open questions remain.

This research study, therefore, aims to explore what are the students' information seeking strategies that exist alongside and affect the more specific processes of the students' educational lives. The research questions, data collection methods and focus mean that this study will be able to present new knowledge providing a greater attention to detail and so enable us to move beyond the broad pictures set out in earlier works.

Literature Review

A number of theoretical models that describe information seeking behaviour have been developed by researchers in various disciplines. Saracevic's (1996) stratified interaction model posits a three level structure: surface, cognitive and situational. At the surface level, a user interacts with a system through an interface by issuing commands or queries that represent, in some way, a problem statement. At the same level, the system responds either with meta-information, or texts (including images, etc.) or with queries of its own designed to elicit from the user further information on the nature of the problem. At the cognitive level, the user interacts with the output of the system, or with texts obtained subsequent to system interaction, in ways that enable the user to assess the utility of the text in relation to the initial problem. At the situational level, users interact with the given situation or problem-at-hand which produced the information need and resulting question. The results of the search may be applied to the resolution or partial resolution of the problem.

Kuhlthau (2004) takes a more holistic approach to explaining information seeking and includes affective considerations in the information search process model. Influenced by Kelly's (1963) theory of personality, she views searching as a constructive process that works on three levels: the affective, cognitive and physical. From her research, Kuhlthau observed a "dip" in user confidence after a search has begun. This contradicts the assumption made by other researchers that confidence steadily increases from the beginning of a search to its end. A seeker "in the dip" can "experience uncertainty", "confusion", and "anxiety" until a focus is formed or a search is broken off (p. 166).

Kuhlthau's model is important because it addresses the information seeker as an active participant in the information search process. She identifies the complex cognitive processes, such as brain storming, contemplating, predicting, consulting, reading, choosing, identifying, defining, and confirming, that are involved in information seeking behaviours. Kuhlthau's (2004) information search model includes six stages: (1) task initiation; (2) topic selection; (3) pre-focus exploration; (4) focus formulation; (5) information collection; and (6) search closure. As an example, the Initiation phase of the process is said to be characterised by feelings of uncertainty, vague and general thoughts about the problem area, and is associated with seeking background information. The appropriate task at this point is simply to recognise a need for information. The remaining appropriate tasks are: to Identify, that is, to fix the general topic of the search; to Investigate, or search for information on that general topic; to Formulate, or to focus on a more specific area within the topic; Collection, that is, to gather relevant information on the specific topic; and to Complete, end the information search. Her model encapsulates the reiterative nature of information seeking and identifies how students explore the various avenues open to them on their information seeking journey. Her findings suggest that searchers experience all six stages as they complete a search for information.

The series of studies by Amanda Spink provide a model accounting for the nature and role of feedback during the searching processes. Derived from empirical research, her model identifies user judgements, search tactics or moves, interactive feedback loops, and cycles as all constituting the search process of a person in interaction with an information retrieval system. Her model provides a useful framework for describing interaction between students and their online searching process. Spink's model of web searching suggests the iteration of the online searching behaviour from an initial search strategy up to the extraction of a relevant document set. Each step consists of a particular online searching strategy followed by extraction and verification of the document set. After each step, the searcher has three choices: the first choice is to complete the searching process with the set of retrieved relevant document collection from the internet, the second choice is to initiate the next cycle with the same search strategy applied, and the third choice is to initiate the next cycle with a different search strategy. Both the second and third choices are determined by the online searcher verification and the relevance of the feedback (Jansena, Spink, & Saracevic, 2000; Spink, 1997; Spink, 2002; Spink & Jansen, 2004; Spink & Saracevic, 1997; Spink, Wolfram, Jansen, & Saracevic, 2001).

Methodology

This research study examined the learning practices of Thai workers/postgraduate students over a 12-week period situating their discovery of knowledge in the context of their information seeking on the internet. Employing this study, the researcher first did the face-to-face focus group interviews. The purpose of the focus group interviews employed in this study was to collect basic information on the students' methods of gathering materials to complete their academic assignments. Topics discussed included students' strategies for finding information, common methods used to locate and select online materials, as well as their internet searching skills. In addition, the interview sessions were used to introduce the website for data collection and to establish a connection with the students before the online collection process of this research began.

Further, the researcher developed a Virtual Environment for Internet Searching (VEIS), an online usage capturing technique to collect data by mixing quantitative and qualitative approaches. The VEIS was a technique of combining a modified Hypertext Transfer Protocol (HTTP) proxy with screen capturing, automated online monitor with a live-support system as well as live chatting and self-reporting modules to supplement the traditional web-logging data.

Twenty-one participants were drawn from a cohort of Masters Degree students enrolled in the Interior Design Management Program at Bangkok University, Thailand. The students ranged in age from 24 to 38 years old, with an average age of 30 years old. Twenty worked as a full-time employee; six of those were running their own businesses. There was a degree of homogeneity in the sense that they shared similarly high grades in their previous degrees. They had done relatively well in their bachelor degrees, with a 3.56 grade point average (GPA) for the group. All the participants used the internet on a daily basis. They claimed that they were experienced internet users who had access to the internet either from their offices or homes.

Results and Discussions

Both searching and browsing are two common methods of exploring the internet. While both methods are used regularly, because of the expanse of the internet both can be awkward and time consuming. In this section, I argue online searching is not effortless. In fact, it is costly in terms of time required. The investment of significant amounts of time and the overwhelming choice of sites – leading to information overload – were mentioned by the students as issues they usually face before selecting the content. The students feel drained of energy after investing their time to do the online search carefully and then trying to make a decision about what to select from the large number of websites.

Even if students invest time before selecting the websites and the content, they inevitably encounter many irrelevant websites. Some student spend time carefully looking through the websites Google shows, yet many of the selected websites do not match what they needs.

Click, Wait and See

Sometime the process of online searching is complicated and this investment of time in reading seems to be linked to issues of slow connection. This combination of slow connections and careful sorting through websites creates the online searching model of "Click, Wait and See".

In this study, 59 percent of search sessions (49 out of 83 sessions) lasted between 10 to 50 minutes. There are 13 search sessions (16%) where the students spend more than one and a half hours for their search (see Figure 1).



Figure 1: Number of search sessions and amount of time that the students spent on the sessions.

A Low Hanging Fruit

Judgements made by students must be based upon prior the experience they have gained in the overall activity of online searching and tactics may well be derived from a strategy that has proved to be useful. Given the limits on how much time they can invest, some students use a strategy of bookmarking the websites they consider might be useful so that they can explore the contents later. This approach leads to what is sometimes referred to a "low hanging fruit" approach (Carlson, 2004 p. 33) – choosing those parts of the results which can be accessed or viewed immediately and without difficulty. In this case, students make bookmarks regardless of whether they have explored the content of those websites in great detail. Subsequently, this approach could lead to a phenomenon as "getting lost"; a feeling that the internet is a maze in which you can get lost if you stray too far.

A Side Tracking

Finding the unexpected interesting topic also tells us about what I call the "getting sidetracked" phenomenon. It is interesting that in the context of study this "side tracking" is a problem for the students, whereas in terms of expanding one's knowledge it is exciting. I argue, this situation comes about because the students are constrained in what they can follow or get to know by time limits imposed by needing to finish set assignments.

Information Foraging

The result of this research also reveals the whole phenomenon of too much information. Students collect (too) much information, and then never read it all. This could be explained by Pirolli's (2007) information foraging theory. According to this searching theory, like animals foraging for food with time and energy constraints, humans forage for information or look for answers. Given the abundance of information foraging states that the students adopt adaptive strategies that optimise the intake of useful information per unit cost. The information foraging theory also illustrates the application of the Principle of Least Effort (Zipf, 1949), as the students take actions that get the information they want or think they need with the expenditure of the least cost.

Collecting, Not Reading Thoroughly

Many students say they are just saving, downloading or printing the materials they find. This indicates that sometimes when the information is interesting the students actively engage as they undertake their searches. Yet, most of the time they are just collecting, not reading thoroughly. The data on the accumulated time for all search sessions shows that the students spent 65 percent of this time visiting websites (collecting information) and 35 percent of it searching on Google (see Figure 2)



Figure 2: Breakdown of time spent on different activities in all search sessions (%). However, there is a danger in this method of collecting to do with a lack of close reading. As some students point out sometimes these collected materials are not read in more detail, as the student is not interested anymore. This case demonstrates that searching is a distinct process different from reading/analysing which requires concentration. Thus, what does this mean for how students are learning. On the internet, they rely upon their own knowledge, which is limited because they are students, so the questions is what does this means for how much and how comprehensively students can expand their knowledge?.

Get to Know Website Styles and Contents

Despite information overload and irrelevant information, decisions about the level of investment of time and the choice of sites are also related to the issue of the style and content of the websites. As different websites have different styles and contents, students have to invest their time in getting to know and learn the characteristics of the particular websites they wish to explore. This is because of the differences among the websites – they are designed inconsistently, and each organised the content differently.

Conclusion

The web search engine is a marvellous new technology. The fact that this study found is an indication of how the students do online research for discovery learning. Students have always been unpredictable in how they will do their research. The argument in this study is that information searching on the internet is not effortless and seeking strategies developed by the students are essentially arbitrary. It appears that in the end, it all decides to the students themselves and the uses they make of the technologies. They evidently do searching on the internet in ways that web search engine designers and information seeking researchers have not contemplated or imagined, as yet.

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Rural Livelihood Survey on Selected Barangays in Urdaneta City, Pangasinan

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Abstract

This study surveyed the rural livelihood of selected barangay in Urdaneta City. It sought to answer the questions on the household profile of the family members; type of house structure materials, equipment, farm materials, livestock and vegetable gardens of the respondents; status of the farmland and irrigation system in selected barangays; existing health condition of the household-members and health services provided; and action plan can be proposed in enhancing the livelihood status of household members. Descriptive method was used to derive the respondents' profile. Concluded that, the age of couples distribution is characterized as middle adulthood. Age distribution of children is characterized as school-age stage. The occupations of the head of the families are generally service providers. Spouses are doing vocational work. Parents and their children are high school graduates who have finished their basic education, they are capable of reading, writing, and perform arithmetic. Household-respondents have no alternative source of income besides their main occupation due to absence of skills to do the work and other jobs that require skilled training. The house of the community members are made of softwood, few of them uses bicycle, motorbikes and appliances. Those who are engaged in farming don't own tools and machines in cultivating their farmlands. Some are engaged in agriculture. Majority of the farmers served as tenants and lease as contracted from the landowners. They do not have irrigation system. Immunization is needed for the children. Delivery of health services to be provided to the community is wanting.

Author Note

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The International Academic Forum www.iafor.org Overcoming current knowledge gaps in the rural areas requires moving beyond the current primarily case study-based state of knowledge on the importance of natural resources to overall livelihoods strategies.

Rural households throughout the developing countries use food, fuel, fodder, construction materials, medicines, and other products from agricultural, natural, and non-cultivated environments in order to meet subsistence needs to generate cash income (Byron and Arnold, 1999, FAO, 2008, Kaimowitz, 2003, Sunderlin et al., 2005 and World Bank, 2004). Quantifying the relative and absolute contributions of environmental income to total income portfolios is important for understanding the livelihoods of rural people.

The focus in the resolution of the poverty alleviation are the extent and the determinants of poverty and inequality, the welfare implications of the degradation of natural resources, and for designing effective development and conservation strategies (Angelsen and Wunder, 2003, Jagger et al., 2012, Oksanen and Mersmann, 2003 and Vedeld et al., 2004).

Poverty among Filipino people is stereotypical issue, even though the past administrations proposed and implemented actions in alleviating the problem. Lack of coordination in the full implementation and consistent action in promoting areas also remain as one of the concern.

The City of Urdaneta is not exempted on the poverty effects as one major problem in the vicinity particularly in the unequal distributions of its agricultural lands which affects the income generation of marginal farmers. The Office of the City Agriculturist claimed that approximately number 8,750 hectares or 72.3% of the locality's land area, of these, 6,002 hectares are irrigated rice land, 537 hectares rain fed lowland, and 87 hectares rain fed upland, or a total of 6, 626 hectares planted with rice. Likewise, 125 hectares are devoted to corn; 27 hectares legume; 320 hectares fruits and vegetables; 2 hectares root vegetables; 3 hectares tobacco; 5 hectares cotton; and 274 hectares fruits (mango and calamansi). Over all, with only 7, 382 hectares devoted to agricultural products and 10.3 hectares utilized as fishponds, 1, 357.7 hectares are underutilized or unproductive. The same source reported that 395 hectares are grassland/pastureland presumably used for raising livestock.

Residents in non-irrigated barangays' main occupation is farming are totally dependent in rain water during rainy season that usually starts from May to August. On the midst of October, farmers are ready to harvest their crops only happens once a year. The land remains idle particularly on November up to April while counterparts in irrigated areas have two (2) cropping.

There are total of 35 barangay in Urdaneta City, Pangasinan, some of which are nonirrigated. Some of these are barangays were Oltama, Sugcong and Cabaruan that produces common crops like rice, corn, mongo beans and other vegetables. Most of the residents are hired by the landowners or tenants as farm workers. Its land topography is composed of rolling hills and wide pasture lands located at the remote south-western part of the city adjacent boundary to the neighboring town of Villasis, Pangasinan. These rolling hills provide a panoramic view of surrounding terrains and the whole community. The wide pasture lands and rice fields have given way to farmers as the main source of livelihood.

The main concern of the study is to determine the profile of these three barangays using the livelihood system approach (LSA) to support planning and monitoring at the local level. As resources become scarce, there is a need for information to be planned and implemented for interventions through efficient or better targeting of the rural livelihood. Once the livelihood systems and their vulnerable groups are identified and profiled, the design indicators for regular monitoring will allow stakeholders to continuously assess the poverty as to basic needs and security will improve rural development.

Social Problems in the Philippines explains poverty in three sociological perspectives namely symbolic interactionism, structural-functionalism, and conflict theory. The structural-functionalist view poverty as a consequence of a just economic system in which those who perform the least useful task are rewarded the least. It is unnoticeable for people to be given the same remuneration on giving different inputs since they vary in exertion of intellect, competence, skills, and efforts. The improvement of their capabilities will be a factor of the change on their living condition (Garcia 1994). The symbolic interactionism expect poverty to occur because not all are highly communicative, the theories attribute it to the daily living activities. Based on the conflict theory, poverty occurrence is attributed to the existence of class division. The existence of poverty is social stratification that is dominant group sets, making the poor ones struggle just to cope up their needs. Everybody desires to have better life even poor families.

Therefore, social change is most likely to occur when it is addressed through comprehensive, multi-sectoral efforts. The employment income, training, education, financial assets, housing, and other needs are the foundation in the sustained poverty reduction.



Figure 1

Figure 2

Figure 1 shows that 33.33% of the family head ages from 40 to 49 years of age while only 9% ages from 20 to 29 years old. 14.67% of spouse's age is 20 to 29 years old while 13.33% age from 50 to 59 years old.



Age of Children

In Figure number 3, 44% head of the family and 50.67% of the spouse respondents' graduate in high school as highest educational attainment. 1.33% of the respondents' both head and spouse did not have formal education due to financial issues.

Figure 4



Figure number 4 shows that 53.33% head of the family respondents' occupation is service providers such as security guard, driver and factory worker while 73.33% of their spouses are housekeepers. On the other hand, 1.33% of the head of the family and 6.67% of spouse are vendors.





In Figure number 5, 60% of the respondents' do not own transportation instead, they commute to go to different places. On the other hand, 2.67% owns' tricycle that serves assistance in their occupation, several leisure other outside activities.

Figure 6



Figure 6 shows that 66.67% of the respondents' use wood as material for their house because it is cheaper compare to bricks. While 1.33% use sacks or recycled materials as artificial wall. 32% of the respondents' use reinforced concrete since it is long lasting.

Figure 7


Figure 7 shows 65.33% of the respondents are not into farming rather render services like carpentering and vendors as source of income while 16% rent land for agriculture. For the farmer respondents, 12% of them pay percentage of their harvested crops to landlord while 4% pays cash. In terms of irrigation system, 73.33% opt not to response while 24% do not have irrigation system and mentioned they wait for the rain to occur. 65.33% of the respondents are not into farming rather render services like carpentering and vendors as source of income while 16% rent land for agriculture. For the farmer respondents, 12% of them pay percentage of their harvested crops to landlord while 4% pays cash. In terms of irrigation system, 73.33% opt not to response while 24% do not have irrigation system and mentioned they wait for the rain to occur.



Figure 9 shows that 32% of the respondents' plant mango as permanent crops whereas santol, atis and sineguelas have the least a percentage of 1.33. The crops are usually for personal consumption and found at their backyards or farm. It is under a program named "Tulungan sa Purok" with an objective maintain backyard garden as supplement of daily consumption.





Figure 10 shows, 22.67% of the respondents' plant rice and ampalaya as source of income. Rice is commonly planted during wet/rainy season because irrigation system or pump station is an option to water the plant. Tomatoes and kabatete have the least choice 1.33%.

Figure 11



In Figure 11, 40% of the respondents' raise chicken as source of income since it is easy to breed at the same time readily available for consumption. On the other hand, carabao and horse are the least livestock source of income because it is expensive at the same time needs ranch to raise.



In Figure 15, It is shown that 82.67% of the respondents are not aware on the mentioned training that gives the reason 92% did not take the training. Although 42% of the respondents are aware in the training but was not able to attend due to financial constraints

Salient Findings

On the basis of the data gathered, the salient findings are summarized as follows:

1. The household profile with respect to age shows that the highest number of head of the family garnered 25 which ranges along the age bracket of 40-49 years old followed by18 along the age bracket of 30-39 years old. A frequency of 9 that belong to 60 years old above and the lowest frequency is 7 whose age ranges to 20-29 years old. On the other hand, spouses along the age brackets of 30-39 and 40-49 shared the highest number with the same frequency of 21 and only 12 constitutes 60 years above. On the other hand, spouses along the age brackets of 30-39 and 40-49 shared the highest number with the same frequency of 21 and only 12 constitutes 60 years above. In terms of the number of children, the highest figure registered was 106 whose age bracket is 10-19 years old, followed by 47 along 20-29 years old. The lowest is 3 within 50-59 years old.

With respect to grandchildren there are 5 along 9 and below years old and only 3 within 10-19 years old.

Result

Based on the findings from the study, the following conclusions were drawn:

1. The age distribution of head of the families including their spouses is characterized as middle adulthood which is a period where they are actively involved in raising children. It is also called a production stage where couples are engaged in work in order to provide their children's basic needs including education.

2. The age distribution of children is characterized as school-age stage from late childhood to early adolescence period.

3. The occupations of the head of the families are generally service providers like security guard, driver, factory workers, and farmers. On the other hand, their spouses are doing manicure or pedicure job and domestic helpers.

4. Parents and their children are high school graduates who have finished their basic education. And are capable to read, write, and perform fundamentals of arithmetic which are considered 3 r's under the program of Department of Education.

5. The household-respondents have no alternative source of income besides their main occupation.due to the fact that many of them do not possess essential skills to do the work and other jobs that require skilled training.

6. A typical house of the community barangays are made from "pawid" which is reinforced by softwood such as coconut lumber. There are only few of them uses bicycle, motorbikes and appliances. Those who are engaged in farming do not own tools and machines in cultivating their farmlands. About a good number of them are engaged in livestock raising and growing vegetables or fruit bearing trees.

7. Majority of the farmers does not own their cultivated land but instead they served as tenants and lease as contracted from the landowners. And with no irrigation system.

8. Immunization is needed as a vital intervention for the children. Delivery of health services to be provided to the community is wanting.

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Increasing ESP Student Engagement through a Process of Structured Feedback

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Abstract

Student engagement is a common concern among many instructors in higher education. This is particularly true relative to student feedback. Indeed, of all the responsibilities inherent in university teaching, grading papers and offering feedback is considered one of the most important, yet least enjoyable among instructors. There are numerous reasons for this, including the amount of time it takes to grade and offer personalized feedback as well as the perception among many instructors that students do not consider feedback as anything but a justification for a particular grade. An overarching goal of feedback, namely to encourage a more thoughtful revision process and to help individuals develop as learners, seems to be lost on many students. This study investigated how to increase student engagement through a process of structured feedback by more effectively utilizing the tracking feature of Microsoft Word. A total of 42 first-semester female engineering students at a university in the UAE were involved in the study. Quantitative and qualitative data were collected through a survey of both students and faculty, semi-structured interviews of both students and faculty, and analysis of student-written text and observations. Preliminary findings from student-driven data only suggest that students given explicit instruction and training in how to interpret and act on written comments improve their writing, engagement, and motivation to learn.

Keywords: student engagement, structured feedback, engineering students, motivation, attrition, ESP

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Introduction

Student engagement is a common concern among many instructors in higher education (Fraser, 2012; Harper & Quaye, 2010; Hepplestone et al. 2011; Wolters & Taylor, 2012). This is the case among many faculty members at this UAE university. Due to a number of factors unique to this university, from the background of its students to its unique post-graduation guaranteed job placement program, faculty often find that attempting to engage students using approaches and methods commonly practiced in the United States and Western Europe often prove ineffective. This is particularly true relative to student feedback. Indeed, of all the responsibilities inherent in university teaching, grading papers and offering feedback is considered one of the most important, yet least enjoyable among instructors (Higgins, Hartley & Skelton, 2001; Wojtas, 1998). There are many reasons for this, including the amount of time it takes to grade and offer personalized feedback as well as the perception among many instructors that students do not consider feedback as anything but a justification for a particular grade (Carless, 2006; Chang et al., 2012). An overarching goal of feedback, namely to encourage a more thoughtful revision process and to help individuals develop as learners, seems to be lost on most students (Price, Handley, Millar, & O'Donovan, 2010; Rowe & Wood, 2008).

Research questions

This study was designed to investigate the following research questions:

1. Does explicit instruction and training in how to interpret and act on written comments improve student writing, engagement, and motivation to learn?

2. How do these students, most of whom are accustomed to high academic achievement, respond to structured feedback that requires that they take specific steps to earn high marks?

3. Is there a difference between those students that attended private English-medium schools vs. those that attended government Arabic-medium schools in terms of the effect of structured feedback?

4. How can feedback best meet the needs of those students that feel neither an integrative motivation nor an instrumental motivation to learn English (and develop their writing skills)?

Methods

Triangulation and purposeful sampling were used to gather data. According to Thurmond (2001), triangulation is an effective data gathering approach. Purposeful sampling is also an effective technique to identify specific individuals based on their experience or knowledge about a particular topic of interest (Cresswell and Plano Clark, 2011). Data were collected through a survey of both students and faculty, semi-structured interviews of both students and faculty, and student-written text and observations. Only finding from student-driven data is considered in this preliminary report.

Participants

The participants were 42 first-semester Emirati female freshman engineering students in two sections of Communication 101 enrolled in the fall of 2015. This is the first of two required communication courses freshman students must complete before being allowed to take more advanced design courses. All 42 students responded, making the return rate 100%. It is likely that all surveys were returned because they were distributed to participants in class and collected from participants before leaving class.

This may also accounted for all questions being answered. All participants were between 18 and 20 years of age. Thirty-one and a half percent of the students reported that their major is petroleum engineering, 22.3% indicated that their major is mechanical engineering, 15.2% chemical engineering, 14.5% electrical engineering, 8.3% material sciences and engineering, and 8.2% petroleum geosciences engineering.

Instrument

A survey was developed from themes identified in the literature. The survey was divided into five sections: 1) Demographic information, 2) Student Perceptions of Feedback, 3) Value of Feedback, 4) Preferences for Feedback, and 5) Suggestions for feedback. These sections were adopted from Edeiken-Cooperman and Berenato's (2014) study of undergraduate elementary education majors and their perceptions of electronic feedback as an alternative to handwritten feedback. There were 28 closed-ended questions and two open-ended questions. A five-point Likert-scale was used for the closed-ended questions. Responses ranged from "strongly agree" to "strongly disagree." The two open-ended questions were: 1) How can feedback be improved?; and 2) Is there anything else you would like to say about feedback?

Procedure

Participants in the researcher's two sections completed the questionnaire on the same day. The questionnaires were collected before students left the class. Interviews were conducted over a two-week period before and after class and during the researcher's office hours in an empty classroom.

Results

Preliminary results suggest that many students believe that feedback is important and helpful to their learning. While no consensus exists as to what type of feedback (handwritten, electronic, or verbal) is more useful, a majority of students believe that feedback in any form is used to justify a grade.

Table 1 reveals that 62.4% of students strongly agree that instructors provide enough feedback, while 12.3% are neutral. A majority (59.2%) of students strongly agree that written feedback is usually provided within one week, while 9.7% are neutral. Almost all students (88.5%) strongly agree that feedback is a justification for a given grade, while only 1.3% are neutral. A majority (57.4%) of students strongly agree that feedback is motivating, while 15.1% disagree. A majority (64.3%) disagree strongly that feedback is useful only when one receives a low grade, while a majority (80.5%) disagree or disagree strongly that feedback is useful only when it's positive. Finally, 81.5% agree or strongly agree that "The grade I receive is a better indication of my learning than feedback."

No.	Statement	Strongly	Agree	Neutral	Disagree	Strongly
-		Agree	00.004	10.00/		Disagree
1	My instructors provide me with enough feedback.	62.4%	23.3%	12.3%		
2	Written feedback is usually provided within one week.	59.2%	31.1%	9.7%		
3	Instructors use feedback to justify grades.	88.5%	10.2%	1.3%		
4	When my instructor gives me feedback it shows me that he or she cares about my work.	56.3%	24.4%	19.3%		
5	When I receive a lot of feedback, I feel encouraged.	60.3%	26.5%	13.2%		
6	Feedback motivates me to study.	57.4%	15.4%	12.1%	15.1%	
7	Feedback is important to me.	78.2%	18.4%	3.4%		
8	I find feedback useful only when I receive a low grade.		2.3%	10.2%	23.2%	64.3%
9	I often have a hard time reading written comments.	22.3%	11.2%	6.1%	31.2%	29.2%
10	I find positive feedback the most useful.		6.4%	13.1%	39.2%	41.3%
11	Understanding written feedback is often difficult because instructors use different approaches and terminology.	35.3%	49.4%	10.2%	5.1%	
12	I always read the feedback on my assignments carefully.	23.1%	11.3%	6.2%	33.3%	26.1%
13	The grade I receive is a better indication of my learning than feedback.	37.3%	44.2%	13.4%	5.1%	
14	I prefer verbal feedback over written feedback.	21.2%	15.8%	10.4%	37.3%	15.3%

Table 1: Responses to Closed-ended Questions

8. Discussion

Preliminary results suggest that it is possible to increase student engagement through a process of structured feedback among these 42 Emirati female freshman engineering students, but the time and effort needed to bring about meaningful change is dependent on a number of factors. One challenge is helping students navigate the varied and often structurally different ways instructors offer feedback. Eighty-five percent of students, for example, feel very strongly or strongly that understanding written feedback is often difficult because instructors use different approaches and terminology. While requiring that instructors follow one approach or practice to providing feedback (e.g., using the tracking feature of Microsoft Word) is both unrealistic and unnecessary, establishing guidelines that instructors across courses can follow (e.g., provide explicit training in how students interpret and act upon feedback) could go a long way to help. Nearly all students (98.7%) also believe that the main purpose of feedback is to justify their grades. This is in contrast to the 80.7% of students that strongly agree or agree that "When my instructor gives me feedback it shows me that he or she cares about my work." These seemingly contradictory results suggest that students have an ambivalent and somewhat complex relationship with feedback. On the one hand, they see feedback as a tool used by instructors to justify a particular mark. On the other hand, they seem to recognize that there is inherent value in an instructor's feedback to improving learning. That 86.8% of respondents strongly agree or agree that they feel encouraged when they receive a lot of feedback from instructors, while 72.8% strongly agree or agree that feedback motivates them to study offers additional insight into these overtly contradictory beliefs. Complicating matters is the finding that 81.5% of students agree or strongly agree with the statement that "The grade is more important to my learning than feedback."

Likewise, 96.6% of respondents agree or strongly agree with the statement, "Feedback is important to me." This, along with the 87.5% of students that disagree or strongly disagree that "I find feedback useful only when I receive a low grade" is more evidence that many students perceive feedback as both a tool used by instructors to justify a grade and an opportunity for students to learn and improve their work. What is striking, however, is that 59.4% of students disagree or strongly disagree with the statement, "I always read the feedback on my assignments carefully" while only 34.4% agree or strongly agree. The idea that feedback is important to and valued by many students, while apparently not being read carefully by many students, is both noteworthy and worrisome. After all, if certain beliefs are held by students and their behavior is affected by these beliefs, then the idea that many students value something that they are apparently not carefully reading suggests that there is a disconnect between beliefs and practice.

Although respondents appear to be inconsistent with their beliefs about feedback, an overarching reason why this is the case might be linked to their experience receiving feedback over the years both in and outside of school. While understanding this link between perception and experience is beyond the scope of the current study, it is something that deserves to be examined further.

Conclusion

Students provided seemingly contradictory responses to questions about feedback. While feedback is often perceived as justification for a grade, it is also valued as an opportunity to improve assignments and grow as learners. Where a participant falls on this continuum depends, in large part, on the kind of experience they have had as students. It is necessary, therefore, to better understand the kinds of experiences students in a particular course have had prior to entering university. Doing so should offer insight into how individuals perceive feedback and what responsibility they have to engage with feedback in a positive and meaningful way.

Although preliminary findings from the current study raise more questions than provide definitive answers, it is clear that among many of the 42 Emirati female freshman participants, increasing student engagement through a process of structured feedback is possible. The challenge is to recognize that feedback is contextual, coconstructed, relative and uniquely interpreted according to factors that may or may not be apparent to all stakeholders. While student engagement increased over time, it is unclear at this stage of the research if that increase is sustainable over time. As students complete their first semester and move on to their second semester, they will not only encounter a number of new instructors, but will likely find that these instructors use their own particular feedback system. Establishing guidelines that instructors across courses can follow in giving feedback may help ameliorate some of the burden this places on students.

Limitations and Recommendations

The primary limitation stems from the study's design in that only females in the researcher's own classroom were included. Freshman male students taking the same course with another instructor could have been included, but doing so would have inevitably complicated data collection. Nonetheless, future research should consider expanding the current study to include males.

Another limitation is the fact that the researcher was conducting emic research. While the benefits of emic research are well-established, being part of a group or community under study poses a number of potential problems. In this case, the researcher's familiarity with the participants may unduly influence his interpretation and analysis of data. In addition, serving as both the instructor and researcher in the current study opens up the possibility that the Pygmalion effect (or Rosenthal effect) influenced participants in undue ways, thus impacting the results of the study.

The third limitation is connected to the fact that the study is still on-going. While the findings are preliminary, it must be recognized that the researcher has yet to fully consider the other data that has been collected to date (i.e., interviews with faculty and observations of participants and an analysis of their writing samples). Consequently, understanding that interpretations may change as more data is collected and analyzed is important.

Further research of the current study could explore what impact early intervention has on the ability of students understand and act upon written feedback using, in this case, Microsoft Word. If students that appear to struggle with the writing process (and, thus, how to incorporate feedback into their writing) are given additional support early in the semester, they too might exhibit more growth as writers/researchers and produce documents that clearly demonstrate the benefits of feedback.

Finally, additional research should better understand how feedback can best meet the needs of those students that feel neither an integrative motivation nor an instrumental motivation to learn English. Doing so will help those individuals confronted by the challenge of learning English as a second language while being expected to effectively use it to advance their studies.

While trying to understand the role feedback plays in learning is a complex process, doing so is beneficial to the individual student and everyone with whom he or she engages.

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Employability of BSIT Graduates of Central Philippines State University – Main Campus

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ABSTRACT

This research focused on the employability of BSIT graduates. The study covered 170 graduates of CPSU-Main Campus, school year 2012-2014. A standardized questionnaire was employed to gather data. Cross tabulation, frequency, percentage distribution, and chi-square test were utilized.

Findings showed majority of the respondents were employed locally in private sector, had regular status, waiting time of 3 months below prior to first employment, and had above weighted general average. There were no significant associations between employment and tenurial status to the batch they belong, gender, civil status, age, weighted general average, waiting time, location of employment and awards received.

However, there was a significant association on the respondents' tenurial status to the batch they belong, gender, salary, type of organization employed, and awards received. Majority of the respondents would like to acquire more training in computer technology. Data encoder was the top career perceived by the respondents they can be effective 5 years from now. Those interested in IT should focus in their studies, shows hardwork, resourcefulness to be successful. The university was recommended because it's affordable. As perceived by the respondents, the College of Computer Studies offers quality education and suggested improving the laboratory facilities, establishing an alumni website to maintain the partnership between graduates and the university.

Keywords: tracer study, BSIT, CPSU

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Introduction

A tracer study measures the relevance of vocational training and a management tool for planning and monitoring of programmes, provide information for programmatic changes, review of training curricula and help monitor the delivery of training Lange (2001). Similarly, Schomburg (2003) shares that graduate survey results are important for "analysis of relationship between higher education and work." Moreover, Millington (2001) states that "they provide quantitative structural data on employment and career, the character of work and related competencies, and information on the professional orientation, and experiences of their graduates." Additionally, the collected data is an important indicator of the quality of higher education.

In the Philippines, the Commission on Higher Education requires all HEIs to conduct a tracer study and is equally reflected as one of the required documents by any higher education accrediting body such as the Accrediting Agency of Chartered Colleges and Universities in the Philippines (AACCUP), Inc.

The Central Philippines State University in its quest in providing quality education and in producing globally competitive graduates has been able to hurdle the AACUP level 1 accreditation in most of its curricular programs. One of the requirements for the AACUP accreditation is a tracer study. As mentor of the College of Computer Studies, and upon sharing ideas and visions with co-mentors in relation to the graduates of the BSIT program the researcher was motivated to conduct this study in determining the employability of BSIT graduates of SY 2012-2014.

The Problem and Its Scope

This study determined the employment status of BSIT graduates during S.Y. 2012-2014. Specifically, it investigated the association between employment and tenurial status of BSIT graduates and their profile.

Methodology

The subjects of the this study were the BSIT graduates from school year 2012-2014 of the Central Philippines State University with a total of 170 respondents. This study utilized the descriptive research or quantitative method to determine the employment and tenurial status of the respondents and their profile. Adapted questionnaires were used and distributed personally, through e-mail, facebook, skype and telephone interview to gather data.

Statistical Tools Used

Cross tabulation, frequency, percentage distribution, and chi-square test were employed in analyzing and interpreting the data.

Conclusions

Most of the BSIT graduates from Batch 2012; female; aged 22 to 24 years old; single; had a salary of more than Php 10,000 to Php 15,000; and had been employed. Moreover, majority of the respondents were employed; had a regular tenurial status; worked on the private companies or organizations; had a waiting time of 3 months and

below; and worked locally. Majority of the respondents got an above average general weighted average (more than 1.94); and 76.5% did not receive neither academic nor service awards. There were no significant associations between the employment status of the BSIT graduates and to the batch they graduated from; gender; and civil status.

There were significant associations between the employment status of the BSIT graduates and to their age; general weighted grade average; and awards received. There were no significant associations on the tenurial status of the BSIT graduates and to their age; civil status; waiting period; location of employment; and general weighted average. There were significant associations on the tenurial status of the graduates and to their batch they belong; gender; salary; type of organization they were employed; and awards received.

Most of the BSIT graduates would like to acquire more training on computer technology, work-out the application to work abroad, and to pursue Master of Science in Information Technology or other related graduate courses.

Data encoder was the top career the BSIT perceived that they can be effective 5 years from now followed by technical support specialists and systems analyst.

Graduates advised the incoming BSIT students to focus on their studies; shows hardwork; and be resourceful to be a successful student.

The university had 86.7% recommendation rate among the BSIT graduates to the incoming freshmen students. Affordability was the main reason of recommending the university.

Common perceptions of the graduates on the College of Computer Studies were provides quality education and train students develop skills in programming and networking.

Graduates suggested improving the College of Computer Studies buildings and classrooms, and improvement of the laboratory facilities must be given the top priority.

Establishment of an alumni website must be materialized to ensure strong partnership between the graduates and the university.

Recommendations

It is therefore recommended to: review the curriculum to determine what subject to phase out and what must be added; align the skills of the IT students needed by the industry; and design to prepare graduates and demonstrate the core competencies expected to them in the workplace. Improvement of the computer laboratories equipped with state-of-the-art facilities such as: more computer units installed with licensed software (educational/instructional) in programming, multimedia, productivity, and utility; LCD projector; Alternative Learning Board/Electronic Board; and provide WiFi (Wireless Fidelity) accessible to all IT students. Improvement of the College of Computer Studies building, classrooms and amenities. The instructional competence of the faculty members must be strengthened and upgraded to help students acquire knowledge, skills and values necessary in job placement; hire additional faculty members preferably MS in Information Technology to teach programming subjects; seminars and educational tours must be conducted to update IT students on the standards and trends of information technology; establishment of an Alumni Website to foster strong relationship between the graduates and the university and to encourage graduates' participation in taking the lead of planning, organizing, directing and implementing the programs of the University and the CCS department as a whole. Lastly, a tracer study must be conducted annually to achieve accurate determination of the status of graduate's employment.



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The Impact of ICT on Youths Development in Nigeria

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Abstract

The world today is very competitive as a result of globalization. The rapid changes in technology have brought into focus the issue of Information and Communication Technology (ICT) in all spheres of life. Technologies now feature in collecting, storing, editing and passing on information in various forms. Nations have recognized the importance of ICT and have made frantic efforts to develop and incorporate ICT in education programmes. Hence, education is the process of shaping individual's behaviour for adequate adjustment in the society. This adjustment is vital for national development. Nigeria has a laudable ICT vision and has incorporated computer education as one of the subjects to be offered at all levels of education. One of Nigeria's specific aims of ICT vision statement is to empower the youth with ICT skills and prepare them for global competition. Youths are the driving forces that determine the future and hope of many societies. This paper, examines the impact of ICT on youth development in Nigeria, looks at the following concepts: youth, education, development and youth development. A questionnaire was designed on a four-point scale to elicit information on ICT, youth development etc. Data analysis is based on mean. Among the major findings is that ICT has empowered many Nigerian youths, equipped them with relevant skills that have helped them establish their own computer business outfits or get jobs as computer engineers and operators. The paper recommends government financial assistance to maintain ICT education in the country.

Key words: ICT, Youth, Education, Development.

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Introduction

Rapid change in the technology has brought into focus the issue of ICT which is an acronym that stands for Information and Communication Technology. ICT has affected virtually every aspect of human life in the society. It has penetrated the educational, political, economic, social and cultural lives of people in many nations of the world. ICT has become the most useful instrument of development in the whole world. Development according to Macmillan (2009), is a change, growth or improvement over a period of time. Ajayi in Chibueze (2007:22-23) gave a detailed account of how IT has successfully been used in both developed and developing nations of the world to enhance education and offset the problems associated with traditional method such as a large class sizes and unproportional teacher - student relation and acute shortage of learning resources. According to him, India, Pakistan, Indonesia, Zambia and several Latin America countries have long embraced IT-based education as a means of increasing access to basic education among their people. In the United States of America for instance, A mobile technology van is used to offer internet service to areas which are connected. The mobile van is also available to other groups with education mission.

Nigeria, a developing country in West Africa adopted the policy for information technology in the year 2001. This was the right step in Information and Communication Technology (ICT) application in every sector of Nation's life especially in the Educational sector. Education is the totality of all the means through which one acquires knowledge, skill, attitudes, and values and develops positive behaviours to make one become useful to oneself and society in which one lives.(Enaibe 2010:23) The adoption of ICT policy by the Nigerian government led to the incorporation of computer education as one of the subjects to be offered at all levels of the nation's educational system. The knowledge and skill acquired as noted by Nbina (2010:282) will enable the individual process information by organizing and reorganizing, sorting and analyzing, processing and communicating information. Nigeria has an Information Vision Statement which is to make the country, an Information and Technology capable country in Africa and a key player in information society by the year 2005. Among the specific aims of this Information Vision Statement is to empower the youths with ICT skills and prepare them for global competitions.

Youths in this context are people between the ages of 18 & 35. They are very active, valiance and very vulnerable segment of the population. They develop into the leaders of tomorrow, parents for the future generation. Youth is a vibrant segment of the society and indeed of any nation. It is quite a useful and hopeful group that must be given every care and attention. Youth education is very important for development of manpower. Education leads to development. This is right to say that when the youth is educated the nation is equally educated. Hence ICT educations for youth development are vital issues that must be taken very seriously in every nation's educational sector and even in homes. It is vital because of the immense benefits for the youth. There is every need to support the guide and provide all the ICT facilities for the youth development.

It is evident that when youths are well developed and they use the knowledge and skills acquired as expected in the community or society, that community or society must surely be developed for better. The youths will also be self developed.

In as much as educating the youths especially in ICT is quite important and can contribute to the development of both youth and the nation. What they are to become

in the society depends on the level of competence in ICT on what they are able to read and channel themselves toward. Information technology is one of the major forces influencing opportunities for youths. Access of information technology allows youths to learn marketable skills, find required information and be heard by others.

Globally, ICT education is one of the most important elements defining the basic competencies of the youths. It is essential for students at all levels of education. ICT is needed in the educational sector because it has the potential for increasing access and improving the relevance and quality of education in general and youth development in particular.

Statement of the Problem

Nigeria is a nation with the largest economy in the West African sub-region and is also blessed with human and natural resources. This shows that the country has a great potential for growth. Contrary to expectations, the history of economic stagnation, declining welfare, huge unemployment among the youths and social instability has been a common experience since her independence.

A close review of the past indicted that Nigeria started having a growth turn around in recent years when ICT was valued, appreciated and brought to the country. The door of opportunities to rapid growth opened to Nigeria. The youths which constitute a very high percentage of the country's population grabbed these opportunities with zeal and vigour. Today the knowledge and skills acquired through ICT education have affected the life of many Nigerian youths to a great extent that enhances the youth development. There are also some negative effects of ICT on youths that need proper orientation and moderation by the government and parents to the youths.

Purpose of Study

Purpose of the study is to examine the impact of ICT on youth development in Nigeria and to determine its effect on science and language students respectively.

Research Questions

- What are the language and science students' perception on the meaning and functions of ICT?
- What are the language and science students' knowledge on the impact of ICT on youth development?

Research Design

The research design was survey and analytical. 240 youths (120) males and (120) females in Enugu education zone through a purposive sampling technique constituted the sample of study.

The questionnaire which elicited responses based on the research questions were used on the four-point modified Likert scales of Strongly Agree=4, Agree=3, Disagree=2, Strongly Disagree=1.

Frequency and mean was used to answer the research questions, A mean of 2.5 was taken to be positive response (Agree) while any score below 2.5 was regarded as a negative response (Disagree). The mean of the nominal value of four categories were worked as follows: $4+3+2+\underline{10}$ 2.5

Analysis and Results

	- X	x
Information Communication Technology (ICT)		3.05
refers to technologies used in processing data.		
Most Nigerian youths are computer literate.	2.42	3.75
Students learn their lessons in less time with		2.91
computer based instruction.		
Internet provides access to virtual libraries the		3.05h
world over.		
ICT aids the completion of assignments.		3.05
Sufficient ICT facilities are found in all schools.		3.05
Computers are used in the teaching of all subjects		1.99
in schools.		
Internet gives access to E-mail for different users.		2.45
ICT services are more important for science		3.04
students.		
ICT is more relevant for language students.		3.49

Table I: Responses on Language and Science Students Knowledge Of ICT in Education

Table I shows data on Language and Science Students Responses on Knowledge of ICT in Education. From the table, information and communication technology ICT refers to technologies used in processing data has means 3.13 and 3.05 which shows agreement decisions for both language and science students. Most Nigerian youths are computer literate has means 2.42 and 3.75 which shows disagreement and agreement decisions for language and science students respectively. Students learn their lessons in less time with computer based instruction has means 3.00 and 2.91 showing agreement decisions for language and science students. Internet provides access to virtual libraries the world over has means 2.92 and 3.05 showing agreement decisions for both language and science students. ICT aids the completion of assignments has mean 3.13 and 3.05 which shows agreement decisions for both language and science students. Sufficient ICT facilities are found in all the schools has means 3.29 and 3.05 showing agreement decisions for both language and science students. Computers are used in teaching all subjects in schools has means 1.77 and 1.99 which shows disagreement decisions for both language and science students. Internet gives access to E-mail for different users has means 2.45 and 2.45 showing disagreement decisions for both language and science students. ICT services are more important for science students has means 3.37 and 3.04 which shows agreement decisions for both language and science students. ICT is more relevant for language students has means 2.46 and 3.49 which shows disagreement and agreement decisions for language and science students respectively.

Table II: Response on Language	and Science Students ²	' perceptions on the Impac	t
of ICT on Youths Development			

	$\bar{\mathbf{X}}$	$\bar{\mathbf{x}}$
Through constant use of computers, youths can develop skills in their subject areas.	3.29	3.05
ICT offers opportunities for self reliance for the youths.	2.99	3.03
Competencies in ICT have helped to reduce unemployment for the youths.	3.23	3.25
Students through the use of internets imbibe the culture of other people world over.	2.88	2.46
Global use of ICT has improved positively on the views expressed by the youths.	3.15	2.83
Students through the use of the internet repair electronic materials.	3.2	2.83
Exposure to ICT has made youths nowadays, experience sexual activities earlier than in those days.	3.5	2.03
Most Nigerian youths browse without making effective use of the information collected.	3.2	3.23
Many youths use their handsets to send pornographic materials to their friends.	3.25	3.02
Most often youths use cyber café for fraudulent activities.	3.42	3.02

Table11 shows data on responses of language and science students' perceptions of the impact of information and communication technology on youth development. From the table through constant use of computers, youths can develop skills in their subject areas has means 3.29 and 3.05 which shows agreement decisions for language and science students. ICT offers opportunities for self reliance for the youths has means 2.99 and 3.03 showing agreement decisions for both language and science students. Competencies in ICT has helped to reduce unemployment for the youths has means 3.23 and 3.25 showing agreement decisions for language and science students. Through the use of internets the youths imbibe the culture of the other people world over has means 2.88 and 2.46 which shows agreement decisions for language students and disagreement decisions for science students. Global use of ICT has improved positively on the views expressed by the youths has means 3.15 and 2.83 showing agreement decisions for both language and science students. Students through the use of Internet repair electronic materials has mean 3.20 and 2.83 showing agreement decisions for both language and science students. Exposure to ICT has made youths nowadays, experience sexual activities earlier than in olden days has means 3.5 and 3.03 showing agreement decisions for both language and science students. Most Nigerian youths brows without making effective use of information collected has mean 3.2 and 3.23 showing agreement decisions for language and science students. Many youths use their handsets to send pornographic materials to their friends has means 3.25 and 3.02 showing agreement decisions for both language and science students. Most

often youths use cybercafé for fraudulent activities has means 3.42 and 3.02 showing agreement decisions for language and science students respectively.

Discussion of Findings

Language and Science students' perceptions on the meaning of ICT in Education (table I)

The students mean rating revealed that both language and science students are conversant with the meaning of ICT. They are aware that information in the world today can be transferred in different forms. The most popular these days are telephones and computers. Many Nigeria youths have cell phones, personal computers, computers in their homes and schools. They are used to transfer information using internet. According to Hantor (1994), Internet is a loose collection of millions of computers at thousands of sites around the world whose users can pass along information and can share files no matter which type of computer they are using. The internet services/browsing in Nigeria are mostly provided by cybercafés. These cybercafés have their internet services enabled by internet service providers (ISPs). It is in cybercafé that individuals go for internet browsing. The youths have the highest number of patronage of cybercafés. They often times browse with their phones and computers in their homes. The implication of this attitude is that most Nigerian youths are computer literate. With the introduction of computer education at all levels of Education in Nigeria some youths are computer literate while some are not. With computer based instruction students learn their lessons in less time. ICT is used in effective teaching and learning of most concepts and principles of school subjects'. For instance the science or language teacher could record the highlights of his lesson, illustration, diagrams etc on given topics on diskettes, CD-ROMS; and have them projected on a large elevated monitor as he teaches. This strategy greatly facilitates teaching and learning and hence increases understanding, evokes and sustains interest in them because of the use of audio-visual aids which show diagrammatic representations, processes, etc. It also helps to alleviate the problem of large class.

Internet provides access to virtual libraries the world over. ICT serves as a reference point for information, news sports, dictionary, encyclopedia, etc for youths. Internet has extensive news coverage, research opportunities, scholarships and even the chance to study in developed countries. These are the advantages the youths can utilize in their frequent visit to cybercafés. Materials for school assignment can be downloaded from the internet. Many well researched works and journal articles and textbooks are in software which the youths can download or read through online which aids them in their studies. The knowledge of ICT has offered both the language and science students the ability to access, retrieve, transmit and document programmes and information which enables them to write their assignments, projects, thesis etc. Sufficient ICT equipment are found in all schools in Nigeria most especially federal institutions. Though sufficient ICT are found in Nigerian schools, not all the subjects are taught with computer because many Nigerian teachers are yet to be computer literate. Computers are available but there are not enough capable hands to handle or operate them. For this reasons not all subjects are taught with computer. From personal observation, computers are mainly used in teaching computer science even in some schools where there are language laboratories, these laboratories are not well utilized or managed in language teaching.

Internet gives access to E-mail for different users. Some of internet websites are mail oriented. Mails are transferred electronically. Students and their families and friends exchange e-mails to facilitate letter writing and keep down the cost of phone calls.

ICT is relevant in teaching all subjects in school but more relevant to science courses like computer science, biology, medicine and so on.Science students use computer more often than the language students. Even the language students gave their agreement decision on that. For example, In Federal College of Education Eha-Amufu, the language laboratory is not serving the students learning therefore they do not know it's value and they feel that ICT is more important in science teaching than language while science students like computer students who use computer often have discovered that ICT is useful in teaching science and every other subjects like languages.

Language and Science students' perceptions of the Impact of ICT on youth development (Table II).

The students mean rating reveals that youths can through the ICT develop skills in their subject areas. They can also develop knowledge, creativity and be innovative through constant use and manipulation of the computer.

ICT offers opportunities for self reliance to the youths. ICT has offers many vocational jobs to youths, for instance with the introduction of GSM and CDMA, many youths have learned on internet the repairs of the handsets and other related sets. They engage themselves in the installation of hard and soft ware. They are able to detect and affect any change on part or component of computer hardware. They also conduct repairs on the software and networking of computers, V-sat installations for different applications like satellite receivers, V-sat for banks and internet cafe, the installation and repairs of PABX for companies, departments and ministries, Installation and repairs of cars, houses and CCTV security networks for organizations etc. These have helped many youths to be financially independent and relieving poor families financial burden.

Competencies in ICT have helped to reduce unemployment for the youths. Studies have shown that ICT have created various kinds of jobs such as computer engineers, the chief information officer in big enterprises or government agencies, computer operators etc. According to Ebitani (2001), ICT has created opportunities for individuals, firms and countries all over the world. No wonder there are commercial GSM, cyber café and other computer centers all over the country. ICT has really improved the economic life of many people especially the youths.

Oladunjoye and Audu, Olasanmi and Kareem in Oladunjoye and Audu (2014) admit that since early 90's vendors of hand held phones and their accessories are common sight in every community. There are various types of ICT based businesses such as document processing centers, cyber café, computer training, computer services and repairs, internet programming, cable and satellite TV installations etc. Also in the area of job searches, the internet is an incredible tool for finding a job. It's good for youths because it provides a powerful, economical way to conduct a real job search. Resume are published online for prospective employers. Young people invest through the internet. People do financial research, buy stock, and invest money.

Some companies trade their own shares. Young people are finding new ventures, and new ventures are finding capital.

Students through the use of internet imbibe the culture of other people world over. Some students like language students spend most of their leisure time viewing television,

watching films, and surfing the internet and through these means learn other peoples culture, this in one way or the other influences their behaviours either positively or negatively. The language students have agreement decision on this because culture is part of their language study and they are less busy than the science students who are always busy example the medical students, They have nothing to do with culture in their area of study that is why they disagreed on this point.

Global use of ICT has improved positively on the views expressed by the youths. On a chat line, young adults can talk to another person or group of people. This helps improve teenage grammar ability, increase their intelligent quotient and make them smarter. The new technologies have helped create a culture of learning in which the learners enjoy enhanced interactivity and connections with others, rather than listen to a professor regurgitate facts and theories. Nbina (2010) adds that the internet avails the child the right to explore on any subject or field of his choice. Exchange of ideas is possible and opportunity for further development is available even to the child on the computer. Students could participate in class group discussion via video conferencing.

Students through the use of internet repair electronic materials like television. Computer, radio, handsets etc and through this means earn their living as has explained earlier above,

Despite the immeasurable positive impact of ICT on youth development, it also has a number of negative effects on them. Some of these negative effects include:

For example, youths nowadays, experience sexual activities earlier than in early days. Many youths have been destroyed through the watching of pornography on the internet and cable satellite television, for example DSTV. The problem arises when the youth start looking for a way to practice those things he/she has learnt. If he/she cannot get it, he finds solace in imaginations which should have been used for bringing out good ideas for a constructive future. Worse still they look for people with like minds with whom they can share their dirty views thereby worsening their situation until they become totally enmeshed in this degrading act. Science students have disagreement decision on this probably because sex education is among the things they study in their course therefore, have no negative ideas about sex or pornography. A research conducted by Leatu on teenage pregnancy and school drop outs in Adamawa State of Nigeria 2002 cited in Onaolapo (2007:115), it was discovered that most secondary school students in Adamawa State have at least experienced sexually transmitted disease.

Most Nigerian youths browse without making effective use of the information collected. The internet has become a vogue among the youths. Browsing through the internet has become a favourite part-time of the youths. The internet services/browsing in this part of the world are mostly provided by the cybercafés. These cybercafés have their internet services enabled by Internal Services Providers (ISPs). It is in the cybercafé that individuals go for internet browsing.

From experience and personal observations, the youths have the highest number of patronage of cybercafé. They spend most their time in the chat room of the internet. They send mails, chat with online friends who in many cases have never really met their chat partners face to face. On close observation, one can see that the youths hardly visit religious websites. They visit pornographic sites (here, dirty words are allowed), cultism and some websites that catch their curiosity. The quest to satisfy their curiosity is what leads some of these youngsters with unsavory website.

There have been reported cases of teenagers leaving home in western world through online dating. A lot of these teenagers have walked with death traps set by sadistic killers. Some were traced to where they were not so lucky. What this paper is saying is not that internet is not good, it is good, and can affect the youth both positively and negatively. As the case may be, what matters most is that youths should be guided and proper orientation should be given to them right from secondary school so that they do not get carried away by the excitement of the new concepts and the freedom that internet offers.

Most often youths use cyber café for fraudulent activities. The most common aspect of the internet that caught up negatively with the youth is con practice. Fraudulent practices known as 419 have become the other of the day. Mails are sent out on daily basis with fake addresses, false information and false promises. A lot of these mails filter with different mailboxes, sometimes, some otherwise innocent looking mails are sent to users of some mail accounts e.g. Yahoo telling individuals to forward a mail to at least twenty users or more, otherwise, their address may be erased from the yahoo account. Users innocently send out these mails which on investigation, may be discovered not to have actually come from yahoo. One may then ask what the writer stands to gain. They simply want to collect mail addresses to know who to defraud. It is very common. They sleep over at cybercafé all night browsing which is mostly to defraud people. They mostly defraud innocent foreigners. The practice has become common that some of these youngsters hold by address each other as yahoo guys which simply mean internet fraudsters. Some of them drive flashy cars in schools and live big.

Way Forward

Information and Communication Technology is necessary for the development of a country and youths in particular. There is an urgent need to tackle the negative impact of ICT on Nigerian youths:

- Like Britain did in 80's Nigeria government should source for fund to make computer available in every school. This should be jealously guarded and maintained so as not to render them useless within a short time. This will help to provide opportunities to some youths who are yet to be computer literate to also enjoy the benefits it offers. Africa especially Nigeria should improve its electrification supply without effective electricity the quest for ICT in learning will be a mirage.
- The various rules and regulations put in place by the services providers in Nigerian Communications Commission to govern ICT services providers in Nigeria society should be monitored and be sure that service providers comply.
- Effort of the individual or Nigerian citizen, law enforcement agents are needed to reduce fraud and scam among Nigerian youths.
- Through ICT a global village, parents and the society in general should monitor the kind of programmes youths watch on the internet.
- Religious leaders should inculcate moral behaviour to avoid immorality among people.
- Parents should moderate their children's frequent visits to cybercafé and get them to show the same zeal and interest in their academic works, they can become addictive if not well monitored.
- Cyber cafe should be made to block some of the so-called adult sites which actually have nothing to offer outside display of nudity, pornography and address of prostitutes and lure for would be prostitutes. This is already

practicable in some Islamic countries where cybercafé are made to block pornographic sites.

- Proper orientation should be given to youths right from secondary schools so that they do not get carried away by the excitement of new concepts and the freedom that internet offers.
- More emphasis should be laid in the area of research and information in the internet rather than making these youths see the internet as something that is made only for leisure and entertainment.

Conclusion

The survey reveals that ICT plays a very important role in the development of nations and youths in particular. ICT has a very big impact on the development of Nigerian youths, as the youths develop the nation also develops because youths are the life wire of every nation. In as much as ICT has great positive impact on the youth, it also has some negative impact too. As the people enjoy its positive impact, everything should be done the stakeholders to reduce to minimal, the negative effect of ICT in Nigeria in general and youths in particular. There should be an organized body that regulates the type of information that should be on the internet and to which group of people, adults or youths because some of the information obtain from this type of media are not good for the youth. However, the use of internet should be encouraged among the young ones but with a view of tapping the advantage the cybercafé has offered especially to the Young stars who still have long years ahead of them. This will encourage the advent of technological development in the minds of these youths who will bring these developments to the nation. It is necessary that government, corporation, parents, individual, institutions etc. should put hands together to allow ICT operate.

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Online Discussion Uusing Facebook Module Versus Moodle Forum Module in a Moodle Platform: Feedback from Secondary Students in the Kingdom of Tonga

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Abstract

Students engagement in online discussion sometimes defines their learning attitudes. However, the tools that is being used for online discussion may also frame the attitudes of the students in online discussion. Facebook® has been considered by some researchers as a great platform for online discussion. Students engagement and attitudes are part of their objectives. Several educators have conducted research by using Facebook platform for online discussion. Several studies have proven Facebook as an effective platform for online discussion based on some factors. On the other hand, MoodleTM, a free open source Learning Management System (LMS) is widely used by many learning institutions across the world. Moodle has a module for online discussion. In this study, we evaluate students online attitudes in using two methods of online discussions in a Moodle platform 2.4.3. The first method of online discussion is a Facebook module that allows students and teachers to participate in an online discussion using Facebook Comment Social plugin developed as a Moodle module. The second method is using the available Moodle module for forum discussion. The two methods were evaluated through a questionnaire. The results of the survey was analyzed and evaluated.

Keywords: facebook module, moodle, facebook, Kingdom of Tonga



Introduction

Facebook, a social network platform, plays an important role in connecting people across the globe. Facebook users share information, exchange ideas, comments, pictures even participate in group discussions with members that have common interest or any commonality. Anyone who is 13 years old or above, can become a Facebook user, Facebook, 2015. Researchers have considered if social networking platforms (including Facebook) could have a role in education, Santos, et al. (2009). Several studies had proven the effective interaction of students in Facebook. Others had also considered Facebook as a great platform for lecturing. Some educators have acknowledged the use of Facebook in academic community for various reasons (Visagie & Villiers, 2010; Mazer, Murphy & Simonds, 2007; Reid, 2011; Hew & Cheung, 2012);

- to maintain contact with group of students of the same course
- develop a network with other students
- to engage in communication with the teacher and with former colleagues
- to meet students with similar interests, and share all types of information

The acknowledgment of a student's use of Facebook is of crucial importance for the academic community, as well as for the teacher and students, since this application could have a large impact on teaching-learning dynamics. The use of Facebook, as stated by other researchers, has a great impact on the motivation of the students to turn, effective learning and climate in the classroom, (Hew, 2011; Selami, 2012). Several researchers have expressed their belief based on the outcome of their findings that Facebook has become one of the most prominent social network platforms among students and has potential for teaching and learning because of its unique built-in functions which offer pedagogical, social and technological affordances (Deng & Tavares, 2013; Monuz & Towner, 2009; Pempek, Yermolayeva & Calvert, 2009; Selwyn, 2009). One of the built-in features that is available in Facebook which has become part of the academic activities and researchers interest is Facebook Group. With the advent of groups on Facebook, which do not require members of the group to be friends, it became possible to create a study group in which students and instructors participate without being friends. Under these conditions, the possibility of using the Facebook Group as an alternative to a Learning Management System (LMS) becomes relevant.

On the other hand, Learning Management System (LMS), is a software that enable course sites to be created Sclater, (2008). These systems are purchased and maintained by the educational institution to provide students with a space for online learning. An LMS is usually a password-protected system which enables the educational institution to open multiple course environments with relative ease. Moodle, is a popular, free open source LMS. Moodle allows educators to create an online environment in support of teaching and learning activities. Within Moodle, there are features such as file uploads, discussion forums, assignment submission functions, calendar entries and grading options. One commonality shared by LMSs is that they are organized in a course-based mode, and linked with course enrollment. As in Moodle, which was created especially for academic purposes, contains online activities and online resources, and can be organized in a course-based either by weekly format or topically format. Forum (Online Discussion) is one of the online activities available.

Facebook Module in Moodle platform

A module was developed and introduced by Sopu, Chisaki & Usagawa (2014) for Moodle 2.4.3. The purposes of this module (Facebook module) were to allow students and teachers to use Facebook comment features for online discussions as one of the activities in Moodle as shown in Figure 1.



Figure 1. Online Discussion (forum) can be added as one of the activities.



Figure 2. Online Discussion in Moodle using Facebook module.

This module allows the teachers to add an activity for students. This activity allows students to discuss online. A topic is given for students and teachers to discuss as shown in Figure 2. The students can use their Facebook account to participate in the discussion. Students could also login with their Facebook account. A more detail on this part was also provided by Sopu, Chisaki and Usagawa recent study. This Facebook module allows students to participate in the discussion or choose to post to Facebook Timeline and tag a friend who is not member of the class but may contribute to the discussions (lable 2 & 3, Figure 3). Students could view the whole thread of discussion in one screen view and reply directly to other students discussions (lable 4, Figure 3). The teachers can moderate the discussion (lable 1, Figure 3). Students could also get notification on Facebook about online discussion using Facebook module.

Figure 3.

Facebook module capabilities.



Forum module for online discussion in Moodle

This module is available in Moodle for online discussions. This module is part of the development of Moodle platform itself which its documentation is available for the public (for more information see https://docs.moodle.org/24/en/Forum_module).

As mentioned above, there were studies comparing online discussion in Facebook and other LMS such as Moodle. Two different platform were compared. With still open discussion in the literature on using Facebook group for online discussions as part of the online academic activities for students and teachers, this leads to the objective(s) of our study. This study aims to compare secondary students asynchronous discussion participation in Facebook forum module with Moodle forum module which both modules were available in one platform (Moodle platform).

Methodology

A Facebook module for Moodle platform 2.4.3 was created for this work. A full documentation of the technical process is described in a previous study in 2014 by Sopu, Chisaki and Usagawa.

A. Procedure

A class of 26 (year 12) secondary students (Facebook users for at least 1 year) participated in this study. A 12 weeks course was provided (weekly format) in Moodle, where a blended e-learning approach was utilized. Students attended their regular classes and were asked to spent 50 minutes on Moodle at least 3 times a week. The first half of the course (6 weeks), the students used the Facebook forum (Figure 1) for the weekly Online Discussion, which a topic was given relevant to the weekly topic, students and teachers were asked to participate in the discussion (Figure 2). The next half of the course (6 weeks), the students used the Moodle forum discussions. At the end of the course, a questionnaire was given as part of the activities of the last week to complete the course.

B. Questionnaire

A questionnaire with 15 likert format set of questions were given to the students as part of the last week activities. The same set of questions were give to the students to evaluate the Facebook forum compare to the Moodle forum. Some of the questions of the survey were adopted from the Attitude Towards Thinking and Learning Survey (ATTLS) Galotti et al, 1999. There were 5 responses expected from each question in
rank, Strongly Agree (SA), Agree (A), Neutral (N), Disagree (D) and Strongly Disagree (SD) ranking from 5 (SA) to 1 (SD).

C. T-Test

The data is then analyzed, by using t-test. Each question was analyzed.

Results

There were 26 students participated in the course. The questionnaire was able to completed by 22 students at the end of the course.

Table 1. t-test result.

Item #	Moodle (mean± <i>sd</i>)	Facebook(mean±sd)	(p-value)
1. I feel the easiness of participation in forum discussion when using forum			
	(4.38 ± 0.80)	(4.00 ± 1.26)	0.1388
2. Discussion made through Online Discussion using forum really contributed to my understanding of this course? (layout)			
	(4.62 ± 0.67)	(4.33 ± 0.80)	0.1243
3. It's easy to keep	p track of the content in	n an online discussion whe	n using forum
	(3.81 ± 1.03)	(4.38 ± 0.86)	0.05519
4. When I participate in online discussion using, my comment is very academic?			
	(4.48 ± 0.93)	(3.67 ± 1.20)	0.00379**
5. When I participate in online discussion using, I view other students' comment to be very academic?			
	(4.10 ± 1.00)	(3.66 ± 1.2)	0.023291*
6. I always participate in the discussion when using for online discussion.			
	(4.10 ± 1.34)	(3.76 ± 1.34)	0.1540
7. I am focus whe	n I participate in	online discussion	
	(4.33 ± 0.91)	(3.51 ± 1.33)	0.01859*
8. In evaluating what someone says when I participate in, I focus on the quality of their argument, not on the person who's presenting it			
	(4.10 ± 1.00)	(3.76 ± 1.00)	0.0921
9. I like playing devil's advocate when participating in Online Discussion- arguing the opposite of what someone is saying			
	(4.62 ± 0.59)	(4.24 ± 0.83)	0.04758*
10. When I participate usingfor online discussion, I try to point out weaknesses in other people's thinking to help them clarify their arguments.			
	(4.05 ± 0.97)	(4.24 ± 0.89)	0.2062
11. When I participate usingfor online discussion, I tend to put myself in			

other people's shoes when discussing controversial issues, to see why they think the way they do.

	(3.67 ± 1.02)	(3.86 ± 1.01)	0.2393	
12 . I always get motivated to participate in the discussion when using for online discussion				
	(3.95 ± 0.80)	(4.10 ± 0.77)	0.3011	
13 . I always participate in the discussion when using for Online Discussion				
	(4.10 ± 1.34)	(4.10 ± 0.83)	0.1540	
14 . When I participate in online discussion using, I find it more comfortable to reply to other students' comments				
	(3.90 ± 1.00)	(3.86 ± 1.15)	0.4370	
15 . When students participate in online discussion using, their comments are focus on the ideas of the discussion and not for socializing				
	(4.10 ± 0.94)	(4.24 ± 0.83)	0.24017	



Figure 4. Items that has significant relations.

As shown in Table 1, out of all the 15 items, 4 items were statistically significant. In a more presentable ways, Figure 4 shows these four items.

- Students responded to item 4 "When I participate in online discussion using _____ my comment is very academic?" with a mean of 4.48 using forum available in Moodle and 3.67 using Facebook module in Moodle (p<0.01)
- Students responded to item 5 "When I participate in online discussion using ______, I view other students' comment to be very academic," with a mean of

4.10 for forum module available in Moodle, and 3.66 for Facebook module (p<00.05).

- Students also responded to item 7 "I am focus when I participate in ______ online discussion," with 4.33 to forum module and 3.51 to Facebook module (p<0.05).
- Students also responded to item 9 "I like playing devil's advocate when participating in Online Discussion- arguing the opposite of what someone is saying," with a mean of 4.62 for forum module and 4.24 for Facebook module (p<0.05).

Conclusion

As most previous studies observing two different platforms, Facebook and Moodle, This study obtained a conclusions of using two different ways of asynchronous participation in online discussion both available in one platform (Moodle).

When using the forum module for online discussions, students view their comments to be more academic than using Facebook module for online discussion in Moodle. Which is also correlated to when students view others comments, comments through forum module were still more academic. Which means, when students using forum module for online discussion, they are focus and made sure their comments were academic. Students engage by asking follow-up questions to others is another sign of their focus when using forum module for online discussion.

Future Works

As for the future work, other factors will be evaluated by teachers and administrators such as assessment, evaluation, etc.

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Faculty Members' Opinions toward Faculty Administration in Dharmacracy in Rangsit University

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Abstract

The objectives of this research were (1) to study faculty members' opinions toward faculty administration in Dharmacracy and (2) to study the differences of personal factors in faculty members' opinions toward faculty administration in Dharmacracy. The research samples were 250 Rangsit University faculty members. The data collection tool was a questionnaire. The data was analyzed via descriptive statistics which were frequency, percentage, means, and standard deviation to describe and summarize the data. Analysis of Variances (ANOVA) was used to study the differences between independent variables and dependent variables. The statistical difference was set at 0.05.

The results showed that most of the samples were female, aged between 31–40 years, employed in a teaching position, educated at the master degree level, with work experience between 5–9 years, and associated with the faculty of business administration. The understanding level of Dharmacracy was at the mean of 4.28 out of 5, rated as very understanding. The level of opinions toward the faculty administration in Dharmacracy was at the mean of 3.94 out of 5, rated as agreed. Differences in personal factors, work experience, and faculties statistically significantly affected the opinions toward faculty administration in Dharmacracy.

Keywords: Dharmacracy, Good Governance, Rangsit University



Introduction

"Dharmacratic society" is an equal society where democracy, virtue, ethics and Dharmma are centered. It is a society where money is not important. The benefits of the people are emphasized but number of people is not. If considering the principle, the above meaning demonstrates a good, desired and ideal society. However, it seems to be an intangible matter. This is an ideal society because there has been strong materialism and consumerism in the current society. As a result, it is questioned about characteristics and elements of Dharmacratic society. In addition, whether it is able to create and how to build Dharmacratic society solidly are doubted. A successful guideline to build such society solidly is to demonstrate concrete sample through various media continually, use Subdistrict Administrative Organization (SAO) and Provincial Administrative Organization (PAO) mechanisms to dissimilate knowledge and use educational institutions for training (Woravit Avirutworakul, 2009). Universities are higher educational institutions which play roles in producing quality human resource for the country. Rangsit University is one of the educational institutions which has a mission for Thai society, is determined to build the youth and the country under Dharmacracy. Rangsit University aims to enhance knowledge, product graduates to serve and participate in the public and foster Dharmacratic society to become successful within 10 years since 2009. Rangsit University should create Dharmacratic society from internal organizations in both administrative and teaching aspects (Dharmacratic Society Committee, 2009). This policy is supported by Prof. Dr. PrawetWasi, a senior citizen and one of Rangsit University Council committees. He states at Rangsit University Academic Conference 2010 that an announcement of being a Dharmacratic society of Rangsit University is a good idea essential to development through focusing on Dharmma. Dharmma refers to rightness occurring from proper behaviors. It is a good matter with sustainability, normality and happiness (Retrieved from http://www.atnnonline.com, on 9 August 2011).

A research project titled "Faculty Members' Opinions toward Faculty Administration in Dharmacracy in Rangsit University" has initiated to respond to the mission and determination to create Dharmacratic society and to expand the results among universities. Rangsit University is an educational institute which has formulated the policy about building Dharmacratic society. The university aims to increase knowledge about Dharmacracy and dissimilate knowledge which raises awareness of Dharmacracy and Dharmacratic society, how Dharmacracy ensures the people's fairness and happiness and how to build Dharmacracy solidly. As mentions above, the researcher is interested in investigating Dharmacracy, opinions of personnel being a part of Dharmacracy and effective application of Dharmacracy in faculty administration in Rangsit University. The study could provide useful data and be a guideline for university administration in Dharmacracy in the future.

Objectives of the research

1. To study faculty members' opinions toward faculty administration in Dharmacracy in Rangsit University

2. To study the differences of personal factors in faculty members' opinions toward faculty administration in Dharmacracy

Research hypothesis

Faculty members with different demographic data have different opinions toward faculty administration in Dharmacracy.

Conceptual framework



Research methodology

1. Population and sample

The population in this study included 1,335 academic personnel who taught at different faculties in Rangsit University. The sample of the study included 308 lecturers with reliability at 95% (Yamane, 1973). The sample was selected by Stratified Random Sampling.

2. Research instruments

Questionnaires were utilized to collect data. The questionnaires were divided into parts as follows.

Part1 Demographic data including gender, age, position, education and experiencePart2 Faculty members' opinions toward faculty administration in Dharmacracy inRangsit University

The study applied 10 principles of Dharmacracy to define variables for faculty administration in Dharmacracy. The variables included; 1) Effectiveness; 2) Efficiency; 3) Responsiveness; 4) Accountability; 5) Transparency; 6) Participation; 7) Decentralization; 8) Rule of Law; 9) Equity and; 10)Consensus Oriented. Questionnaire items in Part 2 were 5-Rating Scale. That is, 5 refers to totally agree and 1 refers to totally disagree.

3. Data analysis

3.1 Personal factors of the respondents were divided by demographic data including gender, age, position, education and experience. The collected data was analyzed by frequency and percentage.

3.2 Opinions of personnel in Rangsit University toward administration in Dharmacracy. The collected data was analyzed by mean to show levels of opinions toward administration in Dharmacracy.

3.3 Hypothesis testing, opinions of personnel in Rangsit University toward administration in Dharmacracy were analyzed by t-test and One-way analysis of variance.

Results

1. Demographic data

The data show that a majority of the sample were females. 146 participants or 58.4 percent were females. 91 participants or 36.4 percent were between 31 - 40 years old. 198 participants or 79.2 percent were lecturers. 160 participants or 64 percent graduated master's degrees. 76 participants or 30.4 percent had 5-7 years of experience. A majority of participants which included 32 participants or 9.2 percent were from a faculty of Business Administration.

2. Faculty members' opinions toward faculty administration in Dharmacracy

The study reveals that overall faculty members' opinions toward faculty administration in Dharmacracy were at a high level with an average of 3.94. The average was ranked as follows. 1) Effectiveness was 4.04; 2) Decentralization was 4.03; 3) Responsiveness was 4.00; 4) Rule of Law was 3.95; 5) Accountability was 3.91; 6) Transparency and Participation were 3.91; 7) Equity and Consensus Oriented were 3.91 and 8) Efficiency was 3.86

Administration in	Gender	Age	Position	Education	Experience
Dharmacracy					
Effectiveness	×	*	✓	×	~
Efficiency	×	*	*	~	~
Responsiveness	×	×	*	×	~
Accountability	×	~	*	×	~
Transparency	×	~	*	×	~
Participation	×	~	~	×	~
Decentralization	×	~	✓	×	~
Rule of Law	×	×	✓	×	~
Equity	×	~	~	×	~
Consensus-Oriented	×	~	~	×	~
Summary	×	×	*	×	~

3. Summary of hypothesis testing

* Refer to Difference on demographic data not affecting opinions toward administration in <u>Dharmacracy</u>

✓ Refer to Difference on demographic data affecting opinions toward administration in <u>Dharmacracy</u>

Discussion

It was found that the faculty members in Rangsit University had understanding about Dharmacracy at a highest level and had opinions toward their faculty administration in Dharmacracy at a high level. This covered both overall and individual aspects. Of the 10 items, an average of the first three ranked items included; 1) Effectiveness; 2) Decentralization and; 3) Responsiveness. The results could be one of indicators which identifies success of building Dharmacratic society of Rangsit University in the past 5 years. In addition, the results demonstrate that only policy for structural development and Dharmacracy administration mechanisms are not sufficient to drive the university to become Dharmacratic society where the principles, rightness and virtue are focused if the people in the society lack righteousness in management, administration and participation. This is consistent with a study of Intarat Yodbangtoei. The study stated that to create good governance requires good administration mechanisms and to enable the people in the society to have righteousness in administration and participation (Intarat Yodbangtoei, 2006)

The results about faculty members' opinions who did not hold faculty executive positions show that the executive board had administration in Dharmacracy at a high level. This means that the executive board and the faculty members had characteristics of Dharmacracy. They followed the principles of righteousness, virtue, the benefit of the public and made decision wisely without focusing on a majority that was not justified. This supports the principles stated by PhraPhromKunaporn (PorOrPayutto) and PhraDharmakosajarn (Prayuth Dhammacitto) in Dharmacracy and Administration in Dharmacracy.

Suggestions for further studies

1. Population should be further expanded by collecting data from population in universities so that data on administration in Dharmacracy can be obtained and related to Dharmacratic society in institutions.

2. A relationship between administration in Dharmacracy and happiness of personnel in Rangsit University should be investigated.

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Power, Networks and the Making of Place: Cartography of a Blog

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Abstract

The interdisciplinary liberal arts subject, *Our Space: Networks, Narratives and the Making of Place,* incorporates digital technologies as part of a blended learning and digital literacy strategy. Influenced by network philosophy and theories, this first year subject critically analyses the power of networks across the plateaus of people networks, food networks, nature networks, and networks of things. It simultaneously requires students to engage, and critically analyse, digital social networks.

The subject is taught across a networked university which consists of three tropical campuses, two in the north of Australia and one in Asia. This paper addresses the Singapore campus where students are engaged in networked learning spaces that are designed to encourage peer collaboration both in the class, as well as extend learning beyond the classroom to cyberspace. The subject's blog assessment is the site of cartographic analysis used in this paper.

The blog site itself forms a network that demonstrates students' critical engagement with theories, concepts and topics, as well as peer-to-peer engagement through anonymous posts and comments. This paper undertakes a cartographic analysis of the blog. Firstly we employ digital analytics to map the networks of this virtual learning community; secondly we create a word map of blog posts and comments to graphically demonstrate clusters of ideas; and finally, drawing on specific examples from the blog posts we demonstrate how the students themselves engage theories and concepts of the subject to analyse their empowerment and sense of place as they transition into university.

Keywords: network theories, cartographic analysis, digital literacy, Liberal Arts, blogging, tropical Asia, First Year Experience

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Introduction: C21 networked education

As the world entered the new millennium we encountered simultaneously the 'Asian century' (Robertson & Lundberg, 2013), and the century of globalized, networked societies. In turn, higher education is of central importance in today's networked and globalised landscape especially as the world moves towards knowledge-based economies (Geerlings & Lundberg, 2014). This economy requires graduates with the creative and innovative ability to be able to draw ideas together, to connect and be connected. The emphasis in education is increasingly moving towards connectivist learning.

At the same time Not only has Asia increasingly become a geographic region for offshore branch campuses of Western (as well as a growing number of Eastern) Universities, learning spaces within higher education are getting connected both in the classroom and through virtual domains (Lundberg, 2013a).

Similarly, as we encounter an increased awareness of the intricate webs of ecological systems philosophers have been turning to images-of-thought inspired by nature; one such image is the rhizome (Lundberg, 2013a, 2013b). In turn, these theories affect the way we understand the dynamics of power.

Network Science Theory

Theorists of networks are not merely distanced observers writing *about* networks, they are engaged *with* the new 21^{st} century technological environment. New technologies have both ontological and epistemological affect; they affect our ways of being in the world and of knowing the world. In this regard, the world wide web, wireless technologies and online digital platforms have changed our everyday life as well as influenced theoretical work in network science.

New network science was firmly established at the beginning of the millennium through synchronous work published by Albert-László Barabási (2003) in the field of physics, and Duncan Watts (2003) and Steve Strogatz (2003) in mathematics. Network science elucidates the properties of networks on and across multiple plateaux, including: neural networks, food networks, transport networks, financial networks, telecommunicatons, the world wide web, viral networks (virtual and medical), ecology, and social networks (Buchanan, 2002).

Network science theory has also been engaged with in interdisciplinary projects in humanities and social sciences. It forms the thematic basis of a core first year Bachelor of Arts subject, *Our Space: Networks, Narratives and the Making of Place* (Lundberg & Kuttainen, 2011-2015), at James Cook University, which appropriately, at the university's offshore campus in Singapore, is tutored in the new 'networked' classrooms (Lundberg, 2013a; Carter, Teoh, Bhati, & Lundberg, 2014).

In turn, the network theories taught in this subject have lead to interdisciplinary research projects. These include, for instance: interpreting experiences of students on exchange through a discourse analysis of their blog posts (Lundberg, Stasiewicz-Bieńkowska, & Enhörning Singhateh, 2012); demonstrating the connections of the TransOceanik research network, a LIA (*Laboratoire International Associé*) of the

French CNRS (*Centre National de la Recherche Scientifique*) in association with the Laboratoire d'Anthropologie Sociale of the Collège de France and The Cairns Institute at James Cook University (Lundberg, 2013b; Lundberg & Glowczewski, 2015); critically engaging the design space and connectivity of a networked classroom (Carter, Teoh, Bhati, & Lundberg, 2014; Lundberg, 2013a); and analyzing how networks can be used to empower women's space (Lundberg, 2015).

Crossing between disciplines is not anathema to Network Science. Indeed, the scientists' inspiration for their theory came from a social psychology experiment devised by Stanley Milgram in the 1960s. To understand how people are linked in webs of connections, the psychologist used the postal network to demonstrate that people could get a letter from one place and person, to an unknown recipient in another location, in approximately six relay postings. This became known as six degrees of separation. In the late 1990s Watts and Strogatz were profoundly shocked by the idea that over six billion people could be linked through just six connections. The scientists' aim was to model this phenomenon through a mathematical graph (Buchanen, 2002, pp. 14-15; Hilton and Talas, 2009). The graph revealed that the notion of six degrees of separation is a 'small-world' network. Links between people are not spread out evenly; social life clusters. The networks of transportation, internet, economics, biology and ecology likewise present small-world phenomena. In each network, most nodes are linked to only a few other nodes. But some nodes have lots of links. These hubs shorten the paths between all the nodes in the entire network. An important principle of six degrees is that it is not about strong connections; significantly, weak links make the connective leap from one cluster over to a whole new cluster in the network.

Furthermore, links from different plateau can leap one to another. For instance, while our evolutionary and taxonomic science tells us that chickens, viruses and humans are separate categories; bird flu demonstrates that viruses link birds and humans, they cross species. In turn airlines become carriers of avian flu, airport hubs are potential nodes in epidemics. The same features are likewise at play in cyber viruses.

Cartography – a principle of Rhizomatics

Network science theory, in turn, resonates with the network philosophy of rhizomatics developed by the philosopher Gilles Deleuze and psychoanalyst Félix Guattari in their introductory chapter to *A Thousand Plateaus* (1987 [1980]). It is an image of thought based on the botanic rhizome. In the tropical setting of James Cook University's Singapore campus, the theory evokes images of ginger, bamboo and sympodial orchids.

Rhizomatic theory and research allows for multiple, non-hierarchical entry and exit points in analysis and presentation of artefacts and thought. It necessitates connection and heterogeneity where any node of the rhizome can connect to any other (Deleuze and Guattari, 1987, p. 8). The underground root of the ginger is transversal with nodes connecting to other nodes in all directions, like labyrinths with multiple entry and exit points.

Rhizomatics argues for multiplicity. There is no origin to be divided into binary hierarchies. "A multiplicity has neither subject nor object, only determinations, magnitudes, and dimensions..." (Deleuze and Guattari, 1987, p. 8).

Rhizomes rupture. Shattered at a particular point only to start up again on an old line, or form a new one. If we break off a node of ginger and shove it in the ground elsewhere, it forms a new network. Creating another labyrinth.

The rhizome saps the pervasive Western botanical-philosophical image of the tree: evolutionary trees, genealogical trees, the tree of knowledge – biblical and educational. The aboreal image of knowledge conjures up notions of original oneness (tap roots); linear growth (trunks); and bifurcating disciplines (branches). While an arborescent model works with linear development, rhizomes indicate horizons and connections. Knowledge in this scenario is like the world wide web where links lead to links, to broken links, to be taken up in new links within links.

As Brian Massumi notes, Deleuze and Guattari create an image of "a rhizome network strangling the roots of the infamous tree" (1987, p.ix). However, the theorists are not simply anti-tree; in fact, the banyan tree of the tropics, also known as the strangler fig, is a spectacular example of rhizomatic imagery (Lundberg, 2008, pp. 9-10).

Deleuze and Guattari's principle of cartography allows for open-ended mappings of the blog posts and comments. Cartography is a characteristic of the image-based philosophy of rhizomatics, which demonstrates multiplicity and non-linearity. In this philosophy, de- and reterritorialisation are processes of intrinsic change that, like rhizomes, push and pull in multiple directions – potentially rupturing into lines of flight.

Map the blog posts and comments through the principle of cartography.

The principle of cartographic does not aim to trace a linear progression – of one thing leading to another; rather, mappings demonstrate and ecology of blogs and comments and thinking which is immanently open to change. Philosophy of rhizomatics and its principle of cartography suggest theoretical and empirical angles through which the blog posts and comments can be entered into and studied.

Blog Assessment

In weekly posts students reflect upon the six key concepts of the subject: power, space-place, reality-virtuality, communication, self-community, and exchange. These concepts are mapped through case studies of: people networks ranging from diasporas to slavery to protest movements; food networks including trade routes, foodways and changes in cuisine; nature networks, for instance ecosystems, pollutions and viruses; and the network of things as they relate to the movements of markets and post-fordist manufacture, for instance. Throughout the subject there is an emphasis on how power operates through networks and also an emphasis on thinking how they operate in both virtual and reality domains.



Figure 1: Subject blog site.

Over a period of six weeks each student makes a weekly blog post and comments on another student's post. For each blog post they apply concepts from the week's lecture and the theory or case study reading to an analysis of a social network (either real or virtual) that they encounter in everyday life. They must also include in their blog post at least one relevant image and one hyperlink to a relevant online site. All images and references to other works need to be referenced.

Students are also required to make a short comment on at least one other student's post to demonstrate their academic peer engagement with other students' ideas. Blog comments are expected to engage at a scholarly level, and contribute to the other student's ideas by offering further analysis by connecting back to the subject lectures, theories, content, concepts or any of the set readings. At least one reference to a lecture or set reading is required for each comment. Over a designated period of 6 weeks, students make six blog posts and six comments on another post creating a web of networked ideas that involves them in scholarly practice and creates a shared resource for their future assessments in the subject.

Blogs are anonymous, each student creates their own blog avatar. Avatars not only offer anonymity through a different face; they can offer empowerment to first year students learning to find their scholarly voice.

Conclusion

Cartography of a blog



Figure 3: Map of comments on posts - numbered



Figure 4: Map of directions of network posts



Figure 5: Map of directions of network posts



Figure 6: Map of individuals (avatars) and concept networks



Figure 7: Word graph for all six concepts (Wordle)

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SIMPLE-O, the Essay Grading System for Indonesian Language Using LSA Method with Multi-Level Keywords

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Abstract

Evaluation is a very important tool in measuring students' level of understanding, whether in e-learning or conventional studying system. Essay is one of the evaluation which to determine students ability where choices are not provided. Students have to answer by sentences, so then it could be various based on their opinion, since it reflects the student's best thoughts of the materials. Today, automatic grading essay is an its development, the system is more efficient and more effective in essay grading especially in maintaining fairness. SIMPLE-O, web based automated essay grading system, has been developed in Electrical Engineering Department, University of Indonesia, using Latent Semantic Analysis (LSA) method for Indonesian Language. This research was conducted by providing modifications with using multi-level key words to increase accuracy when compared with human raters. The results obtained in small classes, agreement with human raters are above 86%

Keywords: latent semantic analysis; essay grading;

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Introduction

The prevalence of e-learning in Indonesia especially in Universitas Indonesia has promote a rapid adoption of e-learning system throughout the University (Ratna, 2006). One aspect of e-learning which is often forgotten is evaluation (Valenti, Neri, & Cucchiarelli, 2003). Essay, while being one of the most versatile evaluation method, is rarely used in e-learning system due to the fact that automated grading is not commonly available (Ratna, 2006). Automated essay grading is very important to maintain fairness and efficiency (Lawrence Rudner & Gagne, 2001). Since 2007 has developed the system which Simple-O is web based automated essay grading system developed specifically for Bahasa Indonesia with its unique properties in mind, in contrast with most available solution which is developed for English speaking test takers (Ratna, 2006).

Assessment is very important component in every education system to evaluate student understanding of the whole study materials. There are two main forms of assessment questions: objective form and essay form. Objective type of question is multiple choices with several answers available to choose. Essay is one form of evaluation where the option of answer is not provided, and student must answer in sentence, thus the answers may vary depending on each student's thought. Essay grading also remains as an option for teacher to evaluate student's ability, even though it is not easy to give an objective judgment to every student in essay grading. Essay considered as a powerful tool to achieve studying result by many researcher, also to evaluate the thinking ability in high level such as in synthesis and analysis (Lm Rudner & Liang, 2002).

In e-learning system, an examination can be conducted online, from answering to grading the exam. It gives benefit to the teacher and the student because the on-line examination process becomes more effective & efficient. Another benefit is that evaluation system with the help of computer gives faster and more accurate grading results (Landauer, Foltz, & Laham, 1998; Lawrence Rudner & Gagne, 2001). Moreover, this system can also handle classes with great amount of students.

Online assessment has developed and implemented in Electrical Engineering Department in Universitas Indonesia for quite a long time (Ratna, Hartanto, Ekadiyanto, & Narita, 2002). However automated essay grading in Indonesian language was not available yet.

Bahasa Indonesia

Bahasa Indonesia has a simple structure compared to English and does not require changes in plural, gender, or time. There is no difference in plural and singular objects in Bahasa Indonesia and it only needs to put additional word to identify the plurality. For example: child = *anak*, children = <u>banyak</u> anak. The word "banyak" identify plural and it is actually can be translated into the word "many". The noun itself, "anak" does not change at all. In different time tenses, the verb does not change and it only need to characterize the time by using time marker word, for example yesterday = *kemarin*, tomorrow = *besok*, and next month = *bulan depan*.

Bahasa Indonesia is a national language in Indonesia. This is the language to unite the nation and become a middle way in communication. Indonesia is a country that has thousands of islands and every island have their own characteristics in culture as well

as language. Bahasa Indonesia can be divided into several major categories. The main categories are standard language and daily language. And just like other language, there are writing language and speaking language.

In each islands, there are many small cities. Beside using and learning Bahasa Indonesia, the villagers also have their own mother language. Since elementary school, every student is taught Bahasa Indonesia as one of subject. However, this language is only used in formal situation, while for daily activities villagers usually use their own local language. In several provinces, although they have the same local language, their dialects are sometimes different. From the dialect, people can be distinguished from which city they are coming from.

In some local language, there are subtle and harsh language. When talking about the harsh language and subtle language, we cannot separate them from the history. For example in Java language, long time ago, subtle language used by the royal and his descendants. The intellectuals, aristocrats and local leaders also use subtle language. While the harsh language used by ordinary people. The differences in the language that used by the class differences eventually make a difference in the local language of the particular area. For example, the language that used in Solo or Yogyakarta. In those cities, there were kingdoms that used subtle language in their daily live. Because their ancients use subtle language, people in those cities also used it until now. For some local language, there are also class of language which differentiate the choice of words to use, e.g. when talked to respected people (for example to teacher or parents), to people in the same position (for example friends and siblings), and to people in lower position (for example to a house cleaner).

Aside from the local language, the language commonly used in daily conversation is slang. Slang is the language used by young people to communicate with each other informally. Slang words or styles are derived from many sources, e.g. from foreign, local or a twist from the original standard Bahasa Indonesia. Example for slang that originates from the standard language are *sudah* becomes *udah*, *hujan* becomes *ujan*, and *pahit* becomes *pait*. Not like standard Bahasa Indonesia, slang words and styles are easily changed over generations. It is unexpected to use slang in formal situation. However, youngsters are often forgotten or unconsciously use it in the classroom.

The challenge for essay grading system for Bahasa Indonesia may not comes from the language structure, because as already mentioned before, structure in Bahasa Indonesia is simple. The challenges are mostly coming from the students' culture and evolution of the language that comes from local, foreign, dialect, style and slang words. The pressure of exam itself gives more challenge, because it often contributes to the non-standard style language used by the students, for example the object and subject becomes interchanged, or the active and passive verbs becomes wrongly used.

Universitas Indonesia

Universitas Indonesia (abbreviated as UI) is one of the top universities in Indonesia, located in Depok, a city belongs to West Java Province but located in the suburbs of Jakarta, the capital city of Indonesia. UI has 14 faculties, 1 vocational school, and postgraduate school. Each faculty has many departments. UI students come from all over Indonesia. About half of them comes from neighboring cities of Depok and

Jakarta, and the rest migrates from their local residence from all over islands and provinces in Indonesia.

The non-local students who migrates from their city/village will normally assemble and form associations that consists of other students who came from the same area. The association is an excellent platform in the process of adaptation in their new environment and their new status as a university student. Many of the seniors who came from the same city helped the junior as a new student in adapting the environment; from finding a place to stay, where to eat or shopping with low budget, until the lectures problem. It certainly makes bonds held around becomes very strong. In communicating within the community, the students from local area often use their local language support. Although they often use their local languages, they still use Indonesian in communicating to other students or faculty.

Online academic system in Universitas Indonesia

In UI, there is a web based online system which serves the whole academic information for students, teachers and administrative, namely SIAK-NG. In this web application system, students are required to fill their academic plans independently for each semester. The teachers upload students grades during and at the end of the semesters. Administrative and teacher can monitor the academic status and achievement of the students. By using this system, students and academic supervisor can also interact and communicate with each other during the academic registration period every beginning of a semester.

In addition to SIAK-NG, there is also an e-learning web application that is used by students and lecturers in the teaching and learning process, namely SCELE. This web application serves as a media for the faculty to share the lecture material, conduct regular tests, or exams and the place for students to upload assignments, and to discuss materials in a forum provided by the teacher. SCELE provided several type of assessment for example multiple choices, true/false, short answer, and essay. Not like the other exam, essay can not be graded automatically by the system. This is unfortunate because for teacher, essay is often the most preferable type of exam. This become the background of our work, to automate the grading of essay.

SIMPLE-O (SIsteM PeniLaian Esai – Otomatis) is a web based automated essay grading system developed specifically for Bahasa Indonesia with its unique properties in contrast with most available solution which is developed for English speakers (Ratna, 2006). SIMPLE-O uses Latent Semantic Analysis (LSA) method (Landauer et al., 1998) to evaluate the students' essay exam answers. LSA compare a text with the words chosen as a reference. LSA represents the words in a text in a semantics matrix, which is Term-Document matrix (TD Matrix). LSA use matrix algebra technique known as Singular Value Decomposition (SVD) to get information from the text. Vector analysis is conducted in reduced space to retrieve similarity between text.

Latent Semantic Analysis (LSA)

LSA is a technique to extract and represent sentences with mathematical or statistical calculation. The strength of the LSA technique lies in the syntax structure insensitive, thus the words processed are words from a bag of words ignoring the sequence of the sentences. LSA express the ideas about the meaning of the word, where words are

occupying a position in semantic space and the meaning is the relationship between one sentences to another [3].

Assumptions that underlie LSA are that the similarities and differences in the meaning of words can be influenced by the similarities and differences in the overall context in which the word is there or not. Conversely, in the meaning of the sentence can be verbal outline of the combination (in the form of mathematics) from the words within it. This assumption implies that usually the dominant verbal meaning is based on the selection and combination of words in the speech. And for various purposes, the order in a text can be ignored in the sense to estimate similarity with only slight loss of accuracy. Thus the assessment of any text with the LSA more emphasis on the words contained in any text without notice a linguistic characteristics, such as grammar, how to write, and order of words in a sentence, therefore a sentence does not require a good rhetoric.

To apply to the basic assumption in computing systems will require a model where the word is a representation of mathematics function as a set of the observed linguistic context, and representation of linguistic context is a mathematical function of the words that are in it. In LSA, the linier function between word and meaning of text and linier factorization are used to construct text into the form of high dimension vectors. In LSA, the text is a combination of the vectors containing the words, and words are the meaning of the vectors from the observed text. Computation form that is used in the LSA is an algebra method of Singular Value Decomposition (SVD) matrix, continued with the dimensional reduction.

Singular Value Decomposition

Singular Value Decomposition (SVD) is a mathematical matrix decomposition technique. Matrix formed from whether there is or there isn't a specific word appears in a text (usually already defined as keywords). This matrix by Singular Value Decomposition divided into 3 (three) matrices [3]. In reconstructed matrix from decomposed matrix using SVD will be seen strong correlation between topics or sentences joined in a specific group.

After the 3 matrices are obtained, the next process is reducing matrix dimension by reducing the second matrix dimension, a diagonal matrix. Reducing the dimension of a diagonal matrix is performed by setting all diagonal values of the second matrix into zero (0) except for certain chosen dimension. And if the three matrices components are multiplied, it will produce other reconstruction matrix for desired correlation value purpose.

Mathematically, a matrix can be well decomposed if it has small factor value compared to smallest dimension of the original matrix. Thus, the best matrix reconstruction will be obtained when the factor value is smaller than the sum of factor used.

Modification for LSA in SIMPLE-O

The original LSA was made for long essay or document and it is tested for English. In our research, we modify LSA so that it can be used for analyzing and grading short essay as in question-answer essay that is often preferable in exam. And also we tried to modify LSA so that it can be useful for analyzing answers in Bahasa Indonesia. For the first modification, instead of using a large corpus for building term document matrix, multiple matrices with similar dimension is used, so that it has lower calculation overhead. Secondly, key term is used instead of including all term in TD matrices. By doing this approach, the sensitivity for short essay is increased. Furthermore, we also use multilevel key term to increase accuracy. The complete proposed algorithm is as follows:

- 1. A lecturer may create a question and define the "golden answer" which is then submitted to the system.
- 2. The answer then is preprocessed and a statistical information for each term is gathered
- 3. Preprocessing includes punctuation marks removal, stop word removal, similarity check, etc.
- 4. Each unique term occurrence is counted and has its location noted, then this information is stored in database.
- 5. Key-terms are any terms appear in the "golden answer" which are considered important by the lecturer.
- 6. A key-term may not be a member of stop words.
- 7. Most important key-terms are member of ordinary key-terms which are very important.
- 8. The "golden answer" vector, which is the output of the SVD process, is stored in the database. This pre-calculated vector is then compared with all student answer's vector.
- 9. Each student score is then stored in the database for future use.

There are 3 main entity of the systems, which are user, teacher and the system itself. Therefore to see the interaction between each entity can be seen through activity diagram in Fig 1.

In the current implementation, the algorithm is entirely implemented in PHP. This is to ensure portability of the program. The SVD calculation is done in Java Matrix port on PHP. The ADOdb is used as a database abstraction layer which further improves the portability. MySQL is the default database choice. The current implementation will run on PHP version 5.0 or higher, Apache version 2.0 or higher and any database server supported by ADOdb 5. For the Graphical User Interface (GUI) we design the system based on Bootstrap framework. The example of SIMPLE-O GUI can be seen in Fig. 2.



Fig. 1. Activity diagram for SIMPLE-O

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Fig. 2. Example of SIMPLE-O graphic interface for the teacher when editing question and answer

Experiment and Results

In order to measure the performance of the system developed, we conduct 3 experiments and testing, which are:

- 1. Human-rater agreement. In this experiment, we measures the average correlation between system score and human raters score. This can also be seen as the accuracy of the system, which is a quantitative assessment of the system.
- 2. Processing time. In this experiment, we measure the average time needed by the system required to grade a student answer. This is also a quantitative assessment.
- 3. User Experience. In this experiment, we measure the satisfaction of the system user. This experiment is a qualitative assessment for the system.

All experiments were conducted in a computer lab as an online exam scenario with 40 student as participant and 3 lecturer who gives scores as a benchmark scores.

As a result for the first experiment, Fig. 3 shows that for varied number of keywords, 5, 6, 7 and 8, the agreement with human rates are stable, about 88.13 - 86%. The usage of multi level keywords is proven to succeed in increasing the accuracy into 93.94 - 95.88%.

As the result for the second experiment, the number of words in the answer provided by te students are contributing to the longer processing time by the system.



Fig. 3. The effect of number of keywords to human raters agreement





Fig. 4. The effect of number of words to processing time



In the last experiment, we measure the user acceptance and satisfaction of this system. By looking at Fig. 5, it can be seen that For the functionality and ergonomy, this system is considered good. However in responsiveness and aesthetic the system should be improved.

Conclusion

This work in progress has demonstrated the possibility to build an automated essay grader which is optimized for Bahasa Indonesia. More than 86% human raters' agreement can be achieved with Simple-O. We still have some future work, which is to speed up computation process by streamlining the algorithm, improve human raters agreement, and explore the system behavior on many different kind of test.

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Using Google Documents to Enhance Peer Editing

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Abstract

Two common goals of EFL writing instructors are to foster collaborative writing and to encourage students to develop independent peer-editing skills. One of the most commonly cited deficiencies in EFL writing, however, is that students tend to depend too heavily on feedback from their teachers, especially within cultures that are teacher-centered. Also, students often view peer editing as impractical and ineffective since they often have trouble identifying mistakes in their own work. The researchers used Google Documents to conduct action research encouraging students to become more active learners and create a more interesting, practical, and up-to-date approach to the traditional peer-editing process. Google Documents is a cloud based word processing program that allows students to share writing and collaborate in real time via the Internet.

Keywords: education, technology, peer editing, Google Documents, collaborative writing, EFL

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Context

The present study used action research to investigate the perceptions of 41 universityaged English language learners in Thailand regarding the effectiveness of using Google Documents as an instructional tool. Currently, teachers are challenged with meeting the needs of contemporary students by providing materials that are not only engaging and up-to-date but also useful tools for instruction. The researchers believe that peer editing in real time is an interesting way for students to improve their language skills, and that it is perceived as more effective than traditional peer-editing, i.e. using pen and paper or a word processing program such as Microsoft Word.

Within Thailand, both the government and members of the private sector invest heavily in education, and the country now has a literacy rate of over 93% (Kirkpatrick, 2012). Furthermore, the majority of students receive more than nine years of schooling, and even as far back as 2007, there were 2.4 million students who completed bachelor degrees and 16,000 who obtained doctorates (Kirkpatrick, 2012).

Also, educators in Thailand widely agree on the importance of English on the economy. Hengsadeekul, Hengsadeekul, Koul, and Kaewkuekool (2010, p. 25), for example, wrote:

Today, with Thailand's role in the international trade, the English language is needed for Thailand's economic survival. — It is no longer a matter of preference; it is a matter of necessity. Significantly, English is a powerful vehicle for carrying on international business, strengthening the economy and improving technical knowledge.

In response to the need for proficient users of English in Thailand, Mahidol University International College established the Preparation Center for Languages and Mathematics (PC) in 1998. The center has four levels of English language classes that range from pre-intermediate to upper intermediate. The students enroll in ten-week intensive English language classes with class sizes ranging from 18-25 students. Most have recently finished high school and come from a wide variety of educational backgrounds. PC has a modern institution-wide Wi-Fi system, and students are required to bring laptops to all their classes. Furthermore, the center has a Google Apps for Education account that includes unlimited cloud-based storage.

Online collaboration is of crucial importance as a 21st century skill and can be improved with Google Docs. This is an online word processing application that equips users with the abilities to create, share, store and collaboratively edit written documents. In addition, Google Docs allows educators to place comments in real time directly in the body of any text or in the margins of students' assignments. In addition, students can easily share their work with one another for peer editing. Peer editing with Google Docs facilitates teachers' ability to monitor the exchanges that occur between classmates during the entire editing process. As a result, a growing number of teachers are adopting Google Docs in the classroom to encourage a shift towards collaborative writing and increase the depth and frequency of peer review for a variety of assignments. Previous models of peer editing involved students exchanging hand-written assignments with their peers. Students were given a limited time frame in which to make hand-written or verbal critiques of their partner's work. The benefits of this method were limited as some students lacked the motivation to thoroughly assess their partner's work. The lack of motivation often stemmed from the fact that they were not accurately held accountable for their comments as the feedback was difficult and tedious to track. This out-dated model of peer editing can be measurably improved by integrating Google Docs into contemporary classroom writing. With Google Docs, multiple peers are able to review a document collaboratively as the revisions are visible to all. The benefits of immediate feedback are difficult to ignore as students clearly see the impact of their feedback on their classmates' assignments in real-time. Google Docs automatically records every aspect of each critique, including suggestions, highlights, and comments. Teachers also benefit as they can easily track the accuracy and breadth of each example of feedback, enabling them to ensure greater participation by all students. By requiring multiple drafts, teachers can offer comments are various stages of the writing process. Students are now held more accountable, thereby increasing their level of participation and the quality of feedback each receives.

Literature Review

Vygotsky (1978) argued that development is essentially a socially constructed activity in which a novice develops cognitively through interacting with an expert who guides learners to reach their potential. As noted by Storch (2005), this assistance is most often referred to as scaffolding. He also argues that scaffolding can occur amongst peers when working collaboratively on a piece of writing, and from the viewpoint of a social constructivist, learners should participate in activities in which they can work together to co-construct knowledge (p. 154).

Nicol (2010) posited that "feedback should be conceptualised as a dialogical and contingent two-way process that involves coordinated teacher-student and peer-to-peer interaction as well as active learner engagement" (p. 503). This notion that dialogue is vital to the learning process is widely accepted in educational literature. Building on the work of Pask (1976), Laurillard (2002) developed an influential theory of teaching and learning that she called a "conversational framework" (p. 77). Using this framework, she argued that dialogue must have four characteristics in order to be effective. It should be adaptive, i.e. changing with students' needs; discursive, i.e. filled with two-way communication; interactive, i.e. connected to completing a task or reaching a goal; and reflective, i.e. it should encourage teachers and students to examine the overall learning process (Laurillard, 2002).

However, there are also criticisms associated with collaborative writing. Commonlycited deficiencies involve inexperience of collaborators, interpersonal conflict, and apprehension due to worries of inaccuracies in editing. (Chisholm, 1990; Nelson & Murphy, 1993). In addition, it may be that the role of the writer in collaborative work remains unclear as the writing process is often viewed as an individual act (Murray, 1992). However, according to Lam and Pennington (1995), it is imperative teachers be patient in order to allow students enough time to adapt to the new skills and expectations of collaborative editing. As noted by Hughes, Thomas, & Scharber (2006), teachers are in great need of an evaluative framework for assessing the integration of technology and its effectiveness, and even though in-service teachers have a wide range of technologies to choose from, they are lacking in strategies to determine their effectiveness. To this end, Hughes, Thomas, and Scharber (2006) conceptualized the three-point RAT Framework with the following categories: (1) Technology as Replacement, (2) Technology as Amplification, and (3) Technology as Transformation (p. 1616). Within the framework, each instance of technology is examined systematically to measure whether a technology was replaced, amplified, or transformed (p. 1617). Furthermore, specific aspects of three broad themes are used to assure that attention is given to all components of the instructional event in which the technology is employed, (1) instructional methods, (2) student learning process, and (3) curriculum goals. All aspects listed under each theme in Table 1 are evaluated.

Instructional Methods	Student Learning Process	Curriculum Goals
Teacher's role	Activity task	"Knowledge" to be gained, learned, or applied
Interaction with students	Thinking process- mental process	"Experience" to be gained, learned, or applied
Assessment of students	Task milieu (individual, small group, whole- class, others	
Professional development	Motivation	
Preparation	Student attitude	
Administrative tasks		

Methodology

The participants in the study had below 550 TOEFL scores (on the paper based exam) and below 5.5 IELTS. The instructors facilitated students in their learning by explaining the mechanics of using Google Docs and allowed them as much flexibility as possible with their peer editing. Students worked in pairs to write 300- 350 word opinion essays. They then shared their work with two other pairs of students who made peer-editing comments on both the grammar (language control) and the content of the essay. The researchers designed and shared a student peer-editing template in Google Docs (see Table 2 below). The template has a set of instructions along with a grading rubric to give students a starting point for making peer-editing comments. Students were then instructed to identify and make comments on grammatical and content errors such as sentence fragments, weak topic sentences, or unclear support.
Table 2: Student Peer-editing Google Document and instructions

Peer Editing PC 2 Writing

Make a copy of this document and change the title to your nicknames and the title of your document. Then share it with <u>xxxxxx@gmail.com</u>

Type your first draft in the box below and share it with two other groups.

Using the scoring rubric on pp. 268-269 of your writing book, first check the **content** of the writing that was shared with you. Use Ctrl + Alt + M to make comments on a Windows computer and Command + Alt + M in Mac. Leave the comments and corrections to the first and second draft; I want to see them. *However, remove all the comments on the final draft.* Make sure that the writers' nicknames, your group number, and the editors' nicknames are on each draft.

First draft number below: Put your nickname/s and group

Copy the second draft of your essay in the box below and share it with a new group. (Share the first draft with one group and the second draft with another group.) Check the **grammar** of the second essay that was shared with you.

Second draft

Do one final edit of your essay and copy it in the box below. Print copies of the final draft of your writing for the entire class. Hand them out **before** class begins.

Final Draft

The researchers monitored the online peer-editing process as students made various peer-edits. In the first edit, students were asked to focus on the non-language-related comments by rating the thesis, unity, and overall development of main ideas in the essays. Questions included the following: "How clear is the author's thesis?", "Is there a central idea that is relevant and developed in each paragraph?", and "How interesting is the essay overall?". These questions required students to first look holistically at their assignments before focusing on the more specific aspects of grammar and lexis.

Upon completing their initial edit, students were then asked to edit the grammar, spelling, and punctuation. In the second draft, students analyzed writing for sentencestructure errors like fragments, run-ons, and comma splices. They also looked for grammatical mistakes with countable and uncountable nouns, verb tenses, and subject-verb agreement.

After students completed their final edits, the teacher went through each essay with the entire class pointing out which comments made in the peer-editing process were correct or incorrect. Once all the essays had been marked by the teacher, the students were given a cloud-based Google Form containing seven questions about the peerediting activity. The form asked them to provide their opinions on a five-point Likert scale ranging from "strongly agree (1)" to "strongly disagree (5)" (see Table 3 below). The form also included the following open-ended question: "What is your overall impression about peer-editing using Google Docs?"

Table 3: A seven-question survey using a Likert-scale and open-ended questions to ascertain students' perceptions of the merits of collaborative writing, effectiveness of their feedback, and the overall impact on their writing.

Results:	Mean	SA		А		N		D		SD	
		N	%	N	%	N	%	N	%	N	%
1. Peer editing in Google Docs is more effective than traditional peer editing	1.71	20	49	14	34	6	15	1	2	0	0
2. Peer editing in Google Docs made me a more independent learner	1.90	16	39	17	41	4	10	4	10	0	0
Peer editing in Google Docs helped me to improve my:											
3. ability to accurately spot and correct mistakes in other students' writing	1.76	21	51	13	32	3	7	4	10	0	0
4. grammar	2.34	10	24	16	39	8	20	5	12	2	5
5. vocabulary	2.39	10	24	11	27	15	37	4	10	1	2
6. overall writing ability	2.59	9	22	8	20	18	44	3	7	3	7
7. creative thinking	2.56	6	15	16	39	10	27	4	14	2	5

Discussion

A summary of the descriptive statistics related to means, frequencies and percentages obtained from the questionnaire are given in Table 3. As evidenced in the table, the three questions that students responded to most frequently with "strongly agree" or "agree" were: 1) "Peer editing in Google Docs is more effective than traditional peer editing." 2) "Peer editing in Google Docs made me a more independent learner." 3) "Peer editing in Google Docs helped me to improve my ability to accurately spot and correct mistakes in other students' writing." More specifically, approximately half of all respondents "strongly agreed" that peer editing in Google Docs was more effective than their previous experience with traditional peer editing. Fifty one percent of students were in strong agreement that they were able to improve their ability to identify and correct mistakes in their classmates' work.

Approximately sixty percent of respondents "agreed" or were "neutral" that editing activities on Google Docs improved their grammar and vocabulary. Forty-four percent of respondents had a neutral rating of improvements in their overall writing ability (mean = 2.59). Slightly less than forty percent of participants agreed that they were able to improve their creative thinking.

In analyzing the students' responses using the RAT framework, it can be seen that the technology "amplified" and "transformed" the process of peer editing overall. This is exemplified in the following student comments: "the most useful part was that I get comment quick." "I didn't have to download program. It was on internet." "I like getting comment from my friend on net." "I think it is really help me improve my writing."

Furthermore, the researchers feel that using Google Documents is beneficial in terms of *instructional methods* since it deemphasizes the role of the teacher allowing him or her to act more as a facilitator rather than a purveyor of knowledge. In addition, the researchers noted that *the student learning process* was enhanced in terms of the thinking process since students gained confidence as they made more comments. "At first I was not confident, but I think my comment got better." However, a few participants demonstrated hesitation and lack of confidence as shown by the following remarks: "Sometimes my friend complained about me that I had made a mistake when I not." "I worry my comments were wrong." "I didn't want to tell my friend too many mistake." "I was scared my friends will take my comments wrong way." Finally, the researchers feel that this action research project fit well with the overall *curriculum goals* to build student confidence and empower learners in a student-centered environment.

Conclusion

Overall, the researchers feel that the RAT framework was quite useful for evaluating the project. The authors are not advocating replacing traditional paper-based peer editing solely with online collaborative editing. However, the results of this action research demonstrate that students believe that Google Docs is able to enhance their awareness of common mistakes that they and their classmates frequently make, especially in the areas of content and grammar. The students claimed that by using Google Docs in real-time, they grew more confident in their ability to accurately edit a piece of writing.

It is hoped that further research will provide teachers and students greater confidence to begin incorporating more online collaboration into their lesson plans. Teachers can take advantage of the numerous pedagogical options afforded them through the use of online technologies. Subsequent research should be done to determine how best to make use of peer feedback, with its high level of interaction between writer and reader to not only enhance learners motivation and interest, but also improve writing proficiency.

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The Potential Use of Videos to Improve Communication Skills in an English Language Course

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Abstract

An important soft skill that would be advantageous for undergraduate students is the ability to communicate effectively in English in the workplace. The current study is part of a larger study which is being conducted since 2012 in a tertiary level institution in Malaysia. English is taught as a second language in Malaysia. This study looks into the use of two video recordings of two small groups of students who were enrolled for a Business and Professional Communication course. Both groups consisted of five students each. Both groups were assigned the same small group discussion activity. Each group was required to identify the main points in a letter of complaint and respond to these points. The session of 40 minutes was video recorded. Both groups of students were given a period of three days to view or review the video of their respective groups. Individual interviews with the ten students showed that there was more awareness regarding the way they, as well as their friends communicate. The issues mentioned by students included verbal and nonverbal communication. Students also gave reasons as to why they engaged in certain communicative behaviors during the small group discussion session. These included silence, attempts to give alternative views, or to agree with their friends. Finally, these information or feedback from students could be useful for pedagogical purposes to improve students' small group communication skills.

Keywords: English, tertiary level, videos, communication, pedagogical purposes

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Introduction

Similar to many universities in the world, the Business and Professional Communication course has been offered in Universiti Utara Malaysia, which is located in Kedah, a northern state in the west coast of Malaysia. Once students have completed their proficiency level courses, students from selected schools in the university are required to enroll for the Business and Professional Communication course. It comes under the broad umbrella of the English for Specific Purposes (ESP) course. An ESP course not only focuses on the language aspects of teaching English, but also on the skills and genres associated with the content area of specialization (Dudley-Evans, 2001). The Business and Professional Communication course aims to fulfill several objectives. This include the ability to use appropriate verbal and nonverbal communication skills for completing assigned tasks, prepare and write business documents effectively, conduct meetings effectively, use appropriate grammar in the communication process and more generally to be competent in the 21st century business environment. The transferable skills that that the course hopes to impart to the students include writing business documents, oral communication skills, teamwork, business ethics and problem solving skills.

Literature Review

The ability to interact competently is a very important skill (Riggenbach, 1998; Olsher, 2004; Young, 2009; Walsh, 2011). Students need to acquire interactional competence not only for academic purposes and interaction with their fellow students but also for communication when they join the workforce. Students will need this soft skill to progress in their career and communicate effectively to achieve positive outcomes in the process of problem-solving.

Many definitions have emerged regarding interactional competence (Kramsch, 1986; Young, 2008; Young & Astarita, 2013). Young (2008) defined interactional competence as "a relationship between the participants' employment of linguistic and interactional resources and the contexts in which they are employed" (p.101). An important aspect of interactional competence is that it is local and context specific. Young (2003) used the term 'interactional resources' in the realm of interactional competence to include interactional strategies. Examples of interactional strategies include turn taking, keeping the discussion on track, managing topics, and signaling boundaries. Markee (2008) emphasizes the importance of verbal communication, non-verbal communication and semiotic systems.

Many studies have been conducted on the use of videos in teaching English as a second language, improving communication, or generally in the teaching and learning process (Choi & Johnson, 2005; Barbier, Cevenini & Crawford, 2012; Sowan and Idhail, 2014). Studies have found that videos are useful and help in the learning process. A study by Choi and Johnson (2005) on the use of context-based video instruction in online courses showed positive results. They suggest that the quality of the video should not be neglected. Sowan & Idhail (2014) found that the use of videos managed to keep the students positively engaged and develop a better understanding in their field of study. Barbier, Cevenini & Crawford (2012) found that videos could help to improve student learning at the tertiary level.

Research Methodology

All participants were students selected from Universiti Utara Malaysia who were enrolled for the Business and Professional Communication course. The course described in this article was a one-semester course of 42 contact hours during a 14 week period. The students were majors in the field of business and management. Two groups of students were selected for the study. Each group consisted of 5 students. Both groups were from the same class and had completed the first three courses on proficiency. These were English for Communication 1, English for Communication 2 and Process Writing. They had an average age of 20 and were a mixed group of males and females.

The 10 students who participated in the study were informed beforehand that they would be video recorded. They were advised to remain focused on their task, that was, to respond to a letter of complaint about an air conditioning unit which had been delivered to the customer and how to address the complaints. Students identified the problem based on the letter of complaint and then responded with a solution. The session of 40 minutes was video recorded. Both groups of students were given a period of three days to view or review the video of their respective groups. The students agreed to participate in further interviews. The 10 students were told that their actual names would not be used in the research report. They were assured that confidentiality would be maintained at all times and participation was voluntary. As a preparatory measure, the 10 students were requested to revise the relevant parts of the Business and Communication module on small group communication, discussions, verbal and nonverbal communication as well as the specific section on complaint letters. This included the format for responding to complaint letters. Appointments were made with the students so that the 10 of them could give feedback or respond to the video viewing session. Semi-structured interviews were conducted, but students were also allowed to express their opinions freely on the video recording of their task based on a letter of complaint. The 10 student interviews were audio recorded and transcribed. Students were allowed to respond in English or in Malay. Malay is the national and official language in Malaysia. The transcripts of the students were shown to the students so that they had an opportunity to check for accuracy. Changes to the script were made where necessary based on the students' feedback.

Findings

The responses of the students in relation to the video viewing session were thematically organized as follows.

The most important strand related to the usefulness of video viewing. Students became more aware of their communication activities and what their friends were doing. Below are some of the excerpts from student interviews, with the focus on verbal communication.

Quote 1: I was surprised at how I appeared in the video. It was good to know this is how I look. Never knew I looked so serious. But it was nice to see myself although I found some parts shocking. Didn't realize I switched to Malay every time I needed to give quick answers. I noticed that I switched to Malay when there was like pressure to move on fast or to answer fast. But at least I gave some suggestions to find solutions. Quote 2: I think this is very useful. I wasn't aware of so many things I was doing during the session. I noticed that sometimes I was listening to the other group instead of my own group, own friend. Sometimes, I think I wasn't like that, like I was in the video. Surprised.

Quote 3: I realized that I was doing a lot of talking and two of my friends were just following. Maybe, I should find ways to get them more involved so that they give more ideas during the discussion. It was almost like two take the lead while the other three just follow or just say something extra. Anyway, this is good for me. At least I realize now that this is meant for everybody to take part and not just to get the assignment, finish. This is the good time to practice.

Quote 4: I think I am very talkative. I just noticed how much I talk and occupy the discussion. It is like three of us active, one average, while one silent. At least, the other two discuss my ideas or add something. I think the quiet ones should be put together because this will make them talk. Otherwise, they will just sit there and they will not talk, just let others do the talking part. I don't really mind but sometimes, it is so irritating when someone just sits there. You don't know whether he is following or what? We are there to discuss together. So, if he is silent, why just sit there.

Besides these aspects of verbal communication, students also observed certain aspects of nonverbal communication. The excerpts below show that students became more aware of their nonverbal actions or behavior during the discussion session.

Quote 1: I didn't even look at my friend when she asked for other opinions. I seemed to be busy writing when my friends were discussing. ...Should have really paid more attention. Next time, I will try not to do this. At least, I should have signaled that I agree.

Quote 2: I didn't like the way I sat. So horrible. Like in a coffee shop. So shame.

Quote 3: I kept playing with my pen. Turning and knocking softly on the paper. I didn't even know I was doing this. ... I was embarrassed to see myself giving that funny smile when I was asked to talk about the answer to the problem. The group leader called me and I just smiled and looked down.

Quote 4: So embarrassing. I was yawning towards the end of the session.

One aspect that the students mentioned was about silence. Each group had one student who could be considered silent as they talked for less than 60 seconds throughout the session. The following are excerpts from the two silent students from the two groups. The first quote is in contrast to the second quote. The first is from a student who perceives he is weak in English while the second perceives himself to be good in English.

Quote 1: It is like this all the while. I have been like this from school time. In school the teacher always ask us to write, and that time I talk very less. So, in the university, I feel the same. I find it hard to discuss, difficult. I maybe can write but not easy for me to speak because the school time I spend mostly writing. I only speak during the lesson when forced. Here I like to just listen rather than talk. And I think the others in

the group speak better than me. So, I feel a bit embarrassed to speak. They feel OK to speak. I am not used to this. But I can write something for the question. ...I am not too good, not good in English, speaking. I have problems to start, to talk in English. I speak with funny pronunciation. So, I think everyone is looking at me when I am talking and I feel so shy. I feel safer when I do not open my mouth. Feel really, let the others talk. I say a few words when the leader asks me to talk. I prefer to remain quiet.

Quote 2: I respect my group members. I just keep quiet because I think they are using very simple English and they are a bit slow. I tend to speak fast and also my pronunciation is a bit different. I speak English at home and the way we discuss there is quite different. So, I just prefer to keep quiet and let the others talk. I know what is going on and prefer to remain silent. I don't want to appear too smart. My friends are smart but maybe this is the way the group likes to discuss. I prefer stronger arguments and reasoning. If I start like this, then maybe they won't like it. So, just keep quiet.

There were also other issues raised by the students. Students talked about time management to complete the task, the tendency to write when discussion was more important to provide solutions, the discussion confined to selected students during the session, and also the recording itself. Two of the typical responses are given below.

Quote 1: The recording should be good and clear so that students do not have to stress to listen. But since I was really looking at what I was doing, it was okay.

Quote 2: I think this should be a part of the activity itself. Students must have access to the recording so that they can view it whenever they are free and improve. Really useful for me, as this is the first time I am doing this. I noticed that time management could improve. Not wasting so much time in the beginning and then later rushing to finish. Also, some students need to be more active, at least pay attention. When asked to give opinions, not just accept everything. We need to write the solutions. Not doing other things like writing. And there seems to be very little other ideas coming.

Students' suggestions

Most of the students suggested that video recordings be done and students get the opportunity to watch these videos. The responses below represent the views of most of the students.

Quote 1: It is helpful. Students must have the chance to see themselves and see for themselves what they are doing. Maybe, they don't even know what they are doing. Even I didn't realize so many things. I think it is useful. And we can replay whenever we want to. So, maybe this could be done as part of the course. Students must have the chance to view themselves. I think they will learn so many things about themselves. The module gives advice. It must be used.

Quote 2: I think we should encourage video recording and then letting students have a look at what they have done. This is very useful besides the feedback we get from our teachers. We can see for ourselves what we have done. I feel there are so many things I want to improve now.

Quote 3: I think this video viewing will really be helpful for us. There are many things I myself learnt and I feel the other students will also learn from this video. At least the students know the way they are talking among themselves. What I notice is that some times, only two are talking and the rest seem to be busy with something else. When we watch, we are aware of this. Maybe, this will make us pay more attention to our friends. It is better with the whole group listening. Most of the time it is watching other peoples' video but this one has me in it. I am the one. I think other students will also learn a lot about themselves when they watch the videos.

Students' voices were heard through their responses. The findings provided useful insights on the use of the video and students were able to give useful feedback or comments after viewing the videos.

Discussion

Generally, the study gives some useful pointers on the use of the video. Videos could contribute in a positive way towards interactional competence. Students have voiced their opinions that they were able to see the actual processes they were involved in during the interaction and found it a positive learning experience. Most said that the video viewing was a useful exercise because it was related to them actually performing the task assigned, planning the time, identifying the problems and getting the task completed with the help of the guidelines given in the module. In other words, they were able to see in virtual reality form what would otherwise be normally explained using words. Video viewing provides possibilities for students to reflect on the session from many aspects such as their contribution of ideas, verbal responses, expressions of agreement, choice of words, and eye contact. The benefits of using videos were also evident in other studies (Choi & Johnson, 2005; Barbier, Cevenini & Crawford, 2012; Sowan and Idhail, 2014).

Furthermore, many of the students felt that videos can be embedded during the learning process so that they are able to not only assess the verbal communication but also the nonverbal communication that is taking place. Sometimes, there is a tendency to emphasize the written output but neglect important aspects of nonverbal communication. The communication processes are helpful as the output from the discussions serve as input in the writing process.

Video based learning has the potential to play a more central role in the teaching of this course, that is, Business and Professional Communication. It helps to meet the current needs of students, as well as recognize future needs. For example, the need for eye contact could determine whether the other students respond positively to a viewpoint or do not give it the attention it deserves. The need for appropriate nonverbal communication would be important in the future workplace as well. Video viewing can help students view themselves in relation to others to improve their communication skills.

Video recordings can serve as useful tools in the pedagogical processes. Teachers can tap on video viewing as they can replay it many times, or focus on certain aspects they wish to emphasize about effective interactional competence. The videos can also be viewed independently by students. However, the quality of the video should not be neglected, as suggested in a study by Choi and Johnson (2005). This point was noted by some of the students. Guidelines could be given on what to do when viewing the videos. For example, students can observe the body language, eye contact and ways of showing agreement or expressing alternative views. Distracting mannerisms can also be discussed. This will help them to improve their communication skills (Riggenbach, 1998; Olsher, 2004; Young, 2009; Walsh, 2011).

Conclusion

The findings in this study suggest that most students have a favorable view of the use of videos in the teaching of English. Video-based learning has several advantages and students have cited several reasons for supporting the use of videos in the teachinglearning process. The usefulness of the video-based lessons can be seen from the feedback given by students that they were more aware of the way they communicate during the discussion. This includes verbal and nonverbal communication. Technically, video recordings allow for replays, pauses or selective viewing. The use of the video, as seen in this study, provides useful insights on ways to use it or incorporate into the scheme of work as a self-directed activity. Instructors might consider the use of professionally recorded videos of students' communication activities to be included in courses, as an addition to existing teaching materials. The use of a video taken with a group of students who have enrolled for the same course enables students to look at the task-based activity more analytically and critically. Students have more opportunities to reflect on their interaction and communication patterns. They are also able to view the other participants engaged in the activity. Further investigation would be helpful as the scope of this research paper is rather limited. More studies on the use of the video will provide additional input to make more informed decisions on the use of these videos to improve the standard of English among undergraduates.

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TV White Space for Development Programs in the Philippines: Implications and Challenges

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Abstract

TV White Space (TVWS) is recognized as an emerging approach to addressing the digital divide, and this has been piloted and tested in several countries all over the world. In 2014, the Dynamic Spectrum Alliance urged the National Telecommunications Commission to use TVWS to serve educational institutions, health centers and government units in far-flung areas. Deployment of the technology in the Philippines has been described as the largest in Asia. The initial trials in the country involved a rural project for registering fisher folks, access to health care and for disaster response. This study aims to provide an overview of the initiatives and implemented programs in relation to the use of TVWS, especially in the remotest areas of the country. The paper draws information from interviews and literature to present TVWS program developments. The study describes the extent of using the technology, the benefits and potentials in responding to problems in the rural areas, and the challenges in existing as well as in future programs.

Keywords: TV white space, ICT, technology and society, rural development

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Introduction

The Internet has already shown how it could change various aspects of living. In developed countries, Internet is considered essential in providing extensive economic and social benefits. For decades now, the Internet has created new ways to communicate and socialize; has made new venues and models for businesses and industries to operate; and has also changed the methods of delivering in public services, healthcare and education. The United Nations itself considers it vital to make available the benefits of this technology to developing nations. In 2014, Internet use penetration in developing countries grew by 8.7 per cent, twice as fast as in the developed world where its usage rose by 3.3 per cent. Nevertheless, of the world's 7 billion people, only 2.7 billion have access to the Internet while the vast majority of the 4.3 billion that remain unconnected live in developing countries (Deloitte, 2014). Those who are unconnected are from the world's poorest and most disadvantaged populations due to costs and availability.

Governments and communications and technology institutions have endeavored to come up with strategies to reduce the cost of connectivity, to make available to rural or underdeveloped communities. TV white spaces (TVWS) came out as one of the potential solutions. In November 2008, the Federal Communications Commission (FCC) gave the go to utilize vacant spaces of the TV broadcast bands, called white spaces. These frequencies, left empty when television stations moved to digital broadcasting, are particularly abundant in rural areas. And these are the areas where traditional telecom infrastructure faces a challenge in delivering broadband services.

The FCC, other communication regulator offices such as the Ofcom in the UK and the National Institute of Information and Communications Technology (NICT) in Japan, as well as corporations like Microsoft, Google among others have implemented activities and researches that dealt with TV white space in the areas of development of technologies, cost, regulations and standards, quantitative assessment, and pilot implementations. These activities consequently pointed out the technology's potentials for addressing the digital divide and providing opportunities for interventions in various sectors.

In the Philippines, the implementation of TVWS has been considered to be the biggest in Asia. Undeniably, the Philippines is "never left behind" when it comes to coping with changes and advances in technology and Internet use. Dubbed as the "selfie region" in Asia, no doubt the Philippines is trying its best to provide better connectivity and explore means to improve internet connection in the country.

Based on current information, the Philippines has a modest 52% Internet penetration rate. This figure is nearly a doubled rate from the past 4 years of 27% in 2010. The average connection speed is about 2.1 Mbps, with a little above 8-percent of the users enjoying connection speeds faster than 4 Mbps. In terms of user devices, laptops (45%) are the most preferred over desktops and mobile devices for Internet access. However, with only 20-percent of the total households having computers, a significant portion of the population still do not benefit from the Internet access despite the fact that each Filipino owns at least one phone or mobile device.

The need for connectivity is now compelling especially with claims from the World Bank that for every 10 percent increase in broadband connectivity results in 1.38% increase in GDP. This claim presents both opportunities and challenge in a country where issue on resource mobilization is a challenge.

TVWS in the Philippines is basically a policy intervention and still in its initial phase. The key agency leading this effort is the Department of Science and Technology Information and Communications Technology Office (DOST-ICTO). The will to provide Internet connectivity in public places across the Philippines is in line with "Internet for All" thrust identified in the Philippines Digital Strategy for 2011-2016. Through a project called e-Filipino Program of the DOST, government's efforts in enhancing internet accessibility for Filipinos to accelerate economic, social and educational opportunities end to reduce the growing digital divide in the country. With this goal by the government, there was a noted increase in budget allotted for this and private involvement is highly encouraged as provider for Internet service. TVWS is indeed one among the projects that is part of the bigger plan to increase connectivity in the country.

The concern of this study will focus on how the proliferation of the technology will affect the implementation of development programs. It's been established in previous researches that there are benefits for the use of technology in different aspects of living. This rising importance has urged societies and institutions to review, analyze, enhance and modify management procedures, organizational structure, as well as consider the potentials of ICT in the context of globalization. The potentials of TV white space, which is culled out from researches and trials on the topic, and the prevailing conditions are the core of this study. This paper aims to analyze, based on existing literature, the possibilities and changes that the TV white space revolution will bring to development programs.

TV White Space

White Space refers to the unused broadcasting frequencies in the wireless spectrum. Television networks leave gaps between channels for buffering purposes, and this space in the wireless spectrum is similar to what is used for 4G and so it can be used to deliver widespread broadband Internet.

Typical home Wi-Fi can travel through two walls. White Space broadband can travel up to 10 kilometers, through vegetation, buildings, and other obstacles. Tablets, phones, and computers can all access this wireless Internet using White Space through fixed or portable power stations. The actual amounts of spectrum vary by region, but White Space spectrum ranges from 470 MHz to 790 Mhz. A computing hardware however, cannot directly connect to a broadband spectrum. A separate device is needed to link a receiver that is connected to a regular WiFi hub (Gilpin, 2014).

According to the ITU report "Digital Dividend: Insights for spectrum decisions" (2012), TV white spaces (TVWS) are "portions of spectrum left unused by broadcasting, also referred to as interleaved spectrum". Widely, TVWS are also referred to as those currently unoccupied portions of spectrum in the terrestrial television frequency bands in the VHF and UHF TV spectrum (be it analogue or digital, generally in the UHF band). These TV spectrum "gaps", with advantageous

propagation properties inherent to UHF spectrum (excellent outdoor and indoor coverage and non line-of-sight propagation properties) have been identified in some administrations as an alternative for providing commercial wireless services other than broadcasting. Some of the wireless technologies being explored in TVWS are low-power, machine-to-machine (M2M5) communication devices and low-power wireless broadband applications, capitalizing on the longer coverage ranges achievable with UHF spectrum (Gomez, 2013).

The term "white space" in the context of radio frequency spectrum management refers to portions of radio spectrum that are allocated for licensed use but are not assigned to a particular licensee or are allocated and assigned for licensed use but are not utilized by the licensees at all times or across all geographical locations. There is growing recognition that the white spaces in bands traditionally allocated to television broadcasting (Carlson, J. et al, 2013).

Applications of TV White Space

Carlson, J. et al (2013) claims that Television White Spaces can be used to provide wireless broadband Internet access on a "no-interference no protection" (NINP) basis. A device that uses these white spaces is referred to as white spaces device (WSD) or TVWS device. TVWS were originally established because vacant channels were historically necessary to provide broadcasters protection from harmful interference from other stations. Not all vacant channels are needed for broadcast-to-broadcast interference protection.

In many markets, TVWS also exist because there are few broadcasters – there are dormant channels in areas of lower demand. Lower-power devices can operate in these vacant TVWS channels without causing interference to licensed operations. Although the number and precise frequencies of vacant channels varies from location to location, only a fraction of the available UHF channels are being used at any given time in any given location in South Africa. Topography also impacts on the number of transmitters and the associated number of channels required to achieve coverage. Even after the digital television transition, much of the spectrum in the broadcast bands will remain vacant and available for broadband use. Moreover, advances in technology are facilitating more precision in terrestrial broadcasting planning, which of itself is opening up new white spaces. Available spectrum in broadcast bands has highly desirable propagation characteristics: signals transmitted over TVWS spectrum can travel long distances and penetrate walls and other barriers. As a result, TVWS technology is particularly suitable or delivering Internet access in rural and underserviced urban areas. Other applications currently identified using TVWS include:

- Last mile access to augment citywide or wide area data networks;
- Data offload from mobile networks;
- Machine-to-machine communications, including smart grid and health care applications;
- In-building media distribution
- Local government and public safety applications; and
- Service to educational and health facilities (Carlson, et.al).

The level of Internet use varies from country to country and the use of TVWS as well largely depends on the country's priority and needs for its use (Carlson, et al., n.d.). The proliferation of TVWS demonstrates that it can bridge the digital divide particularly in underserved areas.

In Kenya, the first trials in using TV White Space included local schools, health clinic, government agriculture office and a library (Graham, 2013). For the white spaces project, the company is working with a Kenyan ISP, Indigo Telecom, and the Kenyan government. The ISP is installing wireless 'base stations' - or masts - that are solar-powered, to get round the lack of mains electricity.

Microsoft has also funded another TVWS project in rural Limpopo, South Africa to help the government's goals of providing low-cost access to Internet among majority of South Africans by 2020. Five schools are part of the project that is a mix of primary and secondary: Mountainview, Doasho, Mamabudusha, Mphetsebe and Ngwanalaka. The schools have been equipped with a range of laptops and tablets along with training to use them in class. Other logistical support like education-related content, solar panels for device charging where there is no access to electricity are also included.

Through a partnership between Philippine Department of Science and Technology's Information and Communication Technology Office (DOST-ICT Office), Department of Agriculture's Bureau of Fisheries and Aquatic Resources (DA-BFAR) and the U.S. Embassy Manila's United States Agency for International Development (USAID), TVWS was explored as a means to deliver broadband connectivity and facilitate mobile fisher folk registration to remote areas in target municipalities. The initiative aims at accessing the BFAR's Fisherfolk Registration System (FRS) directly from the field, enabling municipalities to immediately distribute critical IDs, certificates and licenses to the fishermen that need them. Additionally, field operatives from the Philippine National Police, Bantay Dagat, and BFAR will be able to immediately access and connect to a central database to monitor compliance.

In April 2011, a six-partner consortium, with support from the UK government's Technology Strategy Board, started work on a rural broadband trial network that would use white space radio spectrum to provide broadband connectivity to a small rural community on the south part of the Isle of Bute, Scotland. A key aim was to investigate and demonstrate the potential of white space spectrum for providing broadband access to remote, difficult-to-reach rural areas in challenging terrain (Center for White Space Communications, n.d.). The 18-month project involved the planning and installation of white space radio links from the local telephone exchange to eight premises in the surrounding area, as well as backhaul connectivity from the telephone exchange to the mainland and then on to BT's IP backbone for access to the Internet.

Launched in June of 2011, the Cambridge White Spaces Trial was designed to evaluate both the technical capabilities of the technology as well as potential end user applications and scenarios. The consortium8 explored and measured a range of applications, including rural wireless broadband, urban pop-up coverage and the emerging "machine-to-machine" communication, and found TV White Spaces can be successfully utilized to help satisfy the rapidly accelerating demand for wireless connectivity (Microsoft Research, n.d.).

Meanwhile, in Singapore, the White Spaces Pilot Group (SWSPG) was established in April 2012 with support from Infocomm Development Authority (IDA), the regulator of Singapore. The objective of the pilot group is to promote the Lion City as a leading test-bed and innovative zone for conducting pilot projects using White Spaces technologies, thereby accelerating the adoption of White Spaces technologies locally, regionally and eventually globally. With this goal, they have started with 3 pilot projects that demonstrate the commercial use of TVWS.

In September 2009, the first TV White Space in Claudville Virginia was launched thru the initiative of TDF Foundation who wanted to deliver the benefits of broadband access to a wider community beyond the computer lab. SBI deployed its network architecture through the bandwidth allocation software with off the shelf radio equipment to enable an innovative wireless solution that took advantage of available TV White Spaces channels. These radios were set up at the schools as wells us business users in the community to create "middle mile" connections between the computer lab and the multiple Wi-Fi hot spots installed.

TV White Space in the Philippines

TV White Space potential in the Philippines cannot be underestimated as several efforts are being done to make use of Internet and technologies in bringing service and education to the people who are hardly reached by Internet. The use of TV white space in the country was implemented to aid connectivity and provide social services to the people.

TV White Space for Agriculture

Initially, the implementation of TVWS for connection was in agriculture, particularly in the fisheries department. DOST-ICTO was collaborating with international as well as local partners to set up connectivity the same as Wi-Fi in the far-flung areas of Bohol and facilitate the registration of fisher folks in five municipalities. The initiative will enable local government workers to encode data right in the field and reduce the paper work involved in encoding of entries from the field to the office. Pertinent data can be entered in the database immediately and offices needing this information can access it immediately. The database is needed for the issuance of critical certificates and licenses to fisher folks, and is seen to be vital in tracking the amount of fish being gathered as well as in tracking fishermen in cases when natural disasters strike.

While the main function of the connection is for the registration of the fisher folk, the technology can now provide for the much-needed Internet connection for schools, community centers, clinics and other public institutions within a 10-kilometer radius.

Implications and Challenges

The Philippine fishing sector is beset by problems on inappropriate management of resources (usually of overexploitation patterns) and inadequacies in research and information (i.e. fish catch, catch size per fisherman over a period of time, fishing locations, and environmental conditions), among others. The establishment of the database may lead to an integrated system that will provide fisher folks with relevant data for their appropriate use of resources and managing their livelihood. A dynamic, continually updated relational database, coupled with proper information dissemination and human resource upgrading, will provide the fishery department a

complete range of solutions important for monitoring and control systems. This is still, however, dependent on the design and use of the electronic data.

At the moment, it may be safe to say that the use of TVWS can influence the drive to empower the rural folks through a convenient and valuable registration system, in addition to having access to information relevant to their needs and objectives. In a few year's time, fishermen may become technology savvy and may be able to research information on how they can improve their methods of fishing, sell online, other means of processing their catch, etc. The benefits may not just be to the people, but to the environment as well. Since only registered and licensed fishermen can make use of marine sanctuaries, reefs and mangroves, the system will monitor access to these resources and may aid in preventing overfishing and promoting sustainable use of aquatic resources. If highly successful, the program can be replicated and its benefits will transcend to and transform underserved areas.

TV White Space for Disaster Response

In 2013, the initial purpose of using TVWS for fisher folks' registration was redirected to provide Internet connectivity to help three earthquake-hit municipalities rise from the ruins of a 7.2-magnitude earthquake. The project was pursued in partnership with Filipino-Singaporean TVWS technology firm Nityo Infotech. Nityo Infotech funded the rollout and deployment of the TVWS technology in Bohol, with an investment of about \$5 million. This amount was allocated to set up the 100 sites and other technical requirements of the pilot project. A month later, one of the strongest typhoons in the world hit the Philippines, which left 4 million people homeless, destroyed millions worth of facilities and structures, and made the area seemingly disconnected from the rest of the country with the destruction of telecommunications networks. TVWS was instrumental in providing Internet connection, making it possible for families to use social media in contacting their relatives and updating them of their condition.

DOST Undersecretary Louis Casambre, head of the DOST's Information and Communications Technology Office (ICTO), said the successful installation of radio transmitters to provide connectivity to the municipalities helped in emergency response and relief efforts after these natural disasters. The Internet connectivity provided by the TVWS technology continues to benefit local government units and national government agencies in delivering basic government services to the people of the affected municipalities. This has helped as a medium to provide information communication technology to rural areas that are not served by local telecommunication companies.

Implications and Challenges

Experiences on the use of the technology have shown the need for a rapid and costeffective communications network in the aftermaths of disasters. Further, it has emphasized the importance of setting up a disaster preparedness strategy, which shall integrate a TVWS kit to provide the necessary communication needs for disaster response teams.

The use of TVWS has the potentials of reliably connecting disaster response teams at all times, and at a wider range. Continued developments with the technology may also give rise to supporting greater data use to allow for video transmissions at a relatively

fast speed. Given the right conditions, TVWS can be set up quickly and with more trials, may be used in peer-to-peer networks.

Currently, the use of TVWS in providing connectivity and communication in disaster management, has been under response and recovery phase. Soon, the benefits may be interpolated in disaster mitigation and preparedness. This, of course, would need policy interventions and dialogue with potential beneficiaries.

The effective implementation of this technology may depend on how it is integrated with existing technologies and conventions. The implementers may also have to deal with discrepancies in existing communication infrastructure in different regions. One of the challenges will be on how to maximize the use of existing structures with this new technology.

TV White Space for Health Care

The success of the pilot project in Bohol inspired another initiative of using TV White Space as a medium of connectivity. With UP Manila's- Telehealth Center telemedicine program, called the RxBox project, DOST collaborated with the implementers of the RxBox Project to work hand-in- hand in providing connectivity. The RxBox project aims to enhance the capabilities of health workers in the diagnosis, monitoring and treatment of patients by providing a device, the RxBox, which can capture, store and transmit a patient's physiologic data.

The RxBox is a component of the government's program on eHealth, as a means of addressing the lack of doctors, nurses and health workers in underserved regions of the country. As an eHealth solution, the RxBox, which is equipped with monitors and sensors (blood pressure monitor, ECG, pulse oximeter, fetal heart monitor, maternal tocometer, and a temperature sensor), is a biomedical device installed and health centers to perform basic physiologic measurements. The device facilitates tracking of patient data, generating reports and recording outbreaks.

Implications and Challenges

The Philippines is incessantly frustrated with problems of limited budget, management inefficiency, inadequate number of healthcare personnel and problems with infrastructure and equipment. The program on digital health is trying to overcome some of these issues. The RxBoxes are helping doctors reach more patients in remote areas. In addition to the providing affordably health care programs, these are making health workers more efficient.

Integration of technology may address the lack of health care professionals, and may lead to significant reduction in the costs of health care, but may also pose the challenge of greater responsibility and training for the existing work force. The challenge is the implementation of a well-planned health program with a dynamic IT strategy that could address the current problems and bridge the gaps in health care. In addition, there will be a need for better coordination and management of data, because any threats to the reliability of available information affects a patient's survival.

TV White Space for Education

Schools that are within the range of the areas set-up with TVWS connection can now access information in the Internet. Plans for the use of TVWS in the education sector

is currently being developed by DOST-ICTO for DepEd through the Cloud Top project.

Basically, the project aims to reduce the cost of computer software and hardware by promoting the use of thin clients. Thin clients refer to computers or programs that rely heavily on another computer to do its basic functions. The DepEd shall take charge of providing the learning content while the DOST-ICTO is tasked to deal with the technicalities.

Implications and Challenges

In the Philippines, TVWS use is a great potential to address challenge of providing quality education or learning programs especially in the remote areas of the country. The use of Internet as an information infrastructure has been predicted and is now the current trend that makes communication and information- sharing more accessible. Now that we are living in the so-called information society the value for and of information has become more intense than before. For this reason, initiatives to use the internet in general in the education sector has been witnessed and because of further research and development the use of TVWS was considered as a platform to make internet work even at rural areas to bring education in less than no time and at minimum costs.

For a developing economy like the Philippines, one of the challenges that the country face is the need to provide quality learning programs that will bring about a quality education to its people. The Philippines has more than 6 million young people who are out of education due to circumstances beyond their control, resulting to drop outs and poor academic performance. To innovate on delivering educational service to school-age Filipinos, and increase reach of Filipinos who were out-of school youth, the Department of Education has ventured in CICT and BALS through the Eskwela Project to concretize the use of information technology. These efforts on technology integration and Internet use have offered an exciting and useful tool in the education sector. With the extensive use of TVWS, the implementation of the project may well serve more out-of-school youths and adults, positively affecting the sustainability of the project, and consequently addressing some of the problems in the education sector.

Conclusion

The opportunities which the TVWS can offer in the sphere of education can be really unique but not without challenges. The Internet is a very democratic platform to know and learn about many things. But the usage of information gathered from the Internet must be carefully examined. People who will be using this information must be critical hence, for effective education a mere access to Internet is not enough. People must have critical thinking on the information that they come across.

The use of TVWS is not only limited to the idea that information is available to people. It also is important to know how to process this information and be able to use this to achieve our cognitive, social and economic goals. There has to be ways to make this information practical and responding to people's needs.

The potential of TV White Space to provide coverage for a given area is considered to be cost effective and is therefore being encouraged to be utilized in countries aiming to bridge the digital divide. Mobility of knowledge is now seen as becoming less and less difficult to people but this is without challenge. Transmission of knowledge is just one aspect that TV White Space can provide. There are still concerns in ensuring that providing of quality services should take place in every aspect and sector so that it will result to the over-all goal of bringing development and empowerment to the people.



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Development of a System using Interactive Video for Novice Programmers

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Abstract

In e-learning in programming education, there is a method used of creating a program using a lecture video and textbook, and then submitting a file. However, when errors occur in the files submitted by students, it is often unclear when the errors occurred. In such cases, it is desirable to teach the timing of error occurrence. With regard to interactive video, the video contents change according to the televiewer's situation or selection. The system that we have created presents a video and view design with the domain of an editor for programming education. A student creates a program according to the directions given on the video. Then, in cases where the student's program contains errors, even at the middle stage of program creation, the video changes and the error is pointed out with statements such as "no semicolon is found" or "the method name contains a spelling error," etc. This article reports on the timing details that change the analysis method of student coding and the videos used in the system.

Keywords: programming education, software engineering, e-learning

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Introduction

In e-learning in programming education, there is a method used of creating a program according to a lecture video and textbook, and then submitting a file. However, when the file that a student has submitted contains an error, it is often unclear when that error occurred. Therefore, it is desirable to teach the timing of error occurrence. With regard to interactive video, the contents of a video change according to a televiewer's situation or selection (Dongsong, Zhou, Briggs, & Nunamaker, 2005). Students create a source code in accordance with instructions given on a lecture video; the purpose of this research is to develop a system in which the video urges error correction, if it detects an error during the creation of a program.



The appearance of the system

The main screen is shown in Fig. 1 (a). This screen is displayed after login and the lecture video begins immediately. Fig. 1 (b) shows the composition of the main screen, which consists of the following three parts.

- 1. Lecture video (main video)
- 2. Sub video
- 3. Text editor

A student inputs a source code into a text editor according to directions given in the lecture video. The teacher's personal computer screen, etc., is used to assist the lecture video, and a sub video flows through the teacher's screen and synchronizes with the lecture video. Each video chapter is divided into steps based on the input method procedure specified by the source code in the lecture video. A program block is made into a subject about the method of input procedure, and the target programming language is Java (Tatsuyuki, Takashi, & Osamu, 2014).



Figure 2: Learning process using the system

The process of study using this system is shown in Fig. 2. A lecture video consists of two or more chapters and each corresponds with one study step. The student inputs the source code into the text editor for every step. The student does not proceed with the lecture video until the step has been completed. However, if a student has created the source code before the lecture video is complete, that step is skipped and the next chapter ensues. Furthermore, when the source code that the student has created contains a spelling or other error, the video changes to one that urges error correction. The error correction video consists of chapters that correspond to various error patterns, and the chapter that corresponds to the student's error is displayed. Once the student has corrected the error in the source code, the lecture video resumes. The student completes the source code by means of these processes.

Algorithms



Figure 3: Outline of algorithms

The outline of the algorithm of error detection is shown in Fig. 3. The algorithm is divided into analysis of the source code of an answer, and analysis of the student's source code. First, a lexical analysis and syntax analysis are conducted for the source code of an answer. Then, the pattern of the source code corresponding to each step of the lecture is created. A search is made to analyze correspondences between the student's source code and the pattern list. The pattern is compared per lexical token and in this way errors are detected.



Figure 4: Analyze answer source code

Fig. 4 shows the process up to the analysis of the source code of an answer. A token sequence is created for the source code of an answer through lexical analysis. Moreover, syntax analysis is conducted from the token sequence, and information, including an access ornamentation child, a class name, a variable identifier, etc., is connected to a token sequence from the result.

• Create all patterns of the source code



·Detecting a misspelling of the class name

Figure 5: Creating patterns and detecting errors

The process of detecting an error from creation of a pattern list is shown in Fig. 5. The source code of the analyzed answer is classified into units, such as field and method, and creates the list of patterns that cover each step of a lecture video. Next, the lexical pattern of a student's source code is analyzed and a pattern search is conducted to identify the most similar code from the pattern list. A comparison is made of the pattern and lexical tokens, and errors are pinpointed. By analyzing the source code of an answer, the type of error can be identified, such as that the class name is misspelled. When there is 75% of similarity based on the distance between the character strings by Levenshtein distance, it is judged as a spelling error. Moreover, in the case of an anagram where the character order has been changed, this is also judged a spelling error. Sixty-nine types of error are covered in the error video. A student's source code may be in a state where syntax analysis is impossible, if, for example, there is no curly brace. However, even in such cases, it is a feature of this technique that it can respond by conducting a lexical analysis alone while referring to the information in the syntax analysis from the source code of an answer.



Figure 6: System integration

The system is outlined in Figure 6. The client's screen consists of HTML, JavaScript, and CSS. Further, the inputted data is transmitted to the server side as JSON data. The server was mainly developed using Grails.

Conclusion

In this research, when a student created a source code in accordance with a lecture video and an error was detected in the student's code, the system switched to a video that urges error correction. The error correction video supports 69 main types of student error. However, since the error correction video could reproduce only one error at a time, the system could not perform correspondences in cases where two or more errors occurred. Therefore, the system has now been improved so that it can correspond to two or more errors. Moreover, the system is ready for test employment in a real lecture setting, to acquire student data, and to be evaluated.

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The Application of IC Ticketing System in Clinic Fees Payment

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Abstract

The purpose of this study was to investigate the demand of application of IC ticketing system in domestic retail industry by examining the needs of adoption of small amount paying method and the reasons for customers' using of IC stored value card in this industry and aimed at providing suggestions on the e-development of small amount paying methods for domestic retail and banking industries. This study was developed in a way that the model constructs in TAM were adapted to the context of IC ticketing system application in clinic fees. Scale items on the survey include those measuring perceived usefulness, perceived ease of use, a user's attitude toward using and intention. The questionnaire contains no identifying information about the individual participants. A total of 501 Taipei City Hospital patients' feedbacks were collected. Results indicate that with the exception of perceived ease of use with behavioral intention, and the experience with the relationship between subjective norm and behavioral intention, analysis supported most of the hypothesized relationships and results complement prior research on experience, subjective norm, and TAM.

Keywords: IC ticketing system, Clinic fees, Partial Least Squares (PLS)

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Introduction

In recent years, the development and commercial application of IC ticketing system have shown promising growth in the industries of transportation, telecommunication, etc. As for in the retail industry, paying by cash is still the dominant method, especially in the convenience stores, huge quantity of transactions with small amount makes payment via credit card or cash card inconvenient. The application of paying via low-cost IC card with the aims of security and convenience will bring great benefit to the business and the customers alike.

The purpose of this study was to investigate the demand of application of IC ticketing system in domestic retail industry by examining the needs of adoption of small amount paying method and the reasons for customers' using of IC stored value card in this industry and aimed at providing suggestions on the development of small amount paying methods for domestic retail and banking industries.

The report starts with the introduction to easy card with credit option and the commercial applications of IC card, and then goes on to the research of demands of customers, retail industry and baking sector. Finally the report leads to the results of the questionnaire investigating the effects of variables of population poll and life style on the adoption of easy card/e-money.

Conclusion

The IC Ticketing System: Taipei Easy Card

When consumers shopping with small payment, it is inconvenient that pay by credit card or cash in the transaction process. For this reason, one micro-payment way to be built now, it is called e-wallet. Bank for International Settlements (BIS) define e-wallet is stored in the consumer's electronic equipment, as money-stored or pre-paid tools (Bank for International Settlements, 1996). E-wallet is an IC chip plastic cards, and cardholder can pay with it, such as IC ticketing system.

Taipei Easy Card is an IC ticketing system that provided by Easy Card Corporation. It is a non-contact multi-function electronic ticket integration of the payment of the Taipei mass rapid transit system, buses, parking, and authorized stores. Users pass the card over the sensor area to make a transaction, avoiding hassles with finding correct change. As value can be added to the card at any time, there is no need to repeatedly purchasing new cards. Taipei Easy Card can be used for years and its ultimate aim is to allow people to travel throughout Taiwan with only one card.

People to hospitals for treatment, has a money card chargeback equipment at direct induction debit, to complete the registration fees and medical expenses to pay, eliminating the need for site preparation cash or ex-change the inconvenience of looking for change after August, 2008. The object of this study is finding the influence of the active of using Easy Card for clinic fees.

The Technology Acceptance Model

Based on the theory of reasoned actions (TRA) (Ajzen, & Fishbein, 1980), TAM addresses factors influencing a user's attitude to-ward using and intention to use technology (Davis, Bagozzi, & Warshaw, 1989). TAM has been widely adopted in studies exploring technology acceptance due to its parsimonious nature and highly reliable constructs. Examples include studies testing user acceptance of word processors (Davis, Bagozzi, & Warshaw, 1989), spreadsheet applications (Mathieson, 1991), email (Szajna, 1996), and websites (Gefen, Karahanna, & Straub, 1996).

TAM considers perceived usefulness (PU) and perceived ease of use (PEOU) as two major factors influencing a user's behavioral intention (BI). The former refers to the perceived effectiveness of improving the user's performance, while the latter refers to how effortless a user perceives using the technology to be. Prior research has found that PE mostly influences attitude and intention indirectly through PU (Hu, & Bentler, 1999). Perceived usefulness and user attitude in turn influence intention to use, which predicts actual usage of technology. Treating the application of IC ticketing system as a new technology is used in Hospital in Hong Kong. This paper proposes that the same relationships from TAM hold in relation to pay clinic fees with Taipei Easy Card. This expectation leads to the hypothesis:

H1: PU is positively associated with BI.H2: PEOU is positively associated with BI.H3: PEOU is positively associated with PU.

Subjective Norm

Social influence process involves behavior by one person that has the effect-or even just the intention-of changing the way another person behaves, feels or thinks about a motivation (Zimbardo, & Leippe, 1991). The motivation might be political issue, a product, or an activity. Social influence in their theory of reasoned action is as subjective norm (Fishbein, & Ajzen, 1975). Ajzen introduced social influence as subjective norm in theory of planned behavior (Ajzen, 1991). The more favorable the attitude and subjective norm toward a behavior, the stronger will individual's intention to perform or to do a behavior.

In past several years, many prior studies have proven that social influence significantly effects user behavior (Bhattacherjee, 2000; Chang & Cheung, 2001; Grandon, Alshare, & Kwun, 2005; Hsu, & Lu, 2004; Hsu, & Chiu, 2004; Liker, & Sindi, 1997; Nysveen, Pedersen, & Thorbjornsen, 2005; Song & Kim, 2006). Bhattacherjee (2000) pointed that subjective norm was an important factor in predicting intention to use electronic brokerage services. Subjective norm is as two forms of influence, namely interpersonal influence and external influence. Interpersonal influence refer to influence by family, friends, colleagues, superiors, while external influence referred to influence by mass media, expert opinion (Bhattacherjee, 2000).

In the theory of planned behavior framework, a social norm is defined as perceived social pressure that is whether or not perform a behavior (Ajzen, 1985). Social norm refers to mass media reports and expert opinions considered by individuals in performing a behavior (Bhattacherjee, 2000).

TAM indeed played an important role in the field of information technology adoption and had been applied extensively for the subsequent researches. However, more and more researchers find that there are some flaws in the model. Some studies (Taylor, & Todd, 1995) began adding some significant determinants into their model to fit the fact truly. Davis and Venkatesh (2000) revised the original model and proposed an extended model of the technology acceptance model, and it is so-called The Technology Acceptance Model 2 (TAM2).

It can be separated into two parts in this model. They are social influence process and cognitive instrumental process, respectively. Davis and Venkatesh suppose that both social influence process and cognitive instrumental process are significant factors to affect user acceptance. Social influence process included subjective norm,

voluntariness, and image. Cognitive instrumental process included job relevance, output quality, result demonstrability, and perceived ease of use.

TAM2 shows perceived usefulness is a very important driver for people to use information technology through social influence process and cognitive instrumental process. It also indicates that subjective norm has a significant impact on the behavioral intention for the mandatory user in early stage. This may explain why the determinant of subjective norm is not significant before.

Summarized, subjective norm affecting users' intention of paying clinic fee by ewallet from perceived usefulness and behavioral intention. This expectation leads to the hypothesis:

H4: SN is positively associated with PU. H5: SN is positively associated with INT.

Personal Prior Experience

Experience was not explicitly included in the original TAM. Davis, Bagozzi, and Warshaw (1989) indicated the relationship between a person's experiences and his or her behavior. Experience, which is the result of acquiring and processing stimulation over time, is one factor that determines how much exposure to a particular stimulus a person accepts.

Peter and Olson point out that Personal experience of a given object affects a person's behavior (Peter, & Olson, 1990). They found that the more positive a person's experience about an object is, the more positive beliefs he or she will hold about it. As a result, the more positive beliefs a person has, the more positive attitude this will create. On the other hand, according to the user behavior literature, beliefs and attitudes are principally created based on a person's personal experience of a given object.

Hartwick and Barki (1994) indicated that the direct effect of subjective norm on intentions may subside over time with increased system experience. Although subjective norm had a significant effect on intentions prior to system development, the effect became non-significant three months after system implementation. Agarwal and Prasad (1997) found that mandating the use of a system can increase initial system utilization, enabling users to overcome the hurdle of first time use, but that such pressure seems to erode over time.

Therefore, TAM2 theorizes that the direct effect of subjective norm on intentions for mandatory usage contexts will be strong prior to implementation and during early usage, but will weaken over time as increasing direct experience with a system provides a growing basis for intentions toward ongoing use. Venkatesh and Davis (2000) expect the effect of subjective norm on perceived usefulness to weaken over time, since greater direct experience will furnish concrete sensory information, supplanting reliance on social cues as a basis for usefulness perceptions. In contrast, Venkatesh and Davis (2000) do not assume the influence of image on perceived usefulness to weaken over time since status gains from system use will continue as long as group norms continue to favor usage of the target system. This expectation leads to the hypothesis:
H6: The positive direct effect of SN on INT for IC Ticketing System will attenuate with increased experience.

H7: The positive direct effect of SN on PU for IC Ticketing System will attenuate with increased experience.

Method

The theoretical model underpinning this study is presented in Figure 1. The model suggests that perceived ease of use, perceived usefulness, subjective norm and experience positively influence users' intentions. Table 1 presents definitions of constructs used in this study. The following sections elaborate on the constructs in the model and the proposed relationships among them.



Figure	1:	Theoretical	model.
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Table 1: 0	Construct Definitions	
	Construct	Definition
PU	Perceived Usefulness	A person believes that using the system will enhance his or her job performance.
PEOU	Perceived Ease of Use	The degree to which a person believes that using an IT will be free of effort.
BI	Behavioral Intention	A person's perceived likelihood or subjective probability that he or she will engage in a given behavior.
SN	Subjective Norm	The degree to which an individual perceives that most people who are important to him think he should or should not use the system.
EXP	Experience	Experience is knowledge a person gets by doing something or watching someone else do it.

Sample

The sample consisted of patients of a medical center in north Taiwan. Respondents completed questionnaires between December 1 and December 31, 2014. A total of 800 surveys were distributed and a total of 750 responses (93.75%) were received. Due to missing data, 501 responses (62.63%) were used in this analysis. The sample consisted of 294 females, 474 respondents whose using times less than 3 times, 341 respondents whose educational background is under graduate, and 133 respondents whose age are under 25 years old.

Variable		Frequency	%
Gender	Male	207	41.32
	Female	294	58.68
Experience (times)	0~3	474	94.61
-	4~10	21	4.19
	11~	6	1.20
Age	~25	133	26.55
	26~30	106	21.16
	31~35	103	20.56
	36~40	54	10.78
	41~45	55	10.98
	46~50	23	4.59
	51~	27	5.39
Education	Primary school	1	0.20
	Junior High School	15	2.99
	Senior School	88	17.56
	Under Graduate	341	68.06
	Graduate	56	11.18
Total		501	100.00

Table 3: Data Summarize

Measures

Subjective norm was measured using 4 items developed by Venkatesh, and Bala (2008), and technology acceptance model was measured using 11 items developed by Davis, and Venkatesh (2004). Personal Prior Experience was measured using 5 items developed by Davis (1989). Construct means and standard deviations may be found in Table 2.

Table 2: Means, Standard Deviations, Reliabilities and Correlation of Constructs

					Correlation of Constructs and			ets and
					Avera	ge Variar	nce Extra	acted
Construct	Ν	Mean	S.D.	Cornbach's a	(1)	(2)	(3)	(4)
(1) PU	4	5.61	1.06	.972	.961			
(2) PEOU	4	5.37	1.04	.918	.790	.896		
(3) BI	3	5.84	1.06	.944	.745	.604	.948	
(4) SN	4	5.63	1.04	.952	.919	.784	.710	.936

Data Analysis

To test the model, partial least squares (PLS) is applied, a structural equation modeling (SEM) technique. PLS allows researchers to integrate measurement and

structural models (Bollen, 1989). The measurement model examines hypothesized links between indicators and latent constructs, whereas the structural model estimates hypothesized paths between exogenous (independent) and endogenous (dependent) latent constructs.

The structural model is investigated using SmartPLS 3.2.1. Path analysis was performed on the model using standardized maximum likelihood estimation. The path analysis method offers the advantage of testing the overall model fit with multiple endogenous variables as in the model as well as individual a priori hypotheses.

Results

Measurement Model

To assess reliability and validity using PLS, researchers typically calculate a block of indicators' composite reliabilities, average variance extracted (AVE) (Barclay, Thompson, & Higgins, 1995; Chin 1998). Interpreted like a Cronbach's alpha internal consistency reliability estimate, a composite reliability of .70 or greater is considered acceptable for research (Fornell, & Larcker, 1981). The AVE measures the variance captured by the indictors relative to measurement error (Fornell, & Larcker, 1981), and it should be greater than .50 to justify using a construct (Barclay, Thompson, & Higgins, 1995). Results indicate adequate composite reliabilities and AVEs (Table 2). To evaluate discriminant and convergent validity, the correlation of constructs and factor loadings be examined. When the square root of each construct's AVE is greater than the correlation of the construct to other latent variables, the correlation of constructs demonstrates discriminant validity. A second way to evaluate discriminant validity is to examine each indicator's factor loadings (Chin, 1998). Indicators should load higher on the construct of interest than on any other variable. The model's correlations of constructs (Table 2) and factor loadings (Table 3) demonstrate adequate discriminant and convergent validity.

	BI	PEOU	PU	SN
BI1	.923	.569	.663	.671
BI2	.961	.562	.724	.560
BI3	.960	.592	.731	.589
PEOU1	.612	.881	.725	.653
PEOU2	.565	.921	.738	.544
PEOU3	.470	.881	.652	.438
PEOU4	.504	.900	.709	.455
PU1	.717	.768	.966	.573
PU2	.726	.740	.963	.602
PU3	.714	.766	.972	.584
PU4	.707	.764	.941	.570
SN1	.424	.375	.376	.853
SN2	.447	.395	.397	.897
SN3	.454	.402	.405	.895
SN4	.691	.673	.703	.761

Table 3: Factor Loadings and Cross Loadings for the Measurement Model

Structural Model

A bootstrapping procedure was used to generate t-statistics and standard errors (Chin, 1998). Interpreted like multiple regression, the R2 indicates the amount of variance

explained by the model (Barclay, Thompson, & Higgins, 1995). To evaluate the full model, R2 values were calculated for computer anxiety and computer self-efficacy. Structural model results are presented in Figure 2 and Table 4.

Perceived usefulness demonstrated a direct, statistically significant, positive relationship with behavioral intention (H1 p < .05). Individuals who experienced more perceived usefulness were less likely to report high levels of behavioral intention, thus supporting Hypothesis 1.

Perceived ease of use did not demonstrated a direct, statistically significant, positive relationship with behavioral intention (H2 p > .05), thus Hypothesis 2 was not supported. Additionally, perceived ease of use had a direct positive relationship with perceived usefulness (H3 p < .05). These results not support Hypotheses 3.

Subjective norm demonstrated a direct, statistically significant, positive relationship with behavioral intention (H4 p < .05), thus supporting Hypothesis 4. Subjective norm demonstrated a direct, statistically significant, positive relationship with Perceived Usefulness (H5 p < .05), thus supporting Hypothesis 5.



Figure 2: Structural model.

	Original Sample	Standard Error	T Statistics
	(0)	(STERR)	(O/STERR)
H1: PU -> BI	.600	.055	10.980*
H2: PEOU -> BI	046	.054	.847
H3: PEOU -> PU	.667	.031	21.419*
H4: SN -> BI	.301	.039	7.673*
H5: SN -> PU	.211	.033	6.341*

*: p-value<.05

The moderating role of Experience

A bootstrapping procedure was used to generate t-statistics and standard errors (Chin, 1998). Structural model results are presented in and Table 5.

Increased experience did not demonstrate a direct, statistically significant, positive effect on the relationship between subjective norm and behavioral intention for IC Ticketing System will attenuate, thus not supporting Hypothesis 6.

Increased experience demonstrated a direct, statistically significant, positive effect on the relationship between subjective norm and perceived usefulness for IC Ticketing System will attenuate, thus supporting Hypothesis 7.

	Original Sample	Standard Error	T Statistics		
	(0)	(STERR)	(O/STERR)		
H6: EXP -> (SN -> BI)	.015	.031	.502*		
H7: EXP -> (SN -> PU)	.077	.028	2.779		
*: n value < 05					

Table 5: The Result of Moderating	Effect of Experience
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*: p-value<.05

Limitations

Before discussing the results and the implications of this study, it is important to consider the study's limitations. The primary limitation relates to external validity. Sampling was limited to voluntary respondents enrolled in medical center in north Taiwan. Therefore, the results might have limited generalizability to the individuals outside of the sample population in the nonacademic world. Further study is needed to assess the extent to which this study's results are applicable in diverse organizational and task settings.

Discussion and Conclusion

Overall, findings of this study provide insight into the experience, subjective norm, perceived usefulness, and perceived ease of use that relate to new information technology acceptance and use.

With the exception of perceived ease of use with behavioral intention, and the experience with the relationship between subjective norm and behavioral intention, analysis supported most of the hypothesized relationships and results complement prior research on experience, subjective norm, and TAM. Where many studies focus on experience, subjective norm for new information technology acceptance (Venkatesh, & Davis, 2000), this study extends prior research by demonstrating how experience relate to perceived usefulness and behavioral intention through the role of moderator.

Consistent with Venkatesh and Davis (2000), the findings of this study suggest that perceived usefulness influence behavioral intention of information technology acceptance, perceived ease of use influence perceived usefulness.

More importantly, the findings of this study illustrate how experience relate to the relationship between subjective norm and behavioral intention, and the relationship between subjective norm and perceived usefulness. Contrary to expectations, experience did not have a significant relationship with the relationship between subjective norm and behavioral intention.

Overall, findings shed light on how subjective norm, perceived usefulness, perceived ease of use affect behavioral intention (Davis, Bagozzi, & Warshaw, 1989; Venkatesh, & Davis, 2000), and the experience affect the relationship between subjective norm

and behavioral intention, and the relationship between subjective norm and perceived usefulness (Venkatesh, & Davis, 2000). Research suggests that personal prior experience is positive with the relationship between subjective norm and perceived usefulness.

This study is a first step in developing a more robust understanding of individual differences that may inform managers' decisions, enhance trainings' effectiveness, and extend the understanding of factors linked to new information technology usage. This study articulated and tested a conceptual model that posited three traits (subjective norm, perceived usefulness, and perceived ease of use) would influenced behavioral intention individual differences. Although there were no effects for perceived ease of use, support for the relationships between subjective norm and perceived usefulness with behavioral intention, and subjective norm with perceived usefulness.

Given perceived usefulness and perceived ease of use s influence on behavioral intention (Venkatesh, & Davis, 1996), results underscore the importance of extending the theoretical surrounding individual differences in the information technology context. By identifying how dispositional traits influence more individual differences such as subjective experiences, norm, perceived usefulness, and perceived ease of use, the future studies may develop a more comprehensive model of how organizations encourage IT acceptance and use.



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Latent Semantic Analysis Based Automatic Cross-Language Plagiarism Detector for Paragraph Written in Two Syntactically Distinct Languages

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Abstract

The number of scientific publication in Bahasa Indonesia is now in steady rise. As a speaker of under-resourced language, Indonesian author often consult documentation in other language, especially English. The necessity for an automated cross-language plagiarism checker has now become prominent. There are several methods available for an automated cross-language plagiarism detection but, most of them only works well on syntactically similar language. Unfortunately both Bahasa Indonesia and English come from a very different language family, therefore they have completely different syntax. This paper investigates the possibility of expanding the use of Latent Semantic Analysis (LSA) for an automated cross-language plagiarism checker between two syntactically distinct languages. LSA's bag of word concept is exploited, removing the necessity to use grammatically correct automatic translator. Several modifications to the LSA algorithm are also proposed to improve its performance. The proposed a proof of concept algorithm is capable to find similarities between a paragraph and its exact translation written in different languages. The exact translation of a paragraph can be identified with 81.82% up to 90.91% accuracy in all test cases.

Keywords: latent semantic analysis; plagiarism detection

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Introduction

The convenience provided by high level technology not only affect life in a positive way, but also in a negative way. Wide range of information is available on Internet which is practically accessible by everyone. Scholars are able to get the works of other people from the Internet and then by doing a few of editing, then the work can be submitted as their own. One renowned form of editing is translating the work into another language, which belongs as an act of plagiarism. While plagiarism detection can be conducted manually, it is not efficient as it takes a long time and effort to do. An automation for plagiarism detection which is also called computer assisted detection due to it uses of a certain software on a computer (El Tahir Ali, Dahwa Abdulla, & Snášel, 2011). Furthermore, the automated plagiarism detection system is required to be able to detect cross language similarity in order to detect cross language plagiarism.

The system covered in this paper was developed to be a semantic-based computer assisted plagiarism detection. The semantic-based algorithm used is Latent Semantic Analysis to find the similarity between two documents. The algorithm also have to support translation process between the two languages. Latent semantic analysis, which is a semantic-based method, describes a document as the words it contains and the frequency of occurrence of the words. Therefore, a fully accurate translation process between languages is not needed in the system. The system only has to cover translation per words and overlooks the grammar correctness.

Modified LSA

Latent Semantic Analysis is a technique used to represent words as a statistical computation based by its context in a document. It creates a term-document matrix and apply SVD followed by dimension reduction as a way to predict the relationship between words in a document.

LSA can uses words which appear in more than one document as the matrix rows (Landauer, Foltz, & Laham, 1998). While the column represents each document, so that the matrix element represents frequency of occurrence of the word represented by the row in the document represented by the column. Each element of the matrix can be transformed afterwards by assigning a weight according to the significance of each term in the document.

The next step is to apply SVD to the term-document matrix which decomposed the matrix into three component matrices. The first component matrix represents the original matrix row entities as an orthogonal vector matrix. Second component matrix is a diagonal matrix which contains a scalar value known as singular values. This matrix acts as the multiplying factor such as that if the three component matrices are multiplied, the original matrix will be reconstructed. While the third component matrix is another orthogonal vector matrix which represents the original matrix column entities.

When the singular values are reduced by setting one or more element in the second component matrix element to 0, the multiplication result of the three component matrix will be a different matrix, rather than the original. The new matrix will contain different elements from the original, which means there are changes in frequency of occurrence of the terms. As a matter of fact, a document that originally does not contain a certain term, can have a small frequency of occurrence of that term in the

new matrix. Due to dimension reduction done to the second component matrix, the reconstructing process will predict which term appears in the document based on the similarity that document has with another document. For instances, a document that contain words such as "father", "mother", and "son" most likely also has the word "daughter". Therefore, by comparing it to another document that also has the words "father", "mother", ison", or "daughter", the system will be able to predict the frequency of occurrence of the certain term.

The vector space in LSA process is constructed of a large corpus of documents. Therefore, it takes relatively long time to process especially if each document contains lots of words. To overcome this problem, at the Electrical Engineering Department at the Faculty of Engineering, University of Indonesia we have developed and implemented a new LSA-based algorithm to find the similarity between two texts.

The new developed LSA algorithm uses term-sentence matrix rather than termdocument matrix to separate each document into different vector spaces thus reducing the duration of the overall process. Each document is in the form of paragraph and has its own vector space which is a term-sentence matrix. The terms used in creating the matrix depend on the program function and usually is defined by the user.

To measure the similarity between two documents in the common LSA, we use the cosine between column vectors or the comparison between their lengths (Golub & Van Loan, 1996). Whilst the new developed algorithm uses frobenius normalization of the second component matrix as the vector, so that to measure the similarity between two documents we use the cosine or the comparison between the lengths of frobenius normalization of the second matrices. Equation (1) and (2) are used to normalize a matrix using frobenius normalization (Golub & Van Loan, 1996)

$$\|\boldsymbol{A}\|_{F} \equiv \sqrt{\sum_{i=1}^{m} \sum_{j=1}^{n} |a_{ij}|^{2}}$$
(1)
$$\|\boldsymbol{A}\|_{F} \equiv \sqrt{Tr(\boldsymbol{A}\boldsymbol{A}^{H})}$$
(2)

The aim of this research was to use a modified LSA-based algorithm to detect the similarity between two forms of a paragraph, one is written in English and another written in Indonesian. The similarity is measured using the cosine and the comparison between the lengths of frobenius normalization of the second matrices. The method was tested on a sample of 11 paragraphs from three different topics. The accuracy of the system was compared between four different scenarios, with the results could go into three categories. The categories of the results are able to detect the similarity between the appropriate paragraphs, able to detect the similarity of topic between the paragraphs, or unable to detect the similarity between appropriate paragraphs. The goal of this research is as a proof of concept that the new modified LSA is capable to detect the similarity between two paragraphs written in different language.

Modified LSA Implementation For Plagiarism Detection Between Indonesian And English Paragraphs

This computer assisted plagiarism detection utilized LSA, which is categorized as a semantic-based method. Latent Semantic Analysis is a vector space information retrieval model, which represents an object as the characteristics it has (Rehurek, 2007). The representation of a document in this context is the words it contains and the frequency of occurrence of each word, with the assumption that this representation

covers substantial information that the original document contains. The order of occurrence of each word is not significant in LSA process, therefore LSA could find the similarity between two documents without being affected by the grammar of each document. Thus the plagiarism detection system between Indonesian and English paragraph was developed using LSA.

LSA is a method to analyze a document uses of words, hence it can be used to detect the similarity between two documents (Landauer & Dumais, 1997). Then the similarity value will also indicate the similarity in topic and use of words between the two documents. In order to be able to compare two paragraphs written in different languages, the system was designed to translate an Indonesian paragraph into English. This is done by using a simple dictionary database to translate the paragraph per words. The translation process is conducted without being affected by grammar correctness.

This system is developed to be a proof of concept that LSA is capable to detect plagiarism between an Indonesian paragraphs that is written in reference to an existing English paragraph. A modified LSA method, which separates the test and reference vector space, is used in this system to simplify overall process.

The first step in this system development was to collect a number of paragraphs written in English about several different topics. This collection of paragraphs was saved in a database to facilitate as an input. Then each paragraph was translated into Indonesian manually, this is done to obtain the Indonesian paragraphs used to test system accuracy. The collection of Indonesian paragraphs was also saved in database for the same reason. A database consists of a collection of English and Indonesian paragraphs were obtained in this development step.

The test paragraphs, which are written in Indonesian, were translated per word into English without regardless of the grammar correctness. A dictionary database, which is obtained from a free translation website called gkamus, is used in this system. The database contained of two tables, one is for translating Indonesian to English, and another to translate English to Indonesian.

The next step was to explode the reference paragraph per word and save them into an array. This array would be used later as the keywords or terms to create term-document matrix in LSA processing.

Each test and reference paragraph was made into term-document matrix separately. This method came from the modified LSA, which is developed to overcome LSA disadvantages in duration and resource to process. This method works by separating test and reference vector space, therefore simplifying SVD process. The similarity between the two paragraphs were obtained by comparing their vector lengths or the angle formed between frobenius norm vectors of the second component matrices from SVD process.

Method

This research used 11 paragraphs from 3 different topics which are written in English as the reference. These paragraphs were translated into Indonesian and the translation results were used as the test paragraphs. The translation process was not exact because it only translated word per word and not paying attention to the grammar. Because the plagiarism detection system is prone to the exact use of words, not to the exact use of grammar. We used a non-commercial English-Indonesian dictionary database to do the translating.

Reference and test paragraphs were made into term-sentence matrices and several modifications are applied in the process to find the most proper algorithm. The accuracy of a modified algorithm was assessed by the comparison value between reference and test paragraph. If a method succeed in detecting the similarity between a reference paragraph and its translation, then the method was an effective one to detect plagiarism. However, if a test paragraph was detected to be similar to a different paragraph from different topic, then the method would be assessed to be less efficient.

The first modification was to remove stop words from LSA process. Stop words are common used words which are not significance to analysis process (Manning & Raghavan, 2009). Including stop words into LSA process will increase the possibility of disrupting the result of the process. Therefore, we developed an algorithm to automatically erase stop words from the paragraph. This process were conducted on English reference paragraph and also Indonesian test paragraph. The algorithm designed to erase stop words from each test and reference paragraph is shown in **Error! Reference source not found.**

Whilst the next modification was the terms used to create term-sentence matrix. There were two type of terms used in in this research, the first one used words collection coming from reference paragraph as the terms, and the second one used words collection from reference and also test paragraph as the terms. The algorithm designed to use keywords from test and reference paragraphs to create term-document matrices is shown in **Error! Reference source not found.**

Based on these two modifications, four different algorithms were designed for this system. The four algorithms are:

- Without removing the stop words and the terms used were derived from reference paragraph only.
- Without removing the stop words and the terms used were derived from test and reference paragraphs.
- By removing the stop words and the terms used were derived from reference paragraph only
- By removing the stop words and the terms used were derived from test and reference paragraphs.

Results

The test results were in form of accuracy of the program, which is the percentage of Indonesian paragraph detected to be similar with the related English version. Smaller angle value and nearer length comparison value to 100 indicates higher similarity between two paragraphs. The results of the test came into three different categories, which are:

- Test paragraph is stated to be most similar with the reference paragraph which is the English version of it. This means the test result is accurate.
- Test paragraph is stated to be most similar with a reference paragraph which is not the English version of it, yet the two paragraphs are about the same topic. This means the test result is less accurate, yet still succeed in detecting the similarity in topic between the two paragraphs.
- Test paragraph is stated to be most similar with a reference paragraph which is not the English version of it, and also the two paragraphs are not about the same topic. This means the test result is not accurate.

The test was conducted using 11 paragraphs written in English as the reference paragraphs and their Indonesian translations as the test paragraphs. The similarity values between each test paragraph and 11 reference paragraphs, so that we have the similarity values between every test paragraph and reference paragraph. The 11 paragraphs come from four different topics, which are four paragraphs about organism, three paragraphs about biology, and four paragraphs come from the biography of Albert Einstein.

The results of this tests came in as the similarity value between test and reference paragraphs. The similarity value could be in form of vector lengths comparison in the scale of 100. The data taken from this indicator is in the form of difference with 100, where smaller difference means the two paragraphs are similar. Another form of similarity value is the angle formed by the two vectors with the same length. To equalize the lengths of two vectors, we could slice the matrix which contains more element so that it has the same element with the other, therefore we would obtain the angle between matrices with least element. Or we could also pad the matrix which contains less element so that it has the same element with the other, and we would obtain the angle between matrices with most element.

The first test was conducted without removing the stop words and the terms used were derived from reference paragraph only. The results were in the range of 27.27% to 45.45% succeed in detecting the similarity between the right paragraphs. 18.18% to 36.36% of the test results only succeed in detecting the similarity in the topic covered by the paragraphs. While 27.27% to 36.36% of the test results failed in detecting the similarity between the right paragraphs, yet also failed in detecting the similarity of the topic.

Indicator	% Succeed in Detecting Similarity Between Paragraphs	% Succeed in Detecting Similarity of Topics	% Not Succeed in Detecting Similarity
Length Comparison	27,27	36,36	36,36
Angle Between Least Elements	45,45	18,18	36,36
Angle Between Most Elements	36,36	36,36	27,27

Table 1. Testing Results without Removing Stop Words and Using Terms Derived from Reference Paragraph

Table 1 shows the results of the first test. As it can be seen, the results were not quite accurate. This can be caused by many reasons. The first reason is that the dictionary database used is less accurate in translating word-to-word, so that translating a certain Indonesian word could deliver a lot of different English words. Furthermore, another case shows that there are few words not contained in the database. Because the dictionary database was not capable to detect affixed words and the words adopted from different language.

The second test was conducted without removing the stop words and the terms used were derived from reference paragraph and also the test paragraph. The results were in the range of 9.09% to 27.27% succeed in detecting the similarity between the right paragraphs. 9.09% to 27.27% of the test results only succeed in detecting the similarity in the topic covered by the paragraphs. While 45.45% to 72.73% of the test results failed in detecting the similarity between the right paragraphs, yet also failed in detecting the similarity of the topic.

Table 2. Testing Results without Removing Stop Words and Using Terms Derived from Test and Reference Paragraph

Indicator	% Succeed in Detecting Similarity Between Paragraphs	% Succeed in Detecting Similarity of Topics	% Not Succeed in Detecting Similarity
Length Comparison	27,27	27,27	45,45
Angle Between Least Elements	18,18	9,09	72,73
Angle Between Most Elements	9,09	18,18	72,73

The results of second test are shown in Table 2. The results of this test were not quite accurate. There are several causes for this. The first reason was similar to the first test. The dictionary database used in this system is less accurate in translating word-perword. There were many Indonesian words translated into several different English words. Another reason was that the combined terms from test and reference paragraphs used to create the matrices affected the results. If the terms were dominated by test paragraph words, then the test matrix vector length could be much greater than the reference matrix vector length. Therefore, the two paragraphs could be deemed similar by LSA.

The second test was conducted by removing the stop words and the terms used were derived from reference paragraph only. The results were in the range of 81.82% to 90.91% succeed in detecting the similarity between the right paragraphs. 9.09% of the test results only succeed in detecting the similarity in the topic covered by the paragraphs. While 0% to 9.09% of the test results failed in detecting the similarity between the right paragraphs, yet also failed in detecting the similarity of the topic.

Indicator	% Succeed in Detecting Similarity Between Paragraphs	% Succeed in Detecting Similarity of Topics	% Not Succeed in Detecting Similarity
Length Comparison	90,91	9,09	0
Angle Between Least Elements	81,82	9,09	9,09
Angle Between Most Elements	90,91	9,09	0

Table 3. Testing Results by Removing Stop Words and Using Terms Derived from Reference Paragraph

The results of this test were accurate, seen from high accuracy average for the three indicators, as shown in Table 3. The anomaly in this test was caused by the same reason as the two previous tests. There were several Indonesian words which were translated into few less appropriate English words, and also several Indonesian words unable to be translated. Therefore a lot of terms used to create the matrices in LSA were not precise and the results are less accurate than expected.

The fourth scenario was a test by removing the stop words and the terms used were derived from reference paragraph and also the test paragraph. The results were in the range of 18.18% to 27.27% succeed in detecting the similarity between the right paragraphs. 18.18% to 27.27% of the test results only succeed in detecting the similarity in the topic covered by the paragraphs. While 45.45% to 63.64% of the test results failed in detecting the similarity between the right paragraphs, yet also failed in detecting the similarity of the topic.

Table 4. Testing Results by Removing Stop Words and Using Terms Derived from Test and Reference Paragraph

Indicator	% Succeed in Detecting Similarity Between Paragraphs	% Succeed in Detecting Similarity of Topics	% Not Succeed in Detecting Similarity
Length Comparison	27,27	18,18	54,55
Angle Between Least Elements	18,18	18,18	63,64
Angle Between Most Elements	27,27	27,27	45,45

Topic	Without	Without	By removing stop	By removing
	removing stop	removing	words and using	stop words and
	words and	stop words	terms derived	using terms
	using terms	and using	from reference	derived from
	derived from	terms derived	paragraph	test and
	reference	from test and		reference
	paragraph	reference		paragraph
		paragraph		
Organism	25%	25%	91,67%	50%
Biology	33,33%	11,11%	88,89%	11,11%
Biography of	50%	16,67%	83,33%	8,33%
Albert				
Einstein				

Table 5. Testing Results Based on Topics

As shown in Table 4, the results of this test were not quite accurate. The reason of several anomalies occurred in this test was that a number of test and reference paragraphs contain many stop words, so that when the stop words were excluded from LSA process, the matrices created would be small. This caused the results to be less accurate in LSA process using terms derived from test and reference paragraphs.

The percentage shown in Table 5 is the percentage of paragraphs which were succeed to be detected as similar with its English version (reference paragraph) from total paragraphs coming from the same topic. For instances, at the first test, which is without removing stop words and using terms derived from reference paragraph, from four paragraphs about organism, vector lengths comparison as indicator succeed in detecting the similarity between the exact paragraphs one time, angle formed between least element vectors as indicator succeed in detecting the similarity between the exact paragraphs one time, and angle formed between least element vectors as indicator succeed in detecting the similarity between the exact paragraphs also one time. Therefore, from four paragraphs about organism, the average of accurate detection is 25%.

The result also shows that the test by removing stop words and using terms derived from reference paragraph only obtained the most accurate results than the other tests in three topics. While the fourth algorithm obtained the worst result in biology and biography of Albert Einstein paragraphs. This is caused by a lot of incorrect translations occurred while translating the words contained in the paragraphs about these two topics. Several Indonesia words were left untranslated and there were also few words translated into wrong English words. Furthermore, paragraphs which were tend to be short and contain many stop words gave poor results on the test by removing stop words and using terms derived from test and reference paragraph.



Fig. 1. Algorithm Effect to the Accuracy of Program

The testing results graph is shown in Fig. 1. Overall, the best result was obtained using the third algorithm, which is by removing stop words and using terms derived from reference paragraph to create matrices in LSA process. Whilst, the most exact indicator of similarity is the vector lengths comparison.



Fig. 2. Paragraph Topic Effect to the Accuracy of Program

Fig. 2 shows the effect of paragraph topic to the accuracy of plagiarism detection. As it can be seen, the test by removing stop words and using terms derived from reference paragraph gave the best results. The most accurate detection obtained from the test on paragraphs from organism topic. Whilst the least accurate detection obtained from the test by removing stop words and using terms derived from test and reference paragraph on paragraphs from the biography of Albert Einstein.

Conclusions

LSA can be used to detect the similarity between two paragraphs written in different languages, which are test paragraph written in Indonesian, while the reference paragraph written in English. Cosine and the length comparison between the Frobenius normalization of two paragraphs are able to be used as the measure of similarity. The most accurate test result acquired from scenario three, which is a test by removing the stop words and the terms used were derived from reference paragraph only. The results reaches 81.82% to 90.91% accuracy in detecting the similarity between the right paragraphs. Our research indicates that LSA are more than capable to be used to detect plagiarism between a papers written in Indonesian with another paper written in English.



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Case Study Applied to Smart Learning's Quality Management for Working Employee

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Abstract

Emergence of diverse smart devices by developing information and communications technology has affected every phase of life. These devices able us to pursue various conveniences of lifestyle. The smart device learners now have an active demand and they are asking for the most appropriate learning service for technology's evolution and proliferation. With the change in smart learning environment, smart learning adapts to working employee improvement training. Through the introduction of smart learning, more training chances will be provided for active learning of working employees and training result seems to improve. However, problem of low program quality has risen due to expansion and overproduction and criticism is being made which can lead to decrease of the education quality. Due to this problem, the exertion to reform the quality of education service by systematic management of smart content is demanded in several learning fields. Therefore, this study is trying to introduce Korean examples to increase the effectiveness of working employees' ability improvement training. This is to improve smart learning quality by making evaluation sheet and conducting pilot tests. Thus providing qualified smart learning process to training market.

Keywords: Smart device, Smart learning, Quality evaluation index of smart learning

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Introduction

While e-learning was a one-way form applicable in web-based environment, learning type in the smart environment aims bidirectional learning with learner-centered education. This type is possible by the combination of smart infrastructure (such as smart phone, tablet personal computer and smart television) and software technology (such as social network and virtual reality). The evolution and expansion of technology is demanding the most suitable learning service based on the needs of proactive working employee.

Sunwoo Nam(2014) said that the term smart learning started with the development of smart phone typified by iPhone made in Apple, the United States. Although a number of scholars have studied about the term, it is not academically defined.

Adapting Education to the Information Age(2011) referred that smart learning is not only an intelligent and personalized learning system but also a power system which can innovate whole educational system including learning environment and contents, teaching method and evaluation. In this paper, it mentions that SMART could be interpreted as a learning method of Self-directed and Motivated, Adaptive learner's level and aptitude, Rich resource, Technology embedded. Smart learning is an image of future education which has characteristic of education environment where any information devices can utilize hardwired and wireless network in learning. In addition, smart learning means extension of time, space, learning materials, and method surpassing the limitation of traditional class instruction.

Index Content		Content
S	Self-directed	Learner is changed from knowledge consumer to leading producer and instructor is altered from knowledge transmitter to assistant via smart learning.
М	Motivated	Smart learning learner's interest is aroused by restructuring knowledge from formulaic text centered knowledge to experience based one.
A	Adaptive	Learning facility evolves from the already existing place of transferring massive amount of knowledge to the place of supporting learning suited for level and aptitude.
R	Resource free	Public, private, and individual institutes freely use knowledge contents on education.
Т	Technology embedded	Various learning methods are viable through information technology which opens learning tools to people.

Source : Adapting Education to the Information Age. 2011

Figure 1: Smart learning characteristics

The Study

There are three reasons why education fields including distance learning and elearning, smart learning are stressed as the necessity of quality management. First, highly arguing that quality of education resource and process should be unveiled to the public, people claim responsibility for the educational institution(Jaewoong Kim, et al., 2000; Youngju Joo, et al., 2005; Hulpiau & Waevtens, 2001; Robinson, 1999). Second, with educational market becoming globalized and corporatizaed and showing up a variety of programs from Korea and abroad, ensuring competitiveness is the most significant factor to put differentiation against other companies(Robinson, 1999). Finally, recent concerns and worries have been expressed at decline in quality of education based on negative appraisals about traditionally conformed of training(Youngju Joo, et la., 2005). The spread of traditional e-learning and cyber education, smart learning appeared with quantitative expansion and overproduction of educational program, and this is resulting unfavourable sentiments about the quality level of the programs. While these problems are pointed out, it is not easy to achieve the goal of learning just by providing various educational program or service to the people. For these, effort to make better condition of service quality is requested by systematically managing whole production process of e-learning, cyber learning, distant learning and smart learning areas.

Because smart learning contents are fundamentally operating in the mobile devices such as smart phone and pad, it needs to review the researches for not only mobile learning, quality management of contents or program, evaluation standard or criteria but also characteristics and quality management of smart learning. By comparison with wire based e-learning, wireless network centered mobile learning has diverse feature in technological and educational ways. First, Ik Jang, et al.(2003) emphasized the features of mobile learning which is mobility, accessibility, expandability, hurriedness, Secondly Insook Lee(2006) said nomadism, interactivity, extension of sharing culture, improvement of reflective learning. Thirdly Ogata, et al.(2004) argued the permanent management of learning resource, accessibility, immediacy, contextuality of learning activity. Especially, Junghoon Leem(2009) integrated characteristics of mobile device, content, and education that smart learning had and proposed six marks such as mobility of learning space, utility, usefulness of educational resource access, personalized learner's subject, simplicity of learning content, interactivity with learner, and contextuality of learning activity.

When smart device was in the initial phase, smart learning meant one of learning types that can work with simple educational application or visual of the video by using the devices. Nowadays, however, as function of smart phone or mobile devices is growing to intelligent and advanced, smart learning is extending its meaning to personalized one. Junghoon Leem(2013) synthesized various research related with definition, meaning and characteristic of smart learning and deducted the five core properties that the learning must have, (1) the newest smart device based instruction with smart technology, (2) intelligent, adaptive and customized instruction, (3) social interaction and collaborative learning utilizing social network, (4) convergence combining formal with informal learning, (5) boosting tactical mind and problem solving learning. Hyunchule Kim(2011) suggested that four characteristics that smart contents must have is participation, sharability, collaboration and accessibility, also, Byungro Lim, et al.,(2013) presented five things: equipment utilization, cooperative

interaction, scalability of knowledge, immediate accessibility and contextual adaptability.

1. Smart learning type for working employee

For the corporate e-learning market in Korea, in the survey conducted in 2010, the agency responded that had the investment plans for 2011 smart learning accounted for 50.5% as a remote training institutions, in accordance with the continuous expansion of participation and investment in the smart environments, smart learning of remote training institutions are expected to have been larger than before(Sookyoung Lee, et al,. 2010). Thus, when considering the number of smart phone subscribers and the level of participation of domestic smart learning in e-learning training institutions, readiness of smart environment based on smart learning for the consumers of remote training(working employees) and suppliers(training institutions) can be seen at a very high level when compared to 1998.

In the e-learning environment and training environment of Korea incumbent, there are four application types of smart learning developed for quality management.

Index	Contents			
Smart	This is mobile-specific training courses and utilizing the			
devices	characteristics and advantages of mobile positively. This learning			
dedicated	model is made on a mobile learning and the BA management takes			
training	place through learning the system.			
Smart	■ This is learning courses from both PC(internet) and mobile devices available training and makes the connection between the PC and			
devices in				
parallel	mobile devices progress. This is reflected in the model that			
training differentiates properties between the devices.				
Multimedia	This is provided in the form of a multimedia such as video and text,			
book based	the main content of the training combined digital books(e-book, web-			
training	book). This is a type that enables the personalized training level			
uannig	through interaction between the learning content and instructor.			
	This is not belonging to the type of 1, 2 and 3, however, it leverages			
	advanced information and communication technologies to improve the			
Dlatform	limitations of existing mobile incumbent vocational training.			
based training	Moreover, this refers to all types of creative made, attempted to			
	increase the efficiency and effectiveness of the training. Utilizing			
	various mobile platforms, solutions other than those existing in the			
	form of training and remote training types of creative forms are			
	included in here.			

Source : Korea University of Technology and Education

Figure 2: Definitions of smart learning type

2. Quality evaluation index of smart learning for working employee

Quality control procedures of smart learning can be divided into two steps. In the first step of quality management, it should be made sure it is related to the job performance

and smart learning that is appropriate and in the second step it should not only check the learning plan activity of smart learning, learning activity for performance, participation of assessment but also written the comment about inappropriate topics.

2.1. Meet the basic requirements of smart learning

In the first step of examination, this should examine the suitability of the relevance and smart learning with job performance. This review aims to ensure that the remote training program meets the screening requirements of smart learning. If the contents receive an appropriate decision as a result of this review, it has determined that the configuration requirements is a smart learning. That is, the contents is recognized with the higher job performance and relationships. However, if it receives an unsuitable decision, this means that the lack of some components related to job performance cannot be recognized as a smart learning. In this step, panels reviews whether the contents of the basic components as a remote training course offers(this includes content delivery methods, assessment items and learning activities.), self-directed training of working employees and it meets the basic requirement for smart learning process by learning this content. If the content is configured to describe the learning materials with the video, since this is one of the types of teaching and learning activities rather than just listening, it must be made within the program together. Detailed audit criteria can be equipped with the basic requirements of remote training process and specifically the questions such as 'is the characteristic of the smart devices(screen size, interactive method, interface) and functions properly reflected in the training process?' or 'what specific teaching and learning activities are included in smart devices?' can be applied.

In the next step, this examines the appropriateness of the training process's level. This review aims to give training grade of the smart learning process, depending on whether or not to reflect on topics such as working employees' training type and industry employment subject to employee training and job training, the potential of industrial application and instructional design. Through this review process, the content will be granted one of the A to C grade. Receiving an A grade means that the content meets at least three of the ten detailed clauses and getting a B grade means that it meets at least three of the five detailed clauses and finally taking C grade means that it meets required items in the detailed clauses. However, there are items that meet class A topic at which details of class B may be accepted as an alternative.

When evaluation request is made, evaluation institution decides the class detail items of training process, evaluates according to detail criteria selected by Korea University of Technology and Education and gives the training grade. Korea University of Technology and Education evaluates related to grade made by the evaluation request institution but the grade can be adjusted.

This table categorizes the first step of detail evaluation items of smart learning.

Evaluation clause	Content	Result
1. Job performance Relation	• Whether the training process is directly related to increasing employee's job performance.	AppropriateInappropriate
2 Demote Training	• Whether it has the basic requirement for	
2. Remote Training process Suitability	 Whether it has the basic requirement for smart learning process. 	□ Appropriate □ Inappropriate

Source : Korea University of Technology and Education

Figure 3: Evaluation clauses in the first step

2.2. Propriety of learning plan activity

The second step of quality evaluation evaluates the suitability of learning planning activity. This has the objective to identify the content suitability of learning orientation and training objective setting. This item utilizes process outline, LMS, and contents for evaluation data. Specifically, it evaluates whether training time, procedure for understanding learning process is introduced well and has the appropriate content. The result of evaluation is in suitable or unsuitable. Next table categorizes the detail items second step in smart learning quality evaluation.

Evaluation item Content		Result
	■ Whether the introduction of learning	
1. Learning	method, process or teaching faculty is	Δ n propriate
Planning Activity	appropriately presented?	
Suitability	Whether training object of training process	
	is appropriately presented.	
2. Learning	■ Whether training content and method are	- Appropriate
Performance	composed of latest trend and appropriate for	
Activity Suitability	Activity Suitability meeting training objective.	
	■ Whether evaluating content of meeting the	
3. Evaluation	training objective is visible or made of	- Appropriato
Participation	appropriate method.	
Activity Suitability Whether appropriate feedback is made		
	about evaluation task submission.	

Source : Korea University of Technology and Education

Figure 4: Evaluation item in the second step

This step sets the checklist according to evaluation standard about evaluation items and is shown on the next table.

Evaluation item	Detailed evaluation item	Checklist	Result
Learning Planning Activity	1. Orientation	■ Are training time, procedure(period, evaluation method, finishing standard) for understanding learning process introduced well and is the content appropriate?	□ Appropriate□ Inappropriate
	2. Setting	■ Is the introduction of the teaching staff of this process appropriate? (Reference check essential)	□ Appropriate□ Inappropriate
	Objective	• Is the training objective or target about training process well present and is the content appropriate?	□ Appropriate□ Inappropriate
	1. Learning Readiness per Class	 Is LMS or contents able to identify? Is each period's training objective introduced and is the content appropriate? 	AppropriateInappropriate
Learning Performance Activity	2. Process Learning	 Is training objective, target, and content well connected? Doess the training content appropriately reflects the latest industrial trend? Does the training content appropriately reflects latest law revision? Is effective training method being used to learn training contents? Is learning encouragement function made on web(LMS)? 	 Appropriate Inappropriate
	3. Learning Arrangement	• Does the survey presents and makes function to write satisfaction or opinion on learning made on LMS?	□ Appropriate□ Inappropriate

-		-	
Evaluation Participation Activity	1. Evaluation Examination	 Is appropriate evaluation method used for training objective, target, content, method and is the content appropriate? Is answer, explanation, grading standard, point, question objective for each questions well introduced? Is test or task question related with training objective introduced in item pool method and is the content appropriate? Is learning evaluation of training process appropriately presented on the web? Is Q&A function related with the presented evaluation made on LMS? In examination, is test period and questions made on LMS? 	 Appropriate Inappropriate
	2. Submit the Evaluation Subject	■ Is the content of teaching faculty's feedback guideline about evaluation appropriate?	□ Appropriate□ Inappropriate
	3. Check the Evaluation Result	■ Is grading result feedback function made on LMS?	AppropriateInappropriate

Source : Korea University of Technology and Education

Figure 5: Checklist of detailed evaluation item in the second step

When contents are appropriately composed of each detail evaluation checklist items of second step of evaluation item, the content gets a suitable grade. However, when one item gets an unsuitable grade, the whole evaluation item becomes unsuitable. For example, in the evaluation participation item, when evaluation examination gets a unsuitable grade for evaluation result, the whole item gets unsuitable grade although results of other detail items are suitable.

Conclusions

With adapting smart learning, individualization training for employees can be reinforced. By combining necessary contents according to each employee's need and level, adapting managing method for making training process is needed. To increase employee's field application, necessary information, knowledge presentation, and interaction between teacher and learner should be activated. Also, to actively utilize the strength of smart learning, which is mobility and accessibility, teaching activity should be conducted. To do this, quality evaluation index of smart learning which reflects characteristic and contents of teaching has to be designed.

Effectivity analysis about job capacity improvement conducted on employees who completed the smart learning process and analysis about the effect of smart learning on manager and teaching faculty should be made.



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Engagement and Outreach: A Content Analysis of Students' Instagram Postings

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Abstract

Instagram, a social media tool designed for photo and video sharing, is increasingly being used as an outreach and engagement tool by companies and individuals. This paper reports a study on the content analysis of Instagram updates. The study was inspired by the need to incorporate the use of Instagram in English lessons in a Summer School Program in Malaysia which involves students from Japan. The objectives of the study are to identify the subjects of photos posted and the information written in the photo captions by the Instagram users. The data of this study are seven-day Instagram updates of 30 final year TESL students. These data were analyzed using thematic analysis by triangulating the photos and their captions. The finding shows students are keen to post photos of their food, friends, and fashion. Based on the conclusions of the research, a new lesson plan is recommended for the future Summer School Program.

Keywords: Instagram, Social Media, English, Computer Mediated Communication, Summer School, Content

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Introduction

Instagram, in a simple definition, can be described as a photo or video sharing app on mobile platform. The app can also be synced to other popular social media applications such as Facebook, Twitter and Tumblr. Together with the photos and videos, users usually write a caption to give a little explanation to their followers. The Instagram app is very popular among Malaysian young adults as a platform for expression. It seems to lend itself nicely as a tool to practice a target language. Universiti Teknologi Malaysia offers a Summer School Program which focuses on English language course together with cultural exposure. In preparing the program to students from Japan, we saw that the Instagram app might be suitable tool to enhance learning and to trigger the need to use the target language. Nevertheless, before adapting Instagram as a medium for learning several aspects Instagram postings need to be studied. One of it is to determine what do users post on Instagram.

Objective

This paper reports a small scale study on the content analysis of Instagram updates. The study was inspired by the need to incorporate visual communication elements in English lessons in a Summer School Program in Malaysia which involved students from Japan. The objective of this study was to identify the subject of photos being uploaded by students on their Instagram account.

Literature Review

The Instagram is a form of micro blog app. A blog can be defined as a frequently updated websites on the internet. There are blogs on photos, news, videos and just plain journal entries. Meanwhile, Java et. al. (2007) stated that micro-blogging is a new communication tool where users update their statuses in very short posts. Twitter and Instagram fall under this genre. Twitter limits itself to 140 characters per entry. Meanwhile, Instagram focuses on photo and video updates. Instagram limits itself to videos of 15 second duration. These two platforms are widely used throughout the world because of the simplicity of their functions and features.

The main feature of Instagram is photo-sharing. Hu, Manikonda and Kambhampati (2014) explained that Instagram enables users to capture, edit and share their life moment visually and instantaneously. Users can take pictures using applications or using existing photos in their mobiles and share them to world in split seconds. This feature encourages users to share many great things that happen in their life with others. User can also upload short video clips up to 15 second duration. This short duration might look like a drawback but logically, it fits the overall principle of Instagram as a micro-blogging tool.

Usually, users publish their photos together with a simple explanation or image caption. The caption assists in explaining the photos and to point out what readers or followers should focus on when looking at the photos. Ordonez et. al. (2011) in his article stated that, "producing a relevant and accurate caption for an arbitrary image is an extremely challenging problem, perhaps nearly as difficult as the underlying general image understanding task." Describing a complex image into simple words can be very challenging. One needs to be media literate to come up with effective updates.
Livingstone (2004) describes media literacy as the capacity to access, study, evaluate and compose messages across different context. In order to survive the digital age, people need a set of skill that will help them to tackle everyday challenges. Heins and Cho (2003) states that media literacy education teaches students how to analyze messages that may involve commercial advertising, ethnic and gender stereotypes, violence, or other complex issues. Some Instagram postings are interesting and draw many "likes" from viewers. Perhaps, these are posted or handled by users who have the high media intelligence.

Hu, Manikonda and Kambhampati (2014) wrote a paper on "What We Instagram: A First Analysis of Instagram Photo Content and User Types." They studied what type of photos do people post on Instagram, how do the users differ based on the type of images they post and the relationship between the users' photo content and the number of their followers. Their data analysis was collected based on the Instagram Application Programming Interface (API), a qualitative categorization of Instagram photos and a quantitative examination of users' characterization with respect of their photos.

This present study did not attempt to replicate the study above. The only similarity is that both studies were interested to do a content analysis of Instagram updates. The similarity stops there as this present study had a homogenous subjects and Hu, Manikonda and Kambhampati (2014) had a general and random samples. And this present study was motivated specifically to understand the Instagram content in order to come up with lessons, in particular a language related lesson. While Hu, Manikonda and Kambhapati (2014) were motivated by the need to acquire deep insights about social, cultural and environmental issues about people's activities as evidence through their photos.

A blog is a very good tool to be used by teacher for language teaching since it can promote active participation from students and interactive learning beyond the four walls of a classroom. Dunlap (2009) argues that the use of blog can help students express their ideas and perspective, make their thinking noticeable while at the same time build their confidence in communication. There are many features that make a microblog like Instagram suitable for education system. It is easy to set up and being cost effective are just some of them. It also encourage students to communicate their ideas and at the same time interact with others. As Instagram focuses on photo sharing, students in cultural exchange programs might benefit a lot from it. Nevertheless, first and foremost educators need to know the nature of Instagram postings before designing suitable lessons.

Method

The data for this study were photos and their captions. In order to determine the subject of uploaded photos, the researcher manually looked at photos and read captions written by the users. Then, the data were categorized based on a checklist prepared.

These data came from Instagram accounts belonging to 30 final year Malaysian TESL students. 27 were females and three were males. A total number of 74 photos were collected. These were a week worth of postings made by these students from 22 to 28 March 2015.

The instrument used was an observation checklist. The checklist was adopted from Hu, Manikonda and Kambhampati (2014) who did a research on What We Instagram: A First Analysis of Instagram Photo Content and User Types. The main categories listed were 'Selfie', 'Nature', 'Fashion', 'Friends', 'Food', 'Activities' and 'others'. This checklist was used to identify the category of contents of the collected data. Both the photos and the captions were triangulated in order to determine the main subject of the photos. The data were then analyzed using frequency count and percentage calculation.

Findings and Discussion

The findings show that the 'Food' category had the highest number of photos at 27%. This was followed by 'Friends' at 17.6% and 'Fashion' at 14.9%. In the middle, 'Activities' and 'Selfies' appeared 13.5% and 9.5% respectively. Meanwhile, at the bottom, 'Nature' charted 1.4%.

In this study we found that the top three categories were 'Food', 'Friends', and 'Fashion.' Meanwhile, Hu, Manikonda and Kambhampati (2014) found that 'Selfies', 'Friends,' and 'Activities' led the top three. These differences could be due to age gap, cultural differences and preferences. Hu, Manikonda and Kambhampati (2014) had general, random and diverse data. They analyzed 1000 photos chosen from 50 users out of 95343 randomly chosen users. As for this research, the photos came from 30 homogenous users, final year Malaysian TESL students.

It was the agenda of this study to discover the tendencies of young adults because the research itself was inspired by the need to prepare lessons which utilize the Instagram app for college level students or the participants of a summer school program.

Recommendation

As this study was motivated by the need to create a visual based lesson for visiting students from Japan who come to Malaysia to learn English in a summer school program, the findings from this study are essential in assisting the design of the lesson. In our summer school program, the students will certainly visit some interesting places in the host country and at the same time experience some cultural events which are different from theirs. Hence, topics for the visual based language lessons can include 'Selfie', 'Nature', 'Fashion', 'Friends', 'Food', and 'Activities'. Nevertheless, the top three subjects are 'Food', 'Friends'' and 'Fashion' should be given priority as these are the top three popular subjects of Instagram postings.

Students are required to capture photos based on the popular topics we discovered from this study. Along with the photos, they have to write suitable captions. Basically, the students will take photos of whatever interest them under the scope of the topic provided. These photos then trigger the need to use the target language when writing the captions to further explain the photos. The classmates can then interact by clicking "like" or write comments under the photos.

Conclusions

In conclusions the popular subjects of photos being uploaded Instagram are 'Selfie', 'Nature', 'Fashion', 'Friends', 'Food', and 'Activities'. Nevertheless, the top three subjects are 'Food', 'Friends'' and 'Fashion'. From here, English teachers can design Instagram mediated lessons for language learner. For example, teachers can ask students to capture photos of 'Food' for dinner that they had and write a suitable caption for that photo.

While it is interesting to proceed with the lesson, continued exploration of the nature of Instagram postings should be made. The questions of the ethics postings and privacy of people being captured on photos, for example, need to be addressed. As part of our future works, we plan to extend the research by analyzing other features of Instagram namely users' profile, profile photos, number of followers, number of followings and interaction between users and followers.



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Analytical Development of ITC Course Using Y-Chart Methodology

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Abstract

In today's world technological growth is at its peak, in that case, meeting the curriculum criteria is very difficult. It is required to set some objectives for the program to meet the requirements of this upcoming technology. This paper deals with the Computer Science curriculum and program objectives defined in this paper are meant for CS program. In this paper an undergraduate course offered by a Pakistani university is selected and besides these program objectives some course outcomes are also defined, that explains the student learning from this course. The focus of this paper, is on the comparison and mapping of the CS program objectives, course outcomes and ABET's defined student learning outcome and to further investigate, whether few of the learning goals set by the program are being fulfilled by the selected course.

Keywords: Course outcomes, curriculum development, program objectives, student learning outcomes, y-chart methodology.

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Introduction

The development of computing curricula is a challenging part in the rapidly growing technology area. The emerging new technologies and the incorporation of computer science with other curricula is another challenge for maintaining the criteria of the CS program [23] [31]. Thus keeping a balance between the program knowledge and the growing fields can be complicated.

Designing and developing the curricula is one of the most important activity for any university. The basic foundation of curricula is its objectives [22].

There are some guidelines and criteria that are defined by Accreditation Board of Engineering and Technology (ABET), for the design of CS curriculum that focus on student satisfaction. ABET had additionally characterized some student outcomes (SOs) that show their learning regarding this field [8].

In this paper, some program objectives (POs) are defined for the CS program that are the learning goals accomplished by the students in their four year undergraduate program, this student learning will lead towards the outcome based education [26][27]. Spady in [28], had defined outcome based education as an educational system in which everything is organized and focused around, what students can successfully do by the end of their learning period. The outcome based education model is based on clear set of learning outcomes and its evaluation for student satisfaction [29] [30] [32] [34] [35].

For the implementation of the outcome based education model, a course (Introduction to Computing) from the CS curriculum offered by Pakistani University – Hamdard University, is selected. Some course learning outcomes (COs) are set by this selected course. The proposed work in this paper, is based on the comparison between these program objectives, ABET student outcomes [8] and course learning outcomes to depict that whether these outcomes meet the program criteria or not.

However, the work proposed by this paper lead towards the improvement of Computer Science curriculum through the analysis provided on the selected course (ITC). This proposed work can also be employed for different courses in the CS program. The design model of the ITC course described in this paper, depicts the initial efforts for moving towards the outcome based education in CS field.

Literature Review

Endeavors for building up the computing curriculum begin in the early 1960s, with the rise of this new technology. These endeavors were advanced by ACM in 1962 as explained in [1] by the improvement of a panel which manages the advancement of Computer Science curriculum. A few progressions were made in this committee for the development of the CS curriculum amid 1963 – 1965. The principal accomplishment of these endeavours was in the form of ACM Curriculum 68, the first curriculum model intended for Computer Science (also called Curriculum '68). This was the era when computer science as a discipline was newly introduced. By the foundation of the ACM Council in 1962 this field picks up the significance and numerous universities began to offer this CS discipline in their organization for the level of baccalaureate, masters and Ph.D. Distinctive courses were offered in the CS curriculum; however this educational module soon got to be outdated because of the technological advances [3].

Since after the development of Curriculum '68 little headway were made by ACM and IEEE-CS committee, for the improvement of CS educational program in 1970 to build up an amended CS educational module taking into account most recent technologies. In 1977 the panel gave an educational program with engineering aspects consolidated in the CS educational program to overcome the hardware and software gap. In 1978 the last report for the CS educational module was introduced as the endeavors of the committee, additionally called as Curriculum '78 which comprises of several core and elective courses, however, with the most recent developing advances this educational module was supplanted by others [2] [3].

In late 1980s further endeavors were made by ACM to set up a more thorough CS educational module. A report was introduced in 1983 however, was not endorsed on the grounds that it was more like the Curriculum '78. The endeavors for making a more far reaching CS educational module finished in 1991 with the development of Computing Curriculum 1991 (CC 1991) which portrays the different knowledge areas and every knowledge area contains set of distinctive courses. The distinction between the educational programs exhibited before CC 1991 was that they manage individual courses [3] [4] [5].

In view of the Computing Curriculum 1991 (CC 1991) amid 1993 - 1997 few reports were introduced that describes the guidelines for developing the curriculum for different disciplines in CS field [5].

In the late 1990s, it was observed that computing field has emerged rapidly and had grown into a vast field containing many disciplines. To cover each one of those diverse degree programs in a solitary educational module again discussions were held to build up another educational program demonstrate as Computing Curriculum 2001 whose objective was to cover all the different disciplines of the CS field in a single Curriculum (CC 2001). It likewise pointed that this educational program model won't just cover the current disciplines of computing, but also the new disciplines that can arise in the future. In CC2001 different knowledge areas were defined that depicts the support of different degree programs in this curriculum module [3] [4] [5].

It was obliged to deliver curricular direction on customary premise because of the constant change in the CS field and the introduction of new educational areas in CS. In this manner as opposed to adding to another educational program model it was accepted to reexamine the past model (CC 2001) and redesign that appropriately. The computing curricula (2004, 2005, 2008) delivered by ACM, IEEE-CS joint force depict the unique peculiarities of the five distinctive degree programs that were combined in CC 2001 furthermore the learning capacities that an undergrad will gain with this educational program. These directions were useful for the colleges to institutionalize their computing program at a worldwide level [4] [5] [6].

However, the educational program improvement methodology has not halted yet. Recently rising financial patterns, raising the pace of Information Technology (IT) utilization, and the development of information economies has raised new issues. Latterly, the universal group has advanced a draft form of Computer Science Curricula 2013 which has reclassified the learning units and gives cement direction on curricular structure and improvement in an assortment of institutional connections [7].

A curriculum model presented in [9], define a complete development of curriculum based on the preparation of objectives, definition of curriculum areas, forward and backward reference of courses, integration of lab practices and evaluation of student satisfaction. This paper presents the curriculum model through the y-chart approach based on the evaluation of students through assessments.

Proposed Work

The proposed approach for the evaluation of student satisfaction regarding this selected course (ITC) consists of the 6 steps shown in Figure 1:



Figure 1: Proposed approach for student satisfaction evaluation Formation of Program Objectives (POs)

The program objectives are defined for the CS curriculum mentioned in Table I. Table I: Program objectives (POs)

1.	To give an expansive seeing in the CS field, of diverse ideas, procedures,		
	and so forth		
2.	To provide an ability to apply the conceptual knowledge		
3.	To prepare the students with the educational skills to work in different		
	fields of CS		
4.	To provide an ability to solve different computational problems		
5.	To provide an ability to adopt the rapid changes in the CS field		
6.	To provide an ability to design and develop their own software and		
	products		
7.	To prepare the students for the industrial requirements		
8.	To motivate the students in the higher education in the CS field		
9.	To provide an ability to work in teams		
10. To provide an education for the computer ethics			

Defining ABET Student Outcomes (SOs)

The a-k criteria on student outcomes is defined by ABET defined in Table II. Table II: ABET student outcomes (SOs) [8]

a.	An ability to apply knowledge of computing and mathematics appropriate to
	the program's student outcomes and to the discipline
b.	An ability to analyze a problem, and identify and define the computing
	requirements appropriate to its solution
с.	An ability to design, implement, and evaluate a computer-based system,
	process, component, or program to meet desired needs
d.	An ability to function effectively on teams to accomplish a common goal
e.	An understanding of professional, ethical, legal, security and social issues
	and responsibilities
f.	An ability to communicate effectively with a range of audiences
g.	An ability to analyze the local and global impact of computing on
	individuals, organizations, and society
h.	Recognition of the need for and an ability to engage in continuing
	professional development
i.	An ability to use current techniques, skills, and tools necessary for
	computing practice
j.	An ability to apply mathematical foundations, algorithmic principles, and
	computer science theory in the modelling and design of computer-based
	systems in a way that demonstrates comprehension of the tradeoffs involved
	in design choices
k.	An ability to apply design and development principles in the construction of
	software systems of varying complexity

Formulation of Course Outcomes (COs)

To assess the student satisfaction as indicated by the a-k criteria [8], with respect to the ITC course, some course outcomes are characterized that will portray the learning of the student by the end of the course and are delineated in Table III. Table III: Course outcomes (COs)

Table III: Course outcomes (COs)

i.	An ability to build the foundation of computing from the basic concepts
ii.	An ability to distinguish between hardware and software
iii.	An ability to identify different hardware components
iv.	An ability to create documents, presentations, worksheets, and databases
v.	To provide an interface between theory and practical
vi.	An ability for exploring the web and conducting different forms of research
vii.	An ability to utilize different internet resources
viii.	An ability to understand the ethical and legal responsibilities
ix.	An ability to identify and connect with different types of networks
х.	An ability to apply elementary programming concepts

Design View of ITC Course by Y-Chart Approach

The selected course (ITC) is represented with the Y-chart approach presented in [9][10][11] and is illustrated in Figure 3.

Kienhuis et al. [10], proposed the y – chart, in Figure 2, may be modified as:

- The designer describes a particular architectural instance CS curriculum → ITC Course (Program Objectives)
- Define a set of applications Student outcomes (ABET), Course Outcomes
- Mapping of architecture instance and applications Program objectives mapped with SOs and Cos on the basis of some hypothesis
- Performance analysis of the mapped set of applications Direct/Indirect assessment
- This yields the performance number that designer interprets to propose improvements

Analysis through graphs



Figure 3: Design view of ITC course

The COs and SOs are mapped with the POs on the basis of some hypothesis defined in Table IV.

POs	Hypothesis
1. To give an expansive seeing in the CS field, of diverse ideas, procedures, and so forth	Diverse courses offered by the program, that cover the distinctive parts of figuring both of past, present or future can set up the understudies for the expansive extension in CS field
2. To provide an ability to apply the conceptual knowledge	An understudy with solid, reasonable learning can manage any sort of issue which can be given by a proper interface between theory and practical
3. To prepare the students with the educational skills to work in different fields of CS	Intelligent course selection can set up the graduates for employment in any technical and professional area
4. To provide an ability to solve different computational problems	Each computational issue can't be comprehended by utilizing programming dialects.
5. To provide an ability to adopt the rapid changes in the CS field	Perusing the publications, identified with the present and forthcoming advancements and going to workshops can be ideal for being exceptional with the most recent advances.
6. To provide an ability to design and develop their own software and products	Great programming aptitudes and a capacity to deal with diverse programming tools can be helpful in the software development
7. To prepare the students for the industrial requirements	Emphasis on practical work and great ongoing critical thinking methodology can set up the understudies for industry
8. To motivate the students in the higher education in the CS field	Profession development requests an advanced education in light of the fact that people with advanced education has more openings for work and it empowers the people to grow their insight and aptitudes
9. To provide an ability to work in teams	Viable cooperation can diminish the workload by partitioning the complex assignment into sub – undertakings and will bring about higher throughput and better quality
10. To provide an education for the computer ethics	Neglecting ethical education leads towards cybercrimes, although some people opt for it because of their interests

Based on the defined approach the mapped POs, COs and SOs are summarized in Table V.

Table V: Mapping of POs, COs, SOs

POs	COs	SOs
1.	i, ii, iii, ix, x	a, i
2.	i, ii, iii, v, x	a, b, i, j
3.	iv, ix, x	c, h
4.	iv, vi	b, i, j
5.	-	g
6.	iv, x	c, j, k
7.	iv, v	b, c, d, f, i
8.	vi	a, h, i
9.	-	d, f
10.	viii	e

Assessments of ITC Course

On the basis of the hypotheses defined in Table IV, certain criteria are defined for the COs those criteria will be focused while assessing these COs. The assessment of the course (ITC), was carried out through the quizzes and the survey [12] [13] [17] [20] [33].

The evaluation of one outcome is illustrated in Figure 4 as an example:



Figure 4: Example of outcome evaluation

Students are assessed in two ways: Direct assessment / summative assessments (quizzes and termed exams) and indirect assessment / formative assessments (Surveys) [9] [16] [19] [21] [24] [25]. Table VI summarizes the COs that were assessed through quiz/survey.

Table VI: Assessment of Cos

Course Outcomes (COs)	Quiz / Survey
 i. An ability to build the foundation of computing from the basic concepts ii. To be able to distinguish between hardware and software iii. An ability to identify different hardware components iv. An ability to create documents, presentations, worksheets and databases x. An ability to apply elementary programming concepts 	Quiz 1
ix. An ability to identify and connect with different types of networks	Quiz 2
viii. An ability to understand the ethical and legal responsibilities	Quiz 3
vi. An ability for exploring web and conducting different forms of research vii. An ability to utilize different internet resources	Survey

The outcomes that were satisfied with Quiz 1, 2 and 3 are illustrated in Figure 5, 6 and 7 respectively.

Figure 5 illustrates the detailed view of quiz 1. The COs that are to be achieved through this quiz are defined before the assessment of the quiz and on the premise of these COs some criteria was defined on the basis of which questions will be asked to the students. After the conduction of this quiz 1 the SOs that will be fulfilled are also defined.



Figure 5: Representation of quiz 1

Figure 6 shows the detailed analysis of quiz 2, the CO that is to be assessed through this quiz 2 and the SO that will be achieved by this quiz is defined.



Figure 6: Representation of quiz 2

The detailed view of quiz 3 is described in Figure 7. The CO and the SO that will be achieved through this quiz is defined along with the set of criteria that will be assessed in the quiz.



Figure 7: Representation of quiz 3

For indirect assessment, survey was conducted the COs covered in this survey and the SOs achieved by this survey are illustrated in Figure 8.



Figure 8: Representation of survey

Analysis of Assessment

The assessment of the course was analysed on the basis of the quantitative data obtained from the quizzes and the survey [12] [14] [15] [18]. The graphical analysis of the assessment represents the student count and the percentage of their level of understanding regarding the course. The minimum criteria for the analysis of these assessments is set at 50%. This shows if the average rating of the assessment is above 50% then the students have achieved the course outcomes but if the average class rate is less than 50% then the outcomes are not achieved.

The graphical representation of quiz 1 exhibited in Figure 9, demonstrates the accomplishment of outcomes that were evaluated in quiz 1, by the students from their attained percentage.



Figure 9: Graphical analysis of quiz 1

Figure 10 depicts the graphical analysis of quiz 2 and the rate of achieved outcomes by the students.





The course outcomes that are being met by the assessment through quiz 3 are represented graphically in Figure 11.



Figure 11: Graphical analysis of quiz 3

In Figure12 the results obtained from the survey are analyzed, blue colored data items represents the maximum score for each question, red color represents the student count who were partially able to achieve the outcomes assessed by this survey the green and yellow results are not satisfactory.



Figure 12: Graphical analysis of survey

Result

•The graphical analysis of quiz 1 indicates that the average class score is 70%, since the average rate is greater than 50%, thus, it is noticed that the course outcomes covered in this quiz 1 are met with a certain level of student satisfaction.

•Quiz 2 shows an increment in the student count for 100%, although the class average for this quiz is 50%, therefore the outcomes that were to be achieved by this quiz, were not fulfilled.

•The results of quiz 3 are better than the results of Quiz 1 and 2 as the class average is 75%, which indicates, that the outcomes assessed by this quiz are utmost satisfied by the students.

•The output obtained from the analysis of survey result shows that the average rating of the class is more than 60%. This average class rate is the indicator for the achievement of the outcomes that were to be assessed by this survey.

Conclusion

The paper has discussed an analytical approach for development of Introduction to computing course using Y-chart approach. The process start by setting program objectives and course learning outcomes. Assessments were made via quizzes and student survey and its corresponding mapping on ABET defined student outcome. As inferred from the results of graphs it is being observed that by the end of the assessment there's an improvement in the student learning. The results of the course outcomes assessment can be used for the evaluation of the course performance. The similar approach may be adopted for analyzing the whole curriculum.

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Using Stop-Motion Video with Advertising to Promote Perceptions Judgment of Others and Situational Awareness in Adolescents with ASD

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Abstract

Individuals with autism spectrum disorders (ASD) are characterized by deficits in understanding others' minds, an aspect of which involves recognizing emotional signals. In this study, we used Stop-Motion Video (SMV) with advertising to focus on the broad range of nonverbal social cues to promote perception judgments of others and situational awareness in adolescents with ASD. We reviewed judgment data from typically developing (TD) children (n = 38) and those with ASD (n = 33), all between the ages of 10 and 14. We examined the differences between their judgments data after they viewed two types of advertising videos: Video-Based Advertising (VBA) & SMV. The results indicated that SMV materials offered structured and specific social signals of close-up images for adolescents with ASD, helping raise their levels of perceptions judgment and situation comprehension.

Keywords: Perceptions of Others; Situational Awareness; Close-Up Images; Stop-Motion Video

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Introduction

ASD are mainly characterized by deficits in the development of socialization and communication skills, particularly impairments in social–emotional reciprocity and non-verbal communication such as gestures, eye contact, and facial expressions (APA, 2000). Individuals with ASD only respond to the dialogue with other people using echolalia because they find that it is difficult to interpret nonliteral language, such as sarcasm and metaphor (Krasny, Williams, Provencal, & Ozonoff, 2003). Peoples with ASD have a range of cognitive and affective defects, resulting in individuals' difficulty in recognizing perceptions in themselves and others (Lacava, Golan, Baron-Cohen, & Myles, 2007). Although they may understand and recognize basic emotions, they still have difficulty in understanding more complex emotions in both themselves and others (Bauminger, 2004; Capps, Yirmiya, & Sigman, 1992; Hillier & Allinson, 2002).

Related Work

According to Theory of Mind (often abbreviated "ToM") studied by Baron-Cohen, Leslie, and Frith (1985), people with ASD are deficient in the ability to view things from other people's perspective—the ability to empathize. Individuals with ASD lack such abilities, especially intuitive awareness of others' emotion. This phenomenon leads people with ASD to experience barriers and hesitation when responding to facial expressions and emotions; not only is it difficult for people with ASD to identify emotions (Dyck, Ferguson, & Shochet, 2001), and perceiving gazes (Ashwin, Ricciardelli, & Baron-Cohen, 2009).

Most studies have found facial expressions are a key determinate non-verbal cues in social development and ability to interact with others (Back, Ropar, & Mitchell, 2007; Baron-Cohen, Wheelwright, & Jolliffe, 1997). There is also thought to be impaired in autism understanding more complex emotional and social information from facial stimuli (Baron-Cohen, Wheelwright, Hill, Raste, & Plumb, 2001). Although the majority of studies have focused on face stimuli, there is other evidence to propose that the impairments of emotion processing may also be present in other types of visual stimuli such as body movement (Hubert et al., 2007; Moore, Hobson, & Lee, 1997). Furthermore, studies have verified emotion processing in ASD across a broad range of social signals involve the face, body movement, vocal (Philip et al., 2010), and in context (Golan, Baron-Cohen, & Golan, 2008; Klin, Jones, Schultz, Volkmar, & Cohen, 2002).

For example, Blum-Dimaya, Reeve, Reeve, and Hoch (2010) also demonstrated that individuals with ASD can be taught through facial pictures and video training to develop social communication skills, and can learn to focus on the specific visual representation and facial cues to judge others' emotions. Furthermore, clinical observation has proven that films and videos can significantly arouse the levels of motivation in children with ASD (Mechling, 2005). Video based instruction are attracted to making these visual stimuli an effective approach in teaching functional, social, and behavioral skills to individuals with ASD (Ayres & Langone, 2005; Bellini & Akullian, 2007). Another study reported benefit from use photographs (Bolte et al., 2002; Tseng & Do, 2010) and parts of facial expressions as experimental stimuli to train adolescents with ASD to focus on specific visual characteristics and facial cues in order to teach them to recognize the perceptions of other people (Axe & Evans, 2012) and social situations (Bernard-Opitz, Sriram, & Nakhoda-Sapuan, 2001).

Why need to create SMV materials?

Accordingly, previous studies in ASD have focused on the use of facial stimuli which combined the specific attributes of social-emotional function can as a means to encourage adolescents with ASD to develop social emotional function. However, the studies only focused on facial stimulate, face recognition, and facial emotion recognition (Back et al., 2007; De Sonneville et al., 2002), it might not cover situations and interactive plots in all coherent linkage in social-communication, so we try to reinvent the visual media of advertising video as the main testing material for adolescents with ASD to increase their situational awareness with social contents and promote their perception of other people. But, direct to use the advertising video for individuals with ASD is too complicated and fast, individual with ASD is difficult to understand the social signals and details in the film without visual supports (Quill, 1997). Therefore, the goal of this study was created SMV materials to enable adolescents with ASD to enhance perceived value on their perceptions of others and situational awareness through the viewing key frame selection based on specific nonverbal social cues, including close-up of facial expressions, body movements, and particularly in situations. To date, we can use this visual support of advertising that using static and concrete images of non-verbal social cues with advertising has become a strategy for adolescents with ASD to improve the ability of recognize perceptions of others.

Methods

In this study, we arranged two different types of advertising videos to test: VBA and SMV test—in order to understand whether the particular type of advertisement video can improve the ability of adolescents with ASD to judge situations and enhance their perceptions of others. VBA test included dynamic advertisement videos, and SMV test was created from frozen images captured from the VBA.

Participants

Thirty-eight TD children and 33 adolescents with ASD in the elementary and junior high school in Taiwan were chosen as the participants. The participants ranged in age from 10 to 14 (mean age = 12.35). The ratio of TD children was male: 28, female: 10; among adolescents with ASD the ratio was male: 28, female: 5. All members of the ASD group had previously received a diagnosis of an ASD through multidisciplinary assessment of clinical services in Taiwan; all possessed the disability identification card issued by medical institutions, and all received counseling in special education schools in Taiwan. Moreover, their full-scale IQ were more than 80, and their mean (SD) full-scale IQ, verbal IQ, and performance IQ scores were 92 (10.07), 89 (10.23), and 91 (8.73), respectively. They were able to read and use computers, and all had experience in watching advertisements on TV. All participants signed a youth assent form.

Test Materials: Stop-Motion Video

SMV was created from frozen images captured from VBA. In each video we selected 10 to 15 freeze-frames sequentially in accordance with video context and story development; including 3 to 5 close ups of facial expressions, situations, and body movements to develop SMV materials for participants with ASD (see Figure 1).



Stop-Motion Video with Advertising (SMV)

Figure 1 Example of SMV materials were created from VBA to promote the nonverbal social cues of social communication skills

Procedure

The TD children and adolescents with ASD watched VBA and SMV. The entire VBA and SMV materials were played back on the desktop PC. The SMV test began eight weeks after the VBA test to reduce recall interference. The experimental procedures were identical for all participants. The test for adolescents with ASD was conducted individual test in a special education room (3m*5m) containing a table and chairs, an Intel Core i7 personal computer, with a counselor and a professional teacher accompanying each student in order to avoid having the students influence each other's answers. Before watching the videos, (a) the participants received explanations of the meanings of the 12 emotion adjectives, includes six basic emotions (happy, sad, angry, surprised, fearful, and disgusted) and six complex emotions (disappointment, pain, stress, warmth, desire, and satisfaction). After watching the videos, (b) the participants chose one of the 12 emotion adjectives which could best reflect the feelings of the characters (perceptions of others) in each video, (c) then select the best answer to describe the video's situation. The therapist accompanied among participants with ASD answered the questionnaire (each question with a standard answer) to verify that participants truly understood the descriptions of the story situations, as well as to help us calculate the correct rate of perception and comprehension judgment.

Questionnaire for VBA and SMV Tests

This questionnaire was designed to examine the participants with ASD can or cannot judge the feelings of the characters in each video. The each test in the video which consisted of 2 sections: 1) judgments of role's emotions; 2) situational judgment; this test involves the ToM ability to understand characters' mental state terms and match them to the test picture represents a state.

Results

Perceptions judgment

Among the adolescents with ASD, their correct judgment rate on their perceptions of others also improved from 32.77% in VBA to 68.91% in SMV. This finding demonstrated to improve between the two tests (VBA & SMV). The average correct judgment rate in SMV test was increased, indicating that in SMV test, the correct judgment rate on their perceptions of others increased. This finding indicated that in SMV test enhanced focus on the fixed visual structure and enlarged details of facial expressions, body movements and other non-verbal social cues provided for adolescents with ASD increases pay more attention on those social signals to enhance their judgments. To perform a paired t-test (Bland & Altman, 2010) were used to compare the relationship between the two test values. The difference in assessment performance between the VBA and SMV tests was significant (p < .05) for ASD group, indicating that the SMV material was effective.

Situational comprehension

Among the adolescents with ASD, their situational comprehension rate also improved from 34.45% in VBA to 72.27% in SMV, indicating that fixed visual structure and enlarged details of plots improved the situational awareness of the adolescents with ASD. The positive phenomenon was observed in adolescents with ASD: the simplified and structured freeze-frames with advertising helped them become sure of their feelings and improved their judgments related to empathy. To perform a paired t-test (Bland & Altman, 2010) were used to compare the relationship between the two test values. The difference in assessment performance between the VBA and SMV tests was significant (p < .05) for ASD group, indicating that the SMV material was effective.

Discussion and Conclusions

In this study, we found SMV materials can be applied to adolescents with ASD to help them focus attention in specific nonverbal social cues on the situations and perceptions of others, indicating that adolescents with ASD can be attracted by the facial expressions, gesture, and situations from the close-up structure of an advertisement in SMV test. The SMV can help adolescents with ASD develop their observation ability in perceptions judgment for others and promote their comprehension of situations. In the VBA test beginning, participants with ASD group always cannot pay attention to watching the whole video, they feel too complex and difficult to understand the story scenario, and eventually feel bored, they cannot tell the story meaning to the therapist, and confuse the more complex emotion interaction in different context, however, when the SMV materials applied, they improve their judgment ability to determine the relationship and activities between the roles, they more easily to judge the perception of others and situational awareness, and they more likes to initiative to ask questions about the story and communicate with the therapist. It shows that a limited amount of information with structured and specific close-up images was found to help adolescents with ASD improve their situational awareness and perceptions of others. As a whole, although adolescents with ASD may encounter other barriers, the visual support and structured situational characteristics of advertisements were beneficial to their perceptions awareness, and also helped them to develop social-emotional function.



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The Influence of Visual Information During Reading in Children with Dyslexia

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Abstract

According to current understanding, digital texts can be made accessible to children with dyslexia by presenting them in a simplified layout, with suitable fonts, or by using audio synchronized with word highlighting. However, the latter has not been elucidated as regards its impact on ease of reading for children with dyslexia. To determine whether the type of text highlighting color or underlined area affects the ease of reading for children with dyslexia, this study examined reading eye movement. Four children with dyslexia (two boys and two girls) between seven and ten years of age participated in this study. The digital texts were created using different text highlighting colors and underlines. The digital texts were read using the Apple reader application iBooks on a 9.7-inch Apple iPad Air. The results showed that reading along was easier with audio synchronized with text highlighting rather than without. The eye movement responses of children with dyslexia were affected by the color and area of text highlighting. Thus, the methods of presenting visual information in reading might help children with dyslexia to read.

Keywords: dyslexia, visual information, accessibility, digital content, eye movement

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Introduction

Dyslexia is the most common neurological-specific learning disability (Lyon, et al., 2003). Dyslexic readers suffer from a phonological defect characterized by difficulties in associating phonemes with the symbols that represent them in written graphemes. In Japan, 4.5% of children with dyslexia have a learning disability. Moreover, 2.4% of children are hard to read or write (Ministry of Education, Culture, Sports, Science and Technology, 2012). Children with dyslexia have been found to exhibit longer durations of fixations and more fixations in reading compared with normally developing children (Hutzler & Wimmer, 2004).

Reading disability prevents to get visual information from printed materials in the standard reading. E-books become to show personalized information for individual reading style of each person. It is realized by accessibility function on operating system. Accessibility function is including text/background color combinations, font size, and line spacing. E-books with accessibility function promote readability to dyslexia (Evett & Brown, 2005; McCarthy & Swierenga 2010), and accessibility function is key factor of facilitate reading in dyslexia on mobile devices (Schneps et al., 2010).

E-books are made easily access to multimedia information that is not reproduced by paper media, including sound, video, and 3D images. Combination of multimedia information is able to show how to pronounce of words and helping understand of words meaning (De Jong & Bus, 2003; Lewin, 2000). Furthermore, multimedia information is able to satisfying the reader's curiosity (Ikeshita-Yamazoe et al., 2012). These evidences suggest that reading with multimedia information helps children with dyslexia. On the other hand, readability parameter of each informations were not detected. Especially, word highlight method was not established. Digital Accessible Information System (DAISY) format (National Information Standards Organization, 2005) and EPUB3 (International Digital Publishing Forum, 2010) has word highlighting function. However, section of word highlight is differ and not based on scientific evidences.

In present study, authors tried to clarify relation between readability and section of word highlight. Readability was evaluated by frequency of fixations from eye movement.

Methods

Participants

Four Japanese children with dyslexia (two boys, two girls) aged between seven and ten years old participated in this study. Written informed consent and consent forms were obtained from the parents and children, respectively. This study was approved by Ritsumeikan University (Kinugasa-Jin-2014-27).

Apparatus

The Eye Tribe (The Eye Tribe ApS) was used for recording eye movements. Eye tracking rate was set at 30 Hz, precision of tracking range was within 0.5 degrees. Measurement data were recorded on a laptop computer. Digital texts were showed on Apple iPad Air (9.7 inch screen) with iBooks application as an E-book reader.



Figure 1. Experimental setup.

Stimuli

Sentences of digital contents were used from Kabutomushi ("Beetle"; Nankichi Niimi, 1943) which is storybook for children. Digital contents were prepared eight types from Kabutomushi in current study. One type of Digital content was used digital text without audio narration and word highlight. Another one type of Digital content was used digital text with audio narration and without word highlight. Other six types of digital contents were used audio narration with word highlight. Six types with word highlight were constructed from two highlight styles and three visual indicators combination. Two highlight styles were constructed from one word highlight style and one sentence highlight style. Each highlight styles have three visual indicators. Visual indicators were prepared underline highlight with black color (R:0, G:0, B:0), band highlight with yellow color (R:255, G:255, B:0) and band highlight with blue color (R:234, G:234, B:255). Sound was used common audio narration between seven types of digital contents with audio narration. Digital contents format was used EPUB 3.0 with media overlay function (DeMeglio & Weck, 2012). Media overlay of EPUB 3.0 is able to highlight words or sentences, and audio narration related highlight area. Audio narration was created by text-to-speech software (AITalk Plus, AI Inc.). Storybook was not read yet to participants before current study.

Procedure

Participants sat on a chair in front of iPad Air. Viewing distance was set 50cm from iPad Air screen. At first, participants were instructed about task. After instruction completed, participants were gazed black circle on white screen between 20 seconds for eye track calibration. After calibration done, participants were read eight digital contents continuous. After read completed, participants were rest at 60 seconds. One trial was constructed these read and rest. In current study, eight trials were executed. Order of digital contents reading was show at random between participants.



Figure 2. Eight types of digital contents."1. Digital text without audio narration and word highlight," "2. Digital text with audio narration and without word highlight," "3. Underlining of a sentence," "4. Underlining of a word," "5. Highlighting of a sentence in yellow band," "6. Highlighting of a word in yellow band," "7. Highlighting of a sentence in blue band," and "8. Highlighting of a word in blue band." Order of task was at random between participants.

Results

Frequency of fixations was analysis from both eye movement data. Digital text without audio narration was higher frequency than seven other digital contents with audio narration (Friedman test, p < 0.01, results not shown in figure 3). One sentence highlight style with blue band indicator was significant shorter than among one word highlight style with blue band indicator (p < 0.10, n = 4, Wilcoxon signed rank test, z = -1.84, two-tailed) and one sentence highlights style with underline indicator (p < 0.10, n = 4, Wilcoxon signed rank test, z = -1.60, two-tailed). One sentence highlight style with yellow band indicator was significant shorter than one word highlight style with underline indicator (p < 0.10, n = 4, Wilcoxon signed rank test, z = -1.60, two-tailed).


Discussion

In present study, one sentence highlight style is become facilitate reading, band indicator is more distinguish than underline indicator, and with audio narration is more appreciate than without audio narration. These results suggest that word highlight method is influence to readability from frequency of fixations, and audio narration was one of key factor of readability to children with dyslexia.

On the other hand, results suggest method of readability has multiple ways. This suggestion is able to think that readability is different from individuality. Thus, digital content like an E-book reader devices should equip customizing function for text reading. In future tasks, authors consider that clarify the relation between comprehension and digital text reading in children with dyslexia.

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Divide & loop in Neural Network

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Abstract

In this paper, we develop a structure of a divide & loop neural network that can improve the classification performance in neural network learning with the similar kind of input data. To solve the classification errors by the similar input data at the learning of these neural network, it was used how to find the other input data of the data or detailed data scaling. However, in the above-described solution, the fundamental problem of similar input data has not been resolved. To solve this problem, we propose a method of the loop neural network by divide in accordance with the error learning data. In this paper, we provide a method that can improve it by classification rate by repeating a neural network in order to reduce the weight of similar data indirectly to solve the problem.

Keywords : similar data, neural network, Divide error, loop

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Introduction

Neural Network is one of the machine learning technique. By learning data consisting of several groups of which it is pattern recognition for classification. Applying Pattern recognition data of many groups, the pattern recognition characteristics concentrate enhances the classification rate, although a small number of similar, it is not possible to clearly classify the group of data of the other point type. The problem is tendency ignoring minor group was occured in condition of classifying major group. In this paper, we try to solve this problem.



<Figure 1> Neural network

Divide & loop in Neural Network

In order to solve the mentioned problem in the introduction, first to confirm the learning result in the output at the time of learning of the data in the Neural network. The results come out 0-1. After the classification of the data, the sum of the results of the value of all the groups is 1. Usually we define valid output data is 0.7 or more. Then, we can define invalid output data is 0.6 or less. Reason is because it is not able to classify the data with other group.



<Figure 2> Divide & loop in Neural network

Proceeds Neural network, and collect the results of the output data 0.6 or less. It generates a new input dataset using this data. When relearn the Neural network, the relearning of the group together data similar, so it may be obtained also reduces the effect the number of groups, it is possible to expect a good classification rates.

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Learning Through Technology: The Indian Experience

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Introduction

India is going through a demographic transition and has to focus on education which will develop a skilled workforce ready for employment. The children in the age group of 10 - 14 years are important as they will soon enter the world of work to become the primary human resource and contribute to economic development of the nation.

Education in India is provided both by the public as well as the private sector. Funding comes from the government or the private providers. However, most of the schools in India are funded and run by the government. Each state government has a board that decides the schools syllabi and conducts examinations. There has been progress in terms of increasing enrolment in schools but the public system lacks infrastructure, insufficient funding, shortage of staff and facilities. Due to managing large numbers quality of school education suffers. This is the challenge teachers and educators face in preparing citizens for the changing landscape of the 21st century. Another challenge faced by the educators is the demand for English education which is seen as the road to a better life and prosperity. Parents coming from low socio economic status too demand English education for their wards.

It is observed that from the early years beginning from primary education, most of the students acquire information via rote learning with little emphasis on practical application of the subjects taught. A single teacher teaches a large classroom with the help of blackboards, and supporting text books which is not the ideal setting for students to ask questions, explore alternatives or learn by experience. By the time students enter secondary education they resort to use of old question papers, privately written help books, work-sheets and teacher prepared notes to memorize answers and succeed in entrance examinations and gain entry in institutes of higher education. It is a common sight to see children in schools taking down notes in 'class work' books, and then regurgitate the same in 'home work' books and then in their examination. The emotional turmoil touches entire families as young people struggle to survive and 'win' during their K-12 years. This kind of education does not guarantee any enhancement of quality of life.

With the advent of technology and its capabilities if incorporated in the teaching learning processes can be a game changer in the present scenario mentioned above. Information and communication technology (ICT) can offset the effects of poor quality of education. Efforts have been made in this direction too.

The Central Advisory Board of Education (CABE) unanimously adopted the National Policy on ICT in School Education (NPISE), on June 6, 2012, at its 59th meeting held in Delhi. It envisaged the introduction of a phased ICT literacy program in all primary and secondary schools country-wide within the Eleventh (2007-12) and Twelfth (2012-2017) Five Year Plan period. Although government has taken a proactive role by making a policy to include ICT, very small steps have been taken to look at the classrooms where large number of students is educated.

The researchers felt that in order to meet the demands of the society if ICT is actively used by teachers to teach English in secondary schools, especially in classrooms where there are a large number of students, it will help the students in enhancing their achievement as well as self worth. There's unanimity among the educationists that technology-based solutions are the key to revitalizing India's education system in general and learning of English in particular thereby making its future generations globally competitive. The challenge is, how effectively and quickly digital technologies can be integrated into the education system. The researchers were of the view that use of technology to teach and give opportunity for practical application in the learning of English would enhance attainment in the language.

Why English? A Global Language in A Multilingual Country

English in India today is a symbol of people's aspirations for quality in education and a fuller participation in national and international life. The current status of English stems from its overwhelming presence on the world stage and the reflection of this in the national arena. The opening up of the Indian economy in the 1990s has coincided with an explosion in the demand for English in our schools because English is perceived to open up opportunities (Das 2005)¹¹.

The visible impact of this presence of English is that it is today being demanded by everyone at the very initial stage of schooling. The demand for English may well peak by 2050, with more people having learnt it already. A 2003 National Council for Educational Research and Teaching (NCERT), New Delhi, study shows that English is introduced in Std. I or Std. III by 26 states or union territories out of a total of 36 states and union territories in India. Only seven states or union territories introduce it in Std. IV or Std. V (Khan 2005)¹². Private English medium schools may differ in the learning opportunities they offer, and this may be reflected in differential language attainment. (Nag-Arulmani 2005)¹³ Traditionally, English was taught by the grammar translation method. In the late 1950s, structurally graded syllabi were introduced as a major innovation into the state systems for teaching English. The idea was that the teaching of language could be systematised by planning its inputs, just as the teaching of a subject such as arithmetic or physics could be. The emphasis thus shifted to teaching use of language in meaningful contexts.

Grammatical competence and communicative competence was introduced to signify this extra dimension. The attempt to achieve communicative competence assumes the availability of a grammatical competence to build on, and indeed the communicative method succeeds best in the first category of schools described above, introducing variety and learner involvement in classrooms where teachers and learners have confidence in their knowledge of the language. However, for the majority of our learners, the issue is not so much of communicative competence as the acquisition of a basic or fundamental competence in the language (Prabhu 1987: 10)¹⁴

Achievement in English

Some of the factors of low achievement in English are imparting of limited knowledge, textbooks which are not sufficient to teach such a wide curriculum, blind use of rules, insufficient practice work, and absence of methodical approach in teaching.

In the present study, the factors considered to measure achievement in English are comprehension skills for prose and poetry, creativity in composition writing, analysis, understanding and summarizing of comprehension, concepts of grammar, vocabulary, proper sentence construction and ability to appreciate literature in true sense. The techniques like group projects, group presentations, group discussions and brain storming are used to teach the subject.

Since achievement in school subjects is important for a student. The researcher has studied achievement in English. Achievement is all about what learner can actually do when they have finished a course of study. Academic achievement refers to success in academic tasks as measured by and external referent such as teacher ratings, self-reported grades, grades from school records or standardized achievement tests. In the present study academic achievement is seen as improvement in the subject of English indicated by marks obtained in tests.

Information and Communication Technology (Ict)

ICT is described as computer applications with the addition of communication tools such as e-mail, chat-rooms and other internet resources. Information and communications technology or ICT tools are the means which enable students to communicate, collaborate, assimilate and exchange information, such as computers which is used for internet/web, e-mails, word processor, spread sheets, blogs, overhead projectors, LCD projectors, multimedia, cell phones and others.

Technology available in classrooms today range from simple tool based applications such as word processors, to online data, to handheld computers, closed circuit television channels and two-way distance learning classrooms. Even the cell phones that many students now carry with them can be used for learning. (Prensky, 2005)

Various technologies deliver different kinds of content and serve different purposes in the classroom. For example, word processing and e-mails promote communication skills, database and spreadsheet programs promote organizational skills and modeling software promotes the understanding of Science and Math concepts. It is important to consider how these electronic technologies differ and what characteristics make them important as vehicles for education. Technologies that can be used in classrooms today range from simple tool-based applications (such as word processors) to online repositories of scientific data and primary historical documents, to handheld computers, closed-circuit television channels, and two-way distance learning classrooms. Even the cell phones that many students now carry with them can be used to learn.

Each technology is likely to play a different role in students' learning. Rather than trying to describe the impact of all technologies as if they were the same, there is a need to think about what kind of technologies are being used in the classroom and for what purposes. Two general distinctions can be made. Students can learn 'from' computers-where technology used essentially as tutors and serves to increase students basic skills and knowledge; and can learn 'with' computers-where technology is used a tool that can be applied to a variety of goals in the learning process and can serve as a resource to help develop higher order thinking, creativity and research skills (Reeves, 1998); and (Ringstaff & Kelley, 2002).

With this in view an experiment was conducted to study whether use of technology improves achievement in English.

Need for the Research

In the past few decades there is a vast change in the educational scenario all over the world. Information is freely available in huge online databases. A person who just knows facts does not have any value. An employee who can interpret and analyze information to make forecasts, create innovative products and services or plan better will be highly valued. Geographical distances have shrunk with the telecommunication revolution. Soft skills such as superior oral and written communication, the ability to collaborate effectively with a diverse team and a project oriented approach will be needed to succeed in studies and career. Social networking sites and freelance sites have launched the careers of scores of entrepreneurs, freelance designers and innovators. A person's career will only be limited by their imagination and their willingness to work hard. These results in generations of youth who enter institutes of higher education armed with report cards and certificates. They pass out of colleges and professional institutes with degrees but not with employable skills. Employers bemoan the lack of employable skills among the educated youth of the country.

Today it is the need of the hour that every student is technologically literate by the time he/she finishes the eighth grade, regardless of race, ethnicity, gender, family income, geographic location, or disability, this will help the student to brace himself to meet the challenges of secondary education and then they can become competent enough to opt for and cope up with the challenges of higher education. Numerous businesses, corporate and nonprofit organizations have developed policy reports and frameworks describing the need to improve children's higher-level technology related skills

From the review of the related literature several gaps are observed. Although there are numerous researches/studies conducted which speak volumes about effect of ICT on achievement of students, there are hardly any study done that has designed specific ICT tools based teaching programme for secondary school students and study its effect on their academic achievement, learning abilities and self-esteem. The researcher has experienced that students coming from low economic background face a lot of difficulty in achieving even an average academic level. The classroom situations cannot help them much in overall improvement, as the teachers are busy with tests and exams to be conducted throughout the year and timely completion of syllabus. With practically no family support and help, these students fare poorly in exams and many drop out before completing their tenth grade and very few go for higher education.

The schools today do provide computer technology and teachers are using the same to teach, but there is a need to have a specifically designed framework to implement these methods in a planned and consistent manner. There is also a need to study that whether the ICT tools used in teaching do have an impact on the academic improvement of students or not? Does the use of technology in teaching have a positive effect on the learning abilities of students or not? Whether the use of various ICT tools in classroom also enhances the self-esteem of the students or not? Therefore the researcher was interested in conducting an experimental study to find the effect of ICT tools on the academic achievement, learning abilities and self esteem of Std. X students with two teaching subjects: English and Geography.

The researcher designed a teaching programme based on ICT tools, which would reach every child in the classroom. The ICT tools used were to ensure that the syllabus delivered through interactive methods help each and every student to participate actively. It is required that the teacher is not only technology savvy but also develops leadership skills. This will help schools to cope up with the rapid rate of change that is required to use technology.

The Study

The present study investigates the effect of information and communication technology (ICT) tools on the achievement of students of Std. X in the age group of 14 to 15 years in the subject of English.

Design of the Study

The **quasi-experimental method** has been used in the study. The experiment was designed as the pretest and posttest non-equivalent group design described as follows:

O_1	Х	O_2
O ₃	С	O_4

Where, O_1 and O_3 = Pre-test Scores; O_2 and O_4 = Post-test Scores X: Experimental Group (treatment given) and C: Control Group (no treatment given)

The experimental and control groups were naturally assembled groups such as intact classrooms, which were similar. The difference in the means of pre-test and posttest scores are tested for statistical significance for both within and between experimental and control groups. The treatment was conducted on the experimental group and no treatment was given to the control group.

The **respondents** in the study were students of Std. X. of the two schools who gave permission to conduct the experiment. It was ensured that both the schools were similar in terms of the schools being co-educational, the locale, socio-economic status of the students,..... The researcher randomly assigned one school as experimental group and the other as control group. The sample size in experimental group was 73 and in the control group 75. The total sample consisted of 148 students. Intact classes of students of Std. X were included.

The academic achievement questionnaire for English was developed by the researchers.

An ICT Tools Based Teaching Programme (Treatment) using ICT tools was developed by the researcher. The programme included different teaching-learning strategies that were designed to ensure that it tested the students' knowledge and understanding of the subject. To develop the ICT tools based teaching programme the **teaching content** was obtained from the available literature and researches done in past. With the in-depth study of the different aspects to be acquired in English, the researchers conceptualized the topics which were considered necessary for developing the achievement of students in English.

The selected topics were taught using different **interactive methods** of teaching. The rationale for selecting different interactive methods was to create interest among the students in subjects. **Direct experiences** were provided by conducting activities. The duration of treatment was approximately 30 hours spread over five weeks, including the pre and post testing in both experimental and control group. The control group was not given any treatment. They were taught the same topics, using traditional method of teaching, in regular classrooms by their teachers, during the same period.

After obtaining the data from the experimental and the control groups it was **described** by using **descriptive** statistics such as the measures of central tendency, variability, and graphical representation. **Inferential** statistics used was t-test to test the hypothesis and Wolf's formula to estimate the effect size of the treatment.

TESTING OF HYPOTHESIS 1

Hypothesis 1 states that there is no significant difference in the pretest scores of Std. X students in the experimental and control group on academic achievement in English.

Table 1 gives the t-ratios of the pretest scores of experimental and control group on academic achievement in English.

Table 1

Differences in Pretest Scores on Academic Achievement in English for Experimental and Control Group

Variables	Groups	Ν	Mean	S.D	t- ratios	p values	Level of significance
Achievement in English	Experimental	73	28.64	7.04	-0.50	0.62	Not
	Control	75	28.16	4.37	0.00	0.02	significant

Findings and Conclusions

From table 1 it can be seen that the obtained t-ratio for academic achievement in English is greater than p value of 0.05. Therefore the null hypothesis is accepted. It can be concluded that there is no significant difference in the pretest scores in the knowledge and understanding in English of the students in experimental and control groups.

It can be said that before the experiment began, both the experimental and control groups did not differ in their academic achievement in English. This means that at pretest level both the groups had knowledge and understanding of the subject to the same extent. Hence, it was assured that both the groups were equal before conducting the treatment i.e. the ICT tools based teaching programme.

Discussion

The reason for this is that students in both, experimental and control groups came from co-educational English medium schools. Both the schools followed the same syllabus as prescribed by the Government of Maharashtra State. The teachers teaching in both the schools had similar educational background in terms of qualifications approved by education department of Maharashtra State. The students in these two schools came from more or less similar socio-economic background and belonged to the same region of western suburbs of Greater Mumbai. The teaching pattern followed in both the schools was similar. Traditional way of teaching was followed and students were not exposed to ICT tools in teaching. The classrooms had a large number of students, approximately seventy students in each class.

This indicates that at the pretest level both the groups were having knowledge and understanding of English subject to the same extent. Hence, it assured that both the groups were equal before the intervention of the treatment i.e. the ICT tools based teaching programme designed to give inputs in the subject of English.

TESTING OF HYPOTHESIS 2

Hypothesis 2 states that there is no significant difference in the posttest scores of Std. X students in the experimental and control group on academic achievement in English.

Table 2 gives the t-ratios of the posttest scores on the academic achievement in English and Geography, learning abilities and self-esteem for experimental and control group.

Table 2

Differences in Posttest Scores on the Academic Achievement in English for Experimental and Control Groups

Variables	Groups	Ν	Mean	S.D	t- ratios	p Values	Level of Significanc e
Achievement in English	Experimenta 1	73	34.66	6.39	6.08 0.00		0.05
	Control	75	29.03	4.74			

Findings and Conclusions

From table 2 it can be seen that the t-ratios are significant at 0.05 level for academic achievement in English. The p value is less than 0.05. Therefore the null hypothesis is rejected. It is thus concluded that there is a significant difference in the posttest scores on the academic achievement in English of the experimental and control groups.

These findings indicate that there is a significant difference in the posttest scores in the academic achievement in English of the experimental and control groups. From the mean scores obtained on the post test are greater for the experimental group. Thus it can be said that the treatment in the form of ICT tools based teaching programme given to the experimental group was effective.

Discussion

The students from experimental group improved in their academic achievement in English as compared to the control group. The ICT tools based **teaching programme in English** subject included group activities with the help of group discussions, use of school website for emails and writing letters, and giving explanations through power point presentations using LCD projectors. Students gave feedback to the teacher/researcher through emails and short messaging through mobile phones about the extent to which they enjoyed this method of teaching. Some students even expressed their view that they would like to learn other topics also using ICT tools. The teaching began in the computer lab where each student was at the computer terminal and the teacher helped each one to create a personal email address. The teacher also explained with the help of computer and LCD projector in the lab how to send the email and gave her personal email address to them. They were then instructed to respond to the teacher regarding the lessons and discussions after each lesson. Wikipedia was used to discuss the related matter of the prose and poetry lessons, encouraging group discussions, debates and extempore speaking.

Students were motivated to do the home assignments by going to the internet and making projects using articles of news through internet and newspaper. Interactive method of teaching was used and students were asked to prepare group presentations wherein each member of the group had a role to play. Smart boards as a teaching resource to explain several topics in grammar were used for teaching. The teacher/researcher ensured that each and every student wrote emails and send feedback to her as an assignment. Those who did not have access to computer /internet at home were given extra time in school to access internet and write mails. This increased a bonding between the teacher and the taught and there was an increased enthusiasm among the students on receiving the replies through the emails from the teacher. This appeared to have had an impact on their motivation and hence improvement in scores is seen.

TESTING OF HYPOTHESIS 3

Hypothesis 3 states that there is no significant difference in the pretest and posttest scores of Std. X students in the experimental group and the control group on academic achievement in English.

Table 3 gives the t-ratios of the pretest and posttest scores on the academic achievement in English for experimental and control groups.

Variables		Scores	Ν	Mea n	S.D	t- ratio s	p value s	Level of significanc e
Ashiovomon	Experimenta	Pretest Scores	7 3	28.64	7.0 4			
t in English	l Group	Posttes t scores	7 3	34.66	6.3 9	5.41	0.00	0.05
Achievemen	Control	Pretest Scores	7 5	28.16	4.3 7			Not
Achievemen t in English	Group	Posttes t scores	7 5	29.03	4.7 4	1.17	0.24	Significant

Table 3Differences in Pretest and Posttest Scores on the Academic Achievement inEnglish for Experimental Group and the Control Group

Findings and Conclusions

From table 3 it can be seen that for **experimental group** the t-ratios for the academic achievement in English is significant at 0.05 level and p value is less than 0.05. Therefore the null hypothesis is rejected. Thus, it is concluded that there is there is a significant difference in the pretest and posttest scores on the academic achievement in English of the experimental group. This achievement can be attributed to the teaching programme that was conducted in an interactive way, using ICT tools. Each student was able to use the technology to understand the concepts. Thus it can be said that the ICT tools based teaching programme given to the experimental group was effective for teaching of these two subjects.

For the **control group** t-ratio of the academic achievement in English is not significant and the p value is more than at 0.05. Therefore the null hypothesis is accepted. Thus, it is concluded that there is no significant difference in the pretest and posttest scores on the academic achievement in English of the control group.

Discussion

The students from experimental group improved in their academic achievement in English as compared to the control group. It can be thus, concluded that there was a significant effect of treatment on experimental group. The intervention in the form of ICT tools based teaching programme did enhance the achievement level of students of the experimental group. Thus it can be said that the treatment (ICT tools based teaching Programme) given to the experimental group was effective.

Differences in Experimental And Control Groups Gain Scores in Acievement in English

Hypothesis 4 states that there is no significant difference in the gain score (Posttest-Pretest) on academic achievement in English of experimental and control groups. Technique used: t-test .

Groups: Std. X students in the experimental and control groups

Gain scores are the difference between post and pretest scores. Table 4 gives the gain scores (Pretest-Posttest) on the academic achievement in English for experimental and control groups.

Table 4

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Gain Scores (Posttest-Pretest) on the Academic Achievement in English for Experimental and Control Groups

Variables	Groups	Pretest scores	Posttest scores	Gain Scores	SD	t- Ratio	P Value	Level of significance
Academic Achievement in English	Experimental	28.64	34.66	6.02	6.39	6.08 0.00	0.00	Significant
	Control	28.16	29.03	0.87	4.74		Significant	

Findings and Conclusions

From table 4 it is seen that for gain scores of academic achievement in English of the experimental and control groups, the obtained t-ratio is significant at 0.00 level. The mean of the gain scores of the experimental group is found to be higher than that of the control group.

Discussion

Since the gain score of experimental group is higher as compared to the control group the experimental group has gained knowledge and understanding of the subject and the treatment i.e. ICT tools based teaching programme given to the experimental group was effective.

Estimating the Magnitude and the Effect Size of Treatment

In order to estimate the magnitude and the effect size of treatment on achievement in English Wolf's formula was applied. The following criteria has been applied by for interpreting the results.

Magnitude	Effect Size
0.2	Minimum Effect
0.5	Moderate Effect
0.8	Maximum Effect

Table 5 gives the magnitude and effect size of treatment on achievement in English.

Table 5Effect Size of the Treatment on Achievement in English

Dependent Variables	Mean of Experimental Group	Mean of Control Group	SD of Control Group	Effect Size	Magnitude of the effect
Academic Achievement in English	34.66	29.03	4.74	1.19	Maximum Effect

Findings and Conclusions

The effect size of treatment on academic achievement in English is 1.19 which means there is moderate to high effect of treatment on academic achievement in English of Std. X students of experimental group. The treatment i.e. the ICT based teaching programme developed by the researcher to develop academic achievement in English of students of Std. X is effective.

Discussion

The maximum effect of treatment is seen on academic achievement in English. This indicates that the ICT based teaching programme has created enhanced the knowledge and understanding of English among students. The programme in the form of treatment has had maximum effect on the students' achievement and they have gained the knowledge and understanding of the subject to a large extent. The interactive teaching methods, the activities conducted and the choice of ICT tools used by the teacher/researcher proved to be successful in improving the achievement in English to a maximum level among students.

Recommendations and Action Plan

The results of the present study have prompted the researcher to recommend certain actions that can be considered by all the stakeholders in order to move towards quality education of the young children.

The **government agencies** can ensure training programs for teachers to use and prepare ICT tools based teaching program throughout the year. This could be introduced as a mandatory component in the teachers' training and education curriculum. Effective curricular frameworks can be designed to include ICT tools based teaching for students from preschool onwards. Public policies, supportive legislation and budgetary allocations should be made to facilitate the availability of infrastructure and equipments. Research in teaching and learning processes related to use of ICT tools should be encouraged and be an ongoing activity. The government has to ensure uninterrupted power supply throughout the country.

The **school managements must** provide for the participation and consultation of all stakeholders, the government, the parents, the students as well as future employers in decision-making processes for instilling importance of and fostering the use of ICT tools. Issues related to infrastructural facilities, curriculum modification and educational materials should be addressed. Regular monitoring

and evaluation should be based on performance indicators specified in the implementation program. The personnel responsible should be made accountable for effective implementation of ICT based teaching at all levels.

Teachers' status and their working conditions should be improved. Suitable and qualified teachers should be recruited and retained especially those who are willing to be involved in new and innovative learning processes. Training to teachers equipping them with the appropriate skills and materials to teach diverse student populations and meet the diverse learning needs of different categories of learners should be provided from time to time. through professional development programs at the school level, pre-service training in ICT tools based teaching and instruction. Standardizations, focused spectrum management, engaging and mastering the internet need to be in place in all the educational institutions and the school managements have to ensure this.

On their part the **teachers** must acknowledge that ICT tools based teaching is the need of the hour, aimed at offering quality education for all and in keeping with the current times when technology cannot be ignored in education. for this the teachers must constantly update their knowledge and understanding of ICT tools based teaching. For this, they should participate in various national and international seminars, conferences, workshops on ICT tools in teaching organized by various recognized organizations to keep up with latest technology. Teachers must strengthen the links between schools and society to enable families and the communities to participate in and contribute to the educational process. They have to be self-motivated for training and upgrading themselves by investing in their time, efforts and resources for their own training in order to keep up with current trends as well as evolve methods and strategies to teach their subjects using ICT tools. At the same time teachers must also learn about the ill effects of over indulgence in social networking, video and other computer games and cyber crimes and laws related to internet and educate students about it.

The **students** should understand that use of different information communication technologies has become inevitable in learning, so judicious use of the same will help them to achieve success. Use of ICT can help access and disseminate electronic information like e-books, e-journals and retrieve required information within a short time. They can improve their learning by using different modern ICTs in the form of wireless networks, internet, search engines, databases and websites. Use of technology will allow students to collaborate and exchange information in a better manner and will help them to enhance their achievements.

Conclusion

The attitude that ICT tools based teaching is not an alternative but inevitability. If quality education has to be provided to all students then a positive attitude needs to be cultivated among all concerned agencies, government officials, policy makers, teachers and school managements.

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