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The Editor
SAARC Journal of Educational Research
Department of Research and Development
National Institute of Education
Maharagama
Sri Lanka

Tel 0094-1-7601601 Ext-785
Fax 0094-1-7601778
Email dkeppetigoda@ gmail.com

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An Action Research on Improving Students' Learning through a Strategy of Exploring Visual Archeology of Local and Indigenous Knowledge Practices

Dhanapati Subedi¹ and Ellen Cam²

¹Assistant Professor, Kathmandu University School of Education

² Associate Professor, Oslo Met- Oslo Metropolitan University

Abstract

This collaborative action research emphasizes on improving postgraduate students' learning through a strategy of exploring visual archeology of local and indigenous knowledge so as to improve academic Professor' professional learning experiences. We believe that local and indigenous knowledge and its practices have wider potential areas for learner to have experiential learning and to showcase our local values and practices. The study adopts the principles of qualitative inquiry within a collaborative action research design and is backed up by constructivism and experiential learning theories. Participants were of virtual Rai people of Biratnagar, Gurung people of Pokhara, Newar people of Kathmandu and Tharu People of Terai in their social, cultural, economical, environmental and spiritual practices. Collaborators are two of us as university Professors and 12 postgraduates' students. Information sources were gathering through exploring visual archeology of video clips uploaded in Youtube. Collected data were analyzed in order to find out similarity and differences explored in the visual archeology of video clips of the Rai, Gurung, Newar and Tharu People in their social, cultural, economical, environmental and spiritual practices. Data were transcribed, coded, thematized and meanings were made to learn lessons. An eleven days' intervention package was developed, implemented into our classroom situation and reflected in order to understand whether it works or not for developing students' learning through virtual process. Altogether eight themes were developed like rapport building as a gateway to open up an avenue for interpersonal relationship, division of work as engine to speed up activities to be performed, social practices as results of common interest and geographical limitations, cultural practices as showcase of identity of community people, economical practices as building agreement to making big plans, environmental practices as following rules of God, spiritual practices as linking self to another self and learning from workshop as a process of sharing reflecting and theorizing. We conclude that our intervention package worked to improve postgraduates' learning and to develop our professional learning experiences. We reflect that this action research has empowered us to solve the problems of classroom context. We have been autonomous to solve our problems through a process of plans, actions and reflections. This action research has enhanced our confidence empowering us to see our potential.

Key Words: *Action research, Visual Archeology, and Local and Indigenous Knowledge Practices*

Raising the Curtain of the Study

Researchers Briggs (2005), Lanzano (2013) Elden (2016) and Wilder, O'meara, Monti, & Nabhan, (2016) are devoting their life to explore ways to improve students' learning through the exploration of local and indigenous knowledge. Their efforts have opened up an avenue for us to contribute contested knowledge claim for the domain. In this regard, we strongly believe that action learning to explore visual archeology is an emerging niche for their better learning. This idea came in our minds after working at Kathmandu University, the School of Education for more than nine years.

We as academicians have witnessed universities as platforms of learners from diverse contexts but they are being exposed to a single track or system to live in this complex world. We are not focusing them to be responsible for cultivating their contested values which have many alternative solutions to a problem. In this context, one question may be raised: Are we preparing them to tackle with challenges likely to come in their life? The answer is of course not. Why? Because our system and the approach has nurtured them in a way that challenges can be solved what other people in their literature have suggested.

Students try to apply those suggested solutions but became failure. Why do they fail? The answer is that we have forgotten them to mentor contested limitations and we have forgotten to groom them in a way that local and indigenous knowledge triggers the way out of contested limitations. We can take example of a family. The family in a society is interconnected to social, cultural, economical, environmental and spiritual values and norms. Have we ever asked our students to explore what individual value systems do they hold? How are they responsible for social norms and values? How do they celebrate their festival? How do they help each other in their society? How do they manage money for their individual, social, cultural, environmental and spiritual needs? We tried our best to answer these arguments from our hearts and found that we have been weaker to track our students to get explored the local and indigenous answers of these arguments? At this confounding situation, we teacher should not be mere expectators. We believe that time has come to show the right direction to our students to be contested for value creation and value addition through their learning so that our effort will be worth effective.

Problem Statement

Local and Indigenous knowledge and its deployment has been given due emphasis over the last two decades. However, its archeology in the form of visual information has not yet been opened up/unfolded to showcase our local values and practices (Briggs 2005). As a result, many students are not aware of how local knowledge is useful to solve day to day problems. The followers of local and indigenous knowledge advocate that it nurtures students to survive in difficulties like earthquake, flood etc. This practice in the context of Nepal has pragmatic and epistemic gaps. Therefore, we are interested to explore archeology of visual contested information for improving students learning to garnish our professional experiences.

Research Question

How can we enhance postgraduate students' learning through a strategy of exploring visual archeology of local and indigenous knowledge so as to improve our professional learning experiences?

Significance of the Study

This study is anticipated to be a baseline study in the area of local and indigenous knowledge. It is expected that this will open up an avenue for students to improve their learning through visual archeology of local and indigenous knowledge. This study will direct other researchers, practitioners and policy makers to be contested to explore the grounded reality hidden in the local and indigenous society and culture.

Delimitation of the Study

The study is delimited to visual archeology that is video clips uploaded in the YouTube of local and indigenous knowledge of the Rai people of Biratnagar, Gurung people of Pokhara, Newar people of Kathmandu and Tharu People of Butwal in their individual, social, cultural, economical, environmental and spiritual practices. We have not considered importance of going to real field for collecting data rather we collected video clips uploaded in the YouTube.

Methodological Consideration

The study was collaborative action research within interpretive qualitative design. Therefore, for smooth study we choose an action research procedure under a qualitative research standpoint. McNiff and Whitehead (2006) define action research as a form of inquiry that enables practitioners everywhere they investigate and evaluate their work. They further state

that action research helps practitioners to create new ideas about how to improve practice. For Cohen, Manion & Morrison (2007) action research is a small-scale intervention in the functioning of the real world and a close examination effects of such an intervention. This study adopted the stages suggested in Gnawali (2007) to carry out action research.

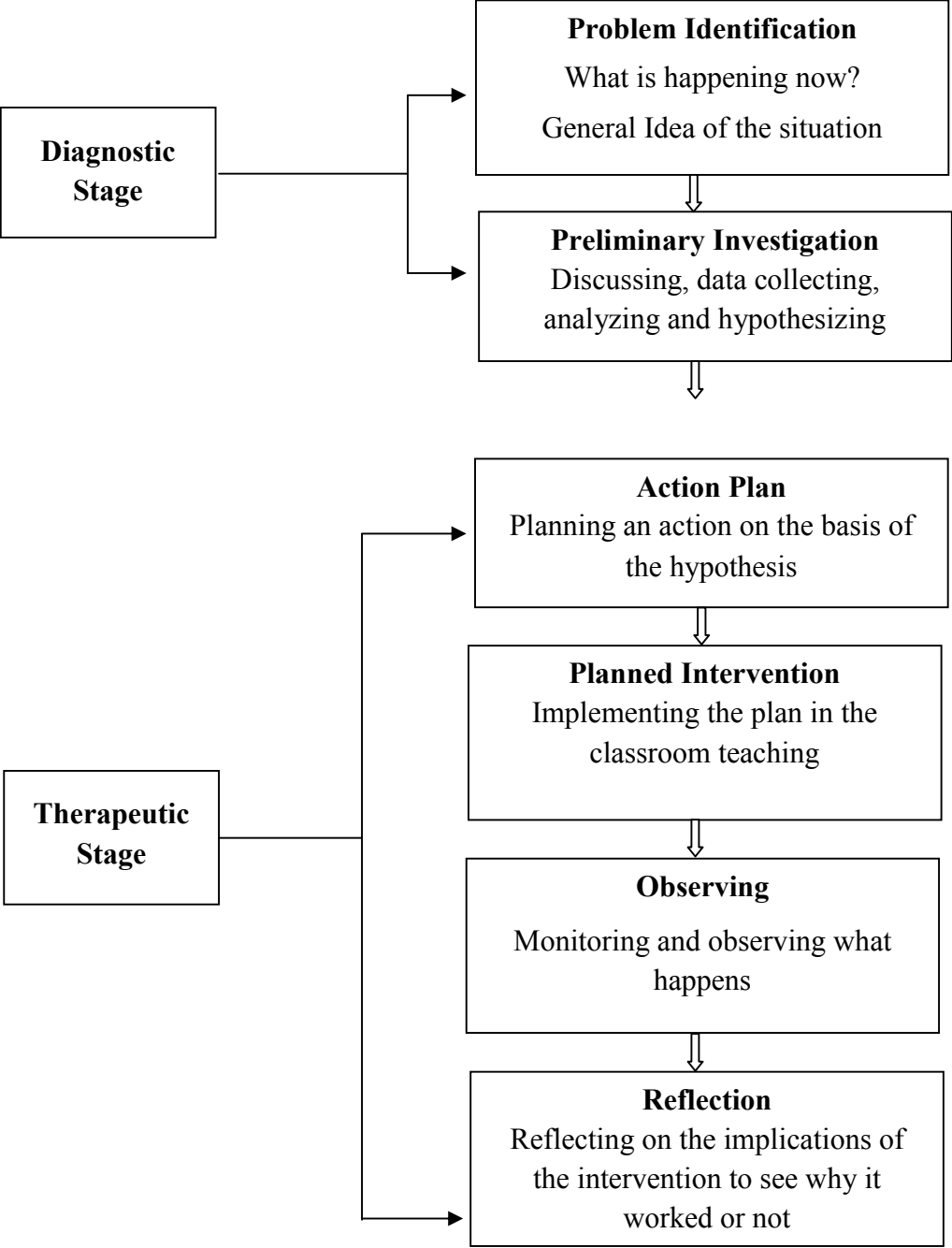


Figure 1: Stages of Action Research (Gnawali, 2007)

As researchers we prepared a plan, intervention package, implemented it and reflected to make meaning. Participants of this study were of virtual Rai people of Biratnagar, Gurung people of Pokhara, Newar people of Kathmandu and Tharu People of Terai in their social, cultural, economical, environmental and spiritual practices. Information sources were gathering through exploring visual archeology of video clips uploaded in YouTube. We explored six clips in each segment. Collected data were coded in order to find out similarity and differences explored in the visual archeology of video clips. Data were transcribed, coded, themetized and meaning was made to learn lessons.

Plan Intervention Package

We two academicians and twelve postgraduate students collaboratively made a plan to explore visual archeology of video clips as information from four areas of Nepal viz Biratnagar, Pokhara, Kathmandu and Terai. For this four groups, of students were formed including three members in each. Two groups were guided by Dr. Subedi and two were by Dr. Cam. As a part of our plan, our first job was to download and explore, social, cultural, economical, environmental and spiritual practices of the local people collaboratively explored the information taking a week in a computer lab at the university and came back to classroom with our raw information. Then after, we organized a four- day workshop at KUSOED's classroom where we watched the downloaded video clips of each group and tried to make meanings out of their local practices. The whole four- day workshop package which included actions of the research looks like the following.

Day one: Rapport building with technicians of KUSOED's lab

It was really very difficult to get technicians of KUSOED's computer lab. They were performing other jobs. We requested our teacher to call them to the lab. One of the technicians came and said that we could have felt comfortable to use computers of the lab. He told that the lab was opened for students from morning 8:00 to evening 8:00. We inquired him what time was suitable for us. He replied that we could best utilize our time either in the evening or afternoon. We decided to perform our lab work from 1:00pm to 3: 00pm each day in a week.

Day two: Work division within each member of the group and technological arrangement

It was the second day of our data collection. We reached KUSOED at around 10:00 am where our teacher asked us to divide work to be performed in our group discussing with members. We members in four groups discussed for half an hour and divided roles and responsibilities for each member. Then after, our teacher asks us to make necessary arrangement

of technological devices. We all had pen drives to store video clips. We also went to the lab in order to make sure of the proper function of computers and to ensure internet connectivity and its speed.

Day three: Downloading and exploring visual archeology of social practices of local people

It was the third day of our data collection. We all members of four groups engaged with technology to download and explore social practices of local people. For this our first group explored and downloaded social practices of Rai people of Biratnager. The second group explored and downloaded social practices of Gurung people of Pokhara. The third group explored and downloaded social practices of Newar people of Kathmandu and the fourth group explored and downloaded social practices of Tharu people of Terai region. As we started to explore video clips of social practices of the local people of Nepal there were many. We were in confusion to select the best one. For this, we discussed in our group decided which one to download. As we started to download, it was difficult for us to save the intended video clips. We asked our teacher for the process of saving video clips from Youtube. He suggested us type ss before the link. We applied his suggestion to make thing happen.

Day four: Downloading and exploring visual archeology of cultural practices

In our fourth day, we went to KUSOED's computer lab in time and started to explore and download cultural practices of Rai, Gurung, Newar and Tharu people of Nepal. We explored, downloaded and stored the information in our pen drives.

Day five: Downloading and exploring visual archeology of economical practices

It was the fifth day of our data collection, we became used to with technological system to explore and download the required video clips. On that day, we explored and downloaded video clips of economical practices of Rai, Gurung, Newar and Tharu people of Nepal.

Day six: Downloading and exploring visual archeology of environmental practices

On our sixth day, we were excited to explored visual archeology of economical practices of Rai, Gurung, Newar and Tharu people of Nepal. As usual, we divided our roles and responsibilities to be performed in the lab and engaged for more than three hours to explore the best video clips and to download for our purpose.

Day seven: Downloading and exploring visual archeology of spiritual practices

It was our last day for data collection. As per our responsibility, we engaged in the lab to search many video clips and to select the best one to fulfill our need. We spent three hours as usual to collect the information and store properly in our pen drives.

Day eight to Eleven: Workshop on collected video clips

We organized a four-day workshop to expose gathered video clips of each group. On the first day first group exposed the video clips of Rai people. After completing the exposition, the floor was opened to ask questions to the group members. We discussed in groups to make meaning from each of the video clips. Similarly, in the remaining three days, the second, third and fourth groups exposed their video clips twice. For the first time, the video clips were exposed just to watch and observe and ask the question where it was difficult to understand what they were doing, for the second time, they were exposed to make meanings watching their performance.

Action

On the first we engaged with technicians of KUSOED's lab to convey the purpose of their visit and they tried to be more familiar with them. For this, we were oriented at KUSOED how to build a rapport with the technicians of lab. On the second day, we divided tasks to our students to be completed within each member of the groups and arranged necessary technological devices required for their activities. On the third day, we downloaded and explored the visual archeology of social practices of the local people. They mainly focused on activity and inquiry in the social practices. In activity we tried to explore their performances on social activities in a group and in the inquiry, they focused on ways of inquiry with others in their deeds. On the fourth day, we downloaded and explored the visual archeology of cultural practices of the local people. In the cultural practices our focus was on event where there shared beliefs, values and norms of their own. On the fifth day, we downloaded and explored the visual archeology of economical practices of the local people focusing on how do they make money? On the six day, we downloaded and explored the visual archeology of the practices of the local people on environmental practices focusing on how they preserved environment for their long time survival. On the seventh day, we downloaded and explored the visual archeology of spiritual practices of the local people in order to understand how they valued Gods and Goddesses.

After collecting archeological information of the local people, we came to KUSOED's classroom where we organized a four-day workshop on each group's data. First, we exposed the video clips of social, cultural, economical, environmental and spiritual practices of the local people. Secondly, discuss and make meanings on each area.

Meaning Making and Discussion

Meanings from the collected information were made developing eight themes. All the themes were emerged from the information that we collected being a part of the process. Each theme is discussed in detail below linking with relevant literature and theories.

Theme One: Rapport building as a gateway to open up an avenue for interpersonal relationship

We learned that rapport building with the people in different settings improves our interpersonal relationships. As we went to lab to build rapport with technicians, we realized that how effective communication opens the door of relationship and triggers the ease of our work. We make use of linguistics strategies like showing interest in differences, using compliments, displaying solidarity, emphasizing and sympathizing to build rapport with our lab technicians. For this, we were guided by Fraser (2011) and Ho (2017), they strongly argue that rapport is created when all parties involved feel a shared sense of harmony about their relationship. We felt that we became able to build a good rapport with KUSOED's technicians. They were ready to give their phone numbers to call them any time when we need their support. They started shared their knowledge and skills to help us in our action research project. From this, we learned that linguistic strategies of Fraser (2011) are ways to build rapport which opens up an avenue for interpersonal relationship to make things happen. If we fuse Constructivist Theory (Cooperstein, & Kocevar-Weidinger, 2004) to our understanding then we expose the reality that learning is enhanced by social interaction.

Theme Two: Division of work as engine to speed up activities to be performed

We as members of this collaborative action research understood the value of work division. In fact the whole activity of our action research was too heavy for an individual. It could have taken a year to complete it. But the same thing, we completed it in a week dividing whole class into four groups and three members in each group and them dividing task to each and every individual. Aligning to Bianchi, Robinson and Milkie (2006) and Paljeric (2013), we learned work balance skills, people management skills being timely and cost effective. Our team effort synergized each member's potential in a way that it became an engine to speed up all those activities within a week. Merging Constructivist Theory (Cooperstein, & Kocevar-Weidinger, 2004) to this understanding we understood that learning develops through authentic tasks.

Theme Three: Social practices as results of common interest and geographical limitations

We learned that common interests in local communities are accelerated through love, affection, anger and hate, sickness, laziness, calmness, jealousy, envy etc. These are catalysts to activate social practices of the people in local communities. However, created social practices of these prompts are valued differently in different communities. These practices were guided by emotional intelligence which was used to generate and maintain enthusiasm, confidence, optimism, cooperation, and trust; encouraging flexibility in decision making and change; and establish and maintain a meaningful identity of the society (George, 2000). At this point, people use their indigenous knowledge to handle the situation. The indigenous knowledge of one community does not fit for others to solve the similar problem. We found that geographical limitations had a greater role to lag behind people in their adaptive social practices. Fusing the Experiential Learning Theory (Kolb & Kolb, 2012) we understood that social practices as acts people reflect their emotional intelligence and apply to different situation and expand their experiences.

Theme Four: Cultural practices as showcase of identity of community people

We understood that there are many cultural practices of Rai, Newar, Gurug and Newar people of Nepal. They perform them in order to showcase their identity which gives a sense of 'we feeling' among them. Other people from different community recognize them through their cultural practices as their identities. We learned that identity is the product of society and culture. Different identities are constructed through similarities and differences. This understanding of our own is similar to Bucholtz & Hall (2005). Merging Constructivism Theory to our understanding we conclude that people construct their own identities through a showcasing strategy. Fusing the Experiential Learning Theory (Kolb & Kolb, 2012) we understood that they showcase their identity as their act and reflect their society and culture and then they apply again and again to have a grounding experience. We also learned that cultural practices of Nepal are historical heritages and traditional characteristics of the region. This understanding is aligned to finding of Shao (2014) he argues that cultural practices are identities of the region.

Theme Five: Economical practices as building agreement to making big plans

We learned that people in local communities of Rai, Newar, Gurug and Newar perform economical practices for their survival. In this journey of them, they have learned to make agreement with others in business relationship. We also learned that they have been ambitious

to make big plans to foster their businesses and to diversify them in different areas. This has given a way for the local people to be able to make their strategic planning, business management skills, human resource management and quality control. We linked Experiential Learning Theory (Kolb & Kolb, 2012) we understood the reality and found that people open up grocery as an act and start to sell their commodities and reflect their experiences and try to apply their knowledge and skills to have more experiences. Being aligned to Peredo, & Chrisman, 2006) we also understood that business practices are typically rooted in local cultural which are natural and social capitals indispensable for transforming community towards modernization.

Themes Six: Environmental practices as following rules of God

We learned that local people have been performing many environmental preservation practices knowingly and unknowingly as rules of God. They clean the surroundings of water supply believing that God will punish them if there will be dirty. They collaboratively repaired damaged river side believing that God became angry with us, we therefore need to repaired this. They worship to trees believing that God dwell in them. All these activities they are performing are related to environmental preservation as being rules of God which has been transforming from generation to generation. Merging Constructivist Theory (Cooperstein, & Kocevar-Weidinger, 2004) to this understanding we make a meaning that people construct their own meanings from their culture and tradition.

Theme Seven: Spiritual practices as linking self to another self

As we learned that people in local communities of Rai, Newar, Gurug and Newar in Nepal perform spiritual practices to link their selves to another big self who is regulating the entire world. I observed that they took a bath, wore clean and tidy dress, bought delicious food to offer and went to temple in a group. This shows that they believe that God will be happy if they become clean, tidy and offer delicious food. This process has led them for hygienic life style and healthy life style. The process of worshipping together gives a sense of being a part of a group. This gives a group identity and power. Merging Constructivist Theory (Cooperstein, & Kocevar-Weidinger, 2004) to this understanding we make a meaning that learning is enhanced by social interaction. We also linked Experiential Learning Theory (Kolb & Kolb, 2012) to understand the reality and found that spiritual practices as acts people reflected their behaviors and applied those behaviors and practices in their society and culture as their traditions and gathered experiences.

Theme Eight: Learning from workshop as a process of sharing reflecting and theorizing

We learned that there are many ways of learning. We used workshops to share our collected information which became a platform for us to share, reflect and theorize our ideas. We also learned that this process as a framework gives a way out for authenticating the established knowledge. Sharing process set a direction for stored knowledge from experiences of individuals and opens up an avenue for multiple realities where participants understand that what we knew is a part of a whole. We learned that the process of reflection gives a way out for learnt lessons. In this process we learnt that there are variations among people of their learnt lesson of the similar event. This also paves the way for multiple knowledge claims. Many local communities of Rai, Gurung, Tharu and Newar of Nepal have multiple understandings of the same consequences and situations. They follow the one which works very often in their day to day life. Likewise, we learned that theorizing is a process of relating our understanding with established signature knowledge of the world to make meaning comparing and constricting. From this we made a meaning that workshop approach of learning enhances analytical and problem solving abilities, independent learning ability and cooperative and communicative abilities as well. Our understanding is aligned with the understanding of Zhang, Zeng, Chen, and Li (2012). We also linked Experiential Learning Theory (Kolb & Kolb, 2012) to understand the reality and found that sharing, reflecting and theorizing as actions and reflections we applied our prior, learned and explored knowledge and developed our horizon of experiences. Likewise, we also merged Constructivist Theory (Cooperstein, & Kocevar-Weidinger, 2004) to this understanding we make a meaning that new learning is built on prior knowledge and learning is enhanced by social interaction.

Conclusion

There are many ways of improving students' knowledge, skills and attitude. Exploring visual archeology is a new and emerging approach used for the first time in Nepal in order to enhance students learning. Our argument is that it is not necessary to get our students to different places to have experiential learning. Nowadays, local and indigenous practices are uploaded in Youtube in the form of video clips and documentary. In our action research process also our students learned local and indigenous being apart from the real field that is being confined to computer lab and workshops. In our process students became active learners to explore and download the local and indigenous information. This has given a new avenue for learners to improve their learning. This approach exposed the learners to different video clips

and documentaries in the form of learning materials. Exploring and downloading, participating in workshop, presenting and commenting activities offered the students' opportunities to share, reflect and theorize their perceptions, experiences and opinions which helped promote their self confidence. Professional practice of teachers can be improved through action research process that is plan, action and reflection. Proper planning helps them to set directions and dimensions for action to be carried out. And the continuous reflection of learned perceptions, experiences and opinions of teachers opens the door for professionalism.

Reflection

The action research process has exposed a reality that experiential learning of local and indigenous groups of people in Nepal is possible through exploring and downloading visual archeology in the form of video clips or documentaries. We can also learn social, cultural, environmental, economical and spiritual practices of the local people through archeology created by others. This made us to reflect on why to waste time, money and effort in the name of learning spending more than 15 difficult days to rural areas if the purpose can be fulfilled through visual archeology? To be specific, why Nepali schools, colleges and universities are expending a huge amount of money in the name of experiential learning? We reflect that this has been possible through modern technological devices. We encourage all to utilize them for improving students' learning and teachers' professional learning experiences. We believe that this action research has empowered us to solve the problems of classroom context. We have been autonomous to solve our problems through a process of plans, actions and reflections. This action research has enhanced our confidence empowering us to see our potential.

Pedagogical Implications

We carried out this action research collaboratively. This approach has given a new horizon of our thinking. We have found few things that are implied in the classroom setting in order to improve students' learning and teachers' professional learning experiences. Some implications from our side are given below.

- a. Postgraduate students learn better if they work in different groups. If the reasons are drawn from the students themselves, it is easier to manage and the outcomes of the activities are more effective.
- b. If the students are to learn something they need to be engaged in the learning situation. They need to practice more in order to be perfect for learning. Therefore, teachers' role

is to divide students in small groups and to engage them in a learning situation where they develop their experiences, perceptions and opinions.

- c. Students learn better and are motivated to learn through virtual learning environment. They can learn from virtual archeology to understand the real world situation. Therefore, teachers need to encourage students to complete their assignments and projects exploring and downloading information from internet.
- d. Students learn better if they participate in workshops. It is a platform for sharing, reflecting and theorizing their experiences, perceptions and opinions.
- e. Visual archeology is a good source to motive students for their learning. It is a virtual library for learning to explore the knowledge of world. Therefore, teachers need to encourage students to explore and create virtual archeology
- f. Students can develop analytical and problem solving abilities, independent learning ability and cooperative and communicative abilities through workshop based learning.
- g. The process of sharing, reflecting and theorizing promotes teachers' professionalism.

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Blended Learning for Teaching Oriental Music in

Secondary Education System of Sri Lanka

Chamila Nishanthi Edward¹, David Asirvatham² and Md Gapar Md Johar³

^{1,3}Management and Science University, Malaysia

²Taylors University, Malaysia

Abstract

Blended learning (BL) has been emerging as the most popular instructional design strategy in this era of education. In fact, it is well acknowledged that BL approach significantly elevate students' engagement and competency in teaching and learning process. This strategy is one of the best solution for future pedagogy, which provides technologically rich learning environments. Despite immense potentiality, many countries are still lag behind adopting BL in secondary education system such as Sri Lanka. Therefore, the main purpose of this study is to determine the effectiveness of BL for teaching in secondary education system. Moreover this study investigates the effect of BL and learners characteristics on students' Music competence. The study was experimented by using pretest and posttest control group study design. BL was applied to the experimental group and the traditional instructional method was applied to control group. The study group consisted of 360 students of Grade 10 and 11 from 9 Schools of Colombo district. Those students has been studying Oriental Music as a subject for General Certificate of Education Ordinary Level and the age group of the students were 15 and 16. A survey was administered from 109 students from the sample who had undergone BL instructions. Results of regression analysis confirmed that BL and motivation are the two most important determinants for improving students' competence in Oriental Music. Findings of this study indicated a positive platform to mold and cater the entire teaching learning process by introducing BL strategy to Sri Lankan secondary education system. This study fulfilled an existing research gap by utilizing BL to teach highly traditional abstract art. Results of the study contributes to the curriculum designing field with novel ideas to adapt blended instructions to teach secondary level students effectively. The implementation would beneficially promote technology adaptations to improve students' competencies, their attitude and motivation towards learning Oriental Music as a profession.

Key Words: Blended Learning, Secondary Education in Sri Lanka, Technology integrated Music Education, Oriental Music Competence.

1.0 Introduction

Over the past decade BL has been an increased focus on the topic of instructional design in secondary education as a medium of instruction which blends digital technology into traditional courses to increase the capability of teaching a difficult concept or as a supplementary material for disseminating information among large group of students (Crawford, 2016). It has become a paradigm shift to the entire teaching learning process in the new millennium. In this regard, Watson (2008) suggested that BL is an effective approach, which allows teachers to utilize online materials in face to face platform. Similarly, Bonk and Graham (2012) also added that BL transforms traditional learning approach with immense potential and creativity value for end users. Fundamentally, BL is an effective integration of various delivering mood, combining interactive contents and adopting multi stages of learning, which eventually facilitate both teachers and students achieving their learning goals (Anna, 2015).

Undoubtedly, music is one of the integral part of our society, especially in the subcontinent. As Western Music has been well adapting in western countries, Oriental Music has been adapting mostly in Asia. Music of the Countries like India, Persia, Japan, Korea, China, Malaysia, Sri Lanka etc. is called Oriental or Eastern Music. This study mainly emphasizes music of Sri Lanka as the context of learning Oriental Music. Music is one of the main aesthetic subject in Sri Lankan general education system. Besides this, methods of teaching music have been gaining a significant attention from many prominent music schools around the world (Anna, 2015). Heitanen and Ruismaki (2016) mentioned schools are being urged to change the way they teach music in 21st century.

In relation with teaching music, several researchers utterly pointed out that lack of verification on gaining knowledge in the traditional setting is the key concern to ameliorate (Crawford,2016; Heitanen & Ruismaki, 2017). On the other side of the coin, Pinto-Llorente, et al. (2017) examined the effectiveness of online approach in music and suggested that lack of face-to-face interactions also a major concern for pure online approach. Many researchers in this area have been trying to depict the benefits of implementing BL in the schools and higher educational institutions. Despite having immense potentiality, many educational institutions are still reluctant to implement this novel innovation, in fact Sri Lanka is no exception.

Even though the competency-based curriculum has been introduced and implemented in 2007 under the new curriculum reforms to general education system the key characteristic feature of

learner-centric shifts is not occupying in the teaching learning process even after 10 years of implementation. The recent National Education Commission report (2016) emphasized on the problem mentioning that with all the supportive structures for quality improvement, learning in the class room has not changed. Hence, the teachers as well as the supervisory personnel have not been fully aware of how a competency- based curriculum is implemented to attain its objectives. Still the traditional teacher-centered classroom environment is prevalent. Students learn under the traditional method of lecturing and taking notes and remaining passive throughout the process. Due to the existing highly competitive examination system private tuition has become essential rather than optional which, leads to high level of absenteeism in schools mainly because these tuition classes are conducted during school hours. Parents have to spent lot of extra money for music tuition. The NEC report (2003), in this regard, has emphasized on the demand for private tuition has been fueled up to the present extent, mainly because of the poor quality of teaching. This is an opposite feature to the competency-based learning phenomenon and massive weaknesses in the current teaching learning process in Sri Lanka

On the other hand, as an abstract art Music requires one to one careful training to imitate and learn the art proficiently. This is lacking in present classroom environments. One to one coaching in modern classrooms is next to impossible due to the increased number of students and weekly allocated minimum time for the subject. Only three periods per week of 40 minutes is not sufficient to cover the content wise huge syllabus at Ordinary Levels (Grades 10 & 11). Also students' attitude towards learning music has led to dissatisfaction and students drop the subject at this national level of examination. Statistics of Research and Development branch, Department of Examinations Sri Lanka shows an annual decreasing level of the number of students sat for Ordinary Level Oriental Music from 2012 to 2014. The number sat in 2012 was 28234, in 2013 was 27692, in 2014 was 27314.

This paper explores the effective use of BLin secondary level of education in Sri Lanka goes into considerable detail to find out the efficiency of blended learning strategy to design and deliver Oriental Music practical and theory instructions. Related to this learning, which is already in use at university and secondary level of education worldwide although it has not yet been applied to secondary education system in Sri Lanka and mainly not for music instruction. Moreover, this research is one of the few early initiatives in Sri Lankan schools to investigate

the teaching of Oriental Music using blended approach. The use of blended approach in Sri Lankan schools is not prominent, not only in music education, but all in other courses. Thus, this research can help to shade some light into BL initiatives in Sri Lanka. Indeed, findings of this study help secondary education system to develop an appropriate curriculum with holistic perspective for music courses by integrating cutting edge technology. Also this study would help enriching music education in the long run that eventually helps the society by molding future child with soft skills such as, creative thinking and creative skills, development of skills and attitudes for effective living, sense of appreciation through environment, respecting others' opinions, development of high sentimentality and above all by producing a balanced personality to the society.

2.0 Literature Review

2.1 Blended Learning

The concept of BL has been evolving since almost two decades. BL as described by many authors refers to a course that combine face to face instruction with 30%-50% range of online learning. According to Suprabha and Subramaniam (2015) BL includes a move far from simply classroom collaboration, lecture method of learning to more learner-centered style. The present education framework calls for student focused instruction and with regards to this necessity, BL is generally fitting.

Bayram and Hamit (2014) classified the history of blended learning into three main time lines, namely, first attempt (1999-2002); definition period (2003-2006) and popularity period (2007-2009). Unlike first two periods, many researchers at popularity period investigated the effectiveness of BL. Among them, Hughes (2007), conducted an action research on undergraduate students. Her primary aim was to understand on how to reduce significant amount of effort for lecturer on developing teacher centric syllabus. Based on her findings, it is clear that BL helps lecturer to manage their time effectively with less effort. Additionally, she also concluded that with the right set of BL and proactive students' engagement enhances the entire learning system

Similarly, El-Deghaidy and Nouby (2008) investigated the effectiveness of BL and suggested that students' motivation and attitude toward learning change dramatically in this approach. They also identified a significant improvement between control and experimental groups in their assessment, which can be the most appealing feature of BL. Furthermore, they also identify significant behavioral changes between experimental and control groups. More specifically, experimental group bore relatively more favorable view towards blended approach than control group. Woltering et al. (2009), experimentally proved that BL can improve students' motivation, satisfaction, and competency in learning, subsequently strongly recommended to adopt this approach in every educational institution.

Many researchers, however, have been arguing about several issues of BL from the elementary level of its development. In this regard, Viet (2017) listed several challenges, which classify as the main hindrances of BL implementation. Some of these are (a) participants' efficacy in using technology; (b) changing learners' perception toward technology based learning; (c) resistance from facilitators; (d) designing the most appropriate instructional design that can attune with traditional setting. Despite having immense potentiality, however, many researchers explicitly expressed that BL has to undergone microscopic examination before it is diffused massively around the world. As a result, this study tries to experiment the effectiveness of BL among secondary level school students.

2.2 Blended Learning and Music Education

Music training dependably gives illustrations on the grounds that shows learning procedure itself enable the student to imitate the teacher. The theory of music is information-based and practical demonstrations are performance-based. The former communicates information to the student, while the latter involves the building of practical skills that the student is expected to increase. Munteanu et al. (2014), applied ICT based blended instructions to teach arts education in both primary and secondary level in Romania. They identified BL relatively more effective than other two methods, namely only face-to-face and only online instructions. Additionally, they suggested that multimedia contents should be selected or designed by the teachers and at the same time, they have to be in accordance with the applicability in the learning process and students' perception. They stressed that technologies which incorporated in arts lessons promoted experiential learning, stimulated students' interrogative spirits and combined the

independent work with the group works. Also the researchers have noticed an encouraging gain in student's creativity and meta-cognition as well as the specifically increased quality of the lessons provided by the art teachers. Besides this, many recent studies emphasized on the importance of technology based music education favoring the interactions on student and teachers (Smith, Hayes & Shea, 2017; Brook, 2014; Leon & Castro, 2014; Chiu, 2012; Yen & Lee, 2011). In their quest, Ponce de Leon and Castro (2014) aimed at the usage of ICT to enhance the students' knowledge of the professional world of Music. Referring to the flexibility of BL environment, Hietanen and Ruismäki (2017) confirmed that they widely utilized the possibilities offered by the BL environment to study music theory required for teachers especially for primary level. In favor of this, Jenkins and Crawford (2016) concluded that BL can improvise music learning environment for all level of participants. On the other contrary, Ruokonen and Ruismäki (2017) explicitly expressed in their findings that despite technology enhance music education, face-to-face instructions yet utmost important as music is a very intuitive subject. In their study, they postulated that BL would be the best approach to overcome the limitation of online music learning. However, none of these studies provided any empirical evidence of the effectiveness of BL in improvising students' competence in learning music. As a result, this study emphasized on the effective usage of BL for improving students' competence in Oriental Music at senior secondary level of education.

2.3 A Modular Object Oriented Dynamic Learning Environment (MOODLE) for Learning Music

Moodle is one of the most popular learning management systems currently available in the field of education and has a great potential for supporting traditional classroom instruction (Aysel, 2014). According to the reading of Molchanova (2015) the philosophy of Moodle from a pedagogical point of view is based on the ideas of constructivism and social-constructivist approaches to education. This view points out that each learner and teacher can make contribution to the general educational field by active accumulation and acquisition of knowledge and also acquisition of necessary knowing in various ways. Shchitov et al. (2015) emphasized that Moodle is applicable in full time and distance learning, includes sufficient resources for storing and broadcasting educational information and monitoring students' educational activity. The student chooses an optimal learning path and frees time for

independent study and research. Kabassi et al. (2016) quotes Carr-Chelman et al. (2000), Gabriel (2004) So and Brush (2008) in this regard, mentioned that it has been suggested by many researchers that BL methods are effective in facilitating the process of online collaborative learning. However, the success of BL is not only the result of the simple integration of two different forms of learning Walker and Keeffee (2010). The main advantages of this new form of learning mainly appear in situations where the number of students is high and, therefore, the existence of ICT provides the opportunity to comprehend and extend the knowledge presented in a more efficient way (Singh 2010).

2.4 Students' Competency

Competency is one of the utmost important concept for academics, which has been consistently investigating by many researchers since 1982. Boyatzis introduced competence in 1982, which becomes the center of attraction among academic research arena (Chivers, 2007). Till today, the debate regarding this concept has been arising from different perspective with no proper conclusions. Subsequently, most of the researchers argued that identifying important competence is most important than defining it (Brown, 1994; Hart et al. 1999; Chivers, 2007;Malliari, et al. 2012). As a result, researchers identified and classified competence into two distinct categories, which can be appropriate for students and can be measured as well (Gavaramadze, 2011;Ottewill, 2002). These competencies are task-based vs Meta competences; or area of competence vs person related competence (Chivers, 2007). Unlike Meta competence, researchers argued that task based competence can be gained from educational institution as it requires practical experiences. In fact, Brown (1994) argued that task based competence cannot be taught as it can be learned through job or attending specific management courses. However, educational institutions utterly focus on improving Meta competences among students. Gush (1996) raised a great concern in this regard and concluded that Meta competence can be deliver to the students by applying different instructional methods included in syllabus. In addition to this, many prior studies also agreed that BL would be the best and the most appropriate method for students, which can enhance students' competency.

3.0 Methodology

This section of the article discusses the research methodology used throughout the study and how it guided data collection, analysis and development of theory and implementation of BL

strategy in secondary level class room teaching. Hence, this study investigates the important factors affecting students' competency in Oriental Music the researcher developed a conceptual framework based on theory and empirical studies. Previous research studies supported the distinctive nature of these variables in influencing students' competency. Based on the extensive literature review of BL and students' competency, two important broad categories have been identified, namely teaching process cluster and learning process cluster. Learning process cluster mainly consists of learner characteristics, which can greatly influence their music competency. On the other hand, teaching process cluster can be defined as instructional design and teachers' characteristics. Chen (2007) and Limand Morris (2009) suggested that the teaching and learning process is clustered by learner's demographic characteristics, learning styles and attitudes, rationalized with the inclusion of instructional design, technology integration and teacher's motivation. Similarly, ThienAn and Khuong (2015) study about the factors affecting music learners' motivation and the current study identified some variables that can be adapted such as flexibility, motivation and pedagogy (blended learning). Variable interaction and time are found out important factors for the study. The literature support was guaranteed from the studies by Naaj, et al. (2012), Ginn and Ellis (2007), Mohommad, (2015) Larsen (2012). Regarding the dependent variable of the study which was the student competency in Oriental Music, author purposefully selected multiple categories of learning outcomes: students' actual learning, student's perceived learning, and perceived learning application. In this study instructional design was operationally comprising with four variables: (1) digital content (2) technology (3) blended learning and (4) motivation. Learning process was comprised with another set of four antecedent constructs of the study including four variables: (1) interaction (2) attitude (3) flexibility and (4) time spent on studies. Over the years BL stands to support and improve competency based music education (Herendez-Bravo, et al, 2015; Southcott, et al. 2011). The direct relationship between blended learning and students' competency in Oriental Music is investigated by this study. Following figure 1 shows the conceptual framework of the study developed by the author.

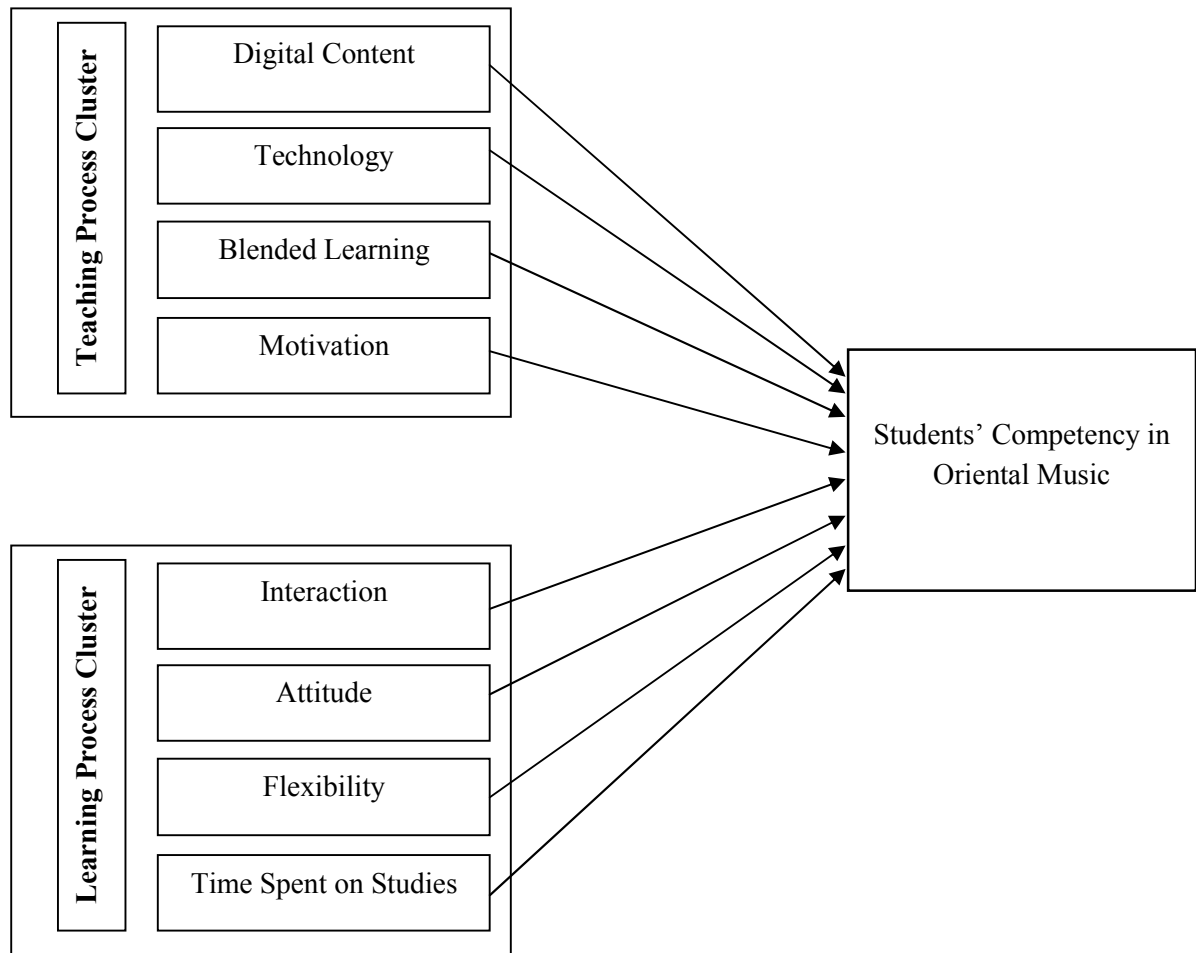


Figure 1: Conceptual framework of the study

3.1 Research Hypotheses

Eight hypotheses have been developed in accordance with the proposed model which tested the relationship between the variables. The direct relationship between independent and dependent variables are being tested after the 8th week of experimental treatment with blended learning.

H1 – Effective digital content has significant effect on improving students' competency in music.

H2 – Technology integration in classroom has significant effect on improving students' competency in music.

H3 – Blended instructional design has significant positive effect on students’ competency in music.

H4 – Teachers’ motivation has significant positive effect on students’ competency in music.

H5 – Interaction between teachers and students has significant positive effect on students’ competency in music.

H6 - Attitude has significant positive effect on students’ competency in music.

H7- Flexibility has significant positive effect on students’ competency in music.

H8 – Spending more time in learning music has significant effect on students’ competency.

3.2 Research Design

In response to reforming a secondary teaching learning process researcher investigated the impact of BL in secondary classroom teaching. The overall research was carried out as a field experiment within a longitudinal time horizon and the survey study carried with administering questionnaire to identify the behavioral differences of the students after the intervention.

3.3 Sampling procedure

Nine schools were randomly selected from Colombo district covering all the three main government school types viz. 1AB, 1C and Type 2. A total of 360 students studying Oriental music in those schools for Ordinary Level were assigned for the study. Those students were divided into two groups, experimental and control after administering the pretest and conducted the experimental study with interventions. BL was applied to the experimental group and the only traditional instruction method was applied to control group. Out of the experimental group 109 students were randomly selected for the survey.

3.4 Course overview

The course used in this study was developed to teach curriculum content developed by the National Institute of Education, Sri Lanka. The course content was abstracted from the prescribed syllabus for Ordinary Level Oriental Music new syllabus implemented in 2016. To acquire competencies in music a careful and attainable pedagogy is required. Then only the student will be able to gain knowledge, skills and practice as well as positive attitude towards learning the art of music. In this study an adaptable and easy to use learning condition is intentionally given to the investigation with the support of online Moodle lessons to intrinsically

motivate for self-directed learning. Research design is carefully chosen to reflect the investigation and the quantitative approach resonates with the aspects of the study as well as to confirm the learner centric shifts in secondary education. In order to better understanding of the learning situations of real world, experimental group participants are provided with open source music education resources through David's Learning Centre LMS/Moodle platform. High quality video and audio lessons, notes and presentations on difficult competencies were specially prepared for the weekly study plans and uploaded and embedded to the Moodle. This intensive course was delivered through a blended delivery method for 8 weeks utilizing both classroom instruction and online delivery methods. In order to address the blended nature of the instructions, the researcher adopted a pedagogical framework involving components such as self-centered and individualized learning through online modules to understand the basic subject content of the course, teacher-led instruction to have more in-depth understanding of the learned Oriental Music practical content, group activities to widen their views and application opportunities of their learning, and finally assessing students' learning and application through a post test.

Regarding the blending of delivery methods, about 50% of the instruction was conducted in classroom face to face and the other half was delivered through LMS Moodle during the lab session. For the effectiveness of the delivery of the blended instruction, the students were advised to attend weekly for classroom instruction that the instructor presented each week's major learning content and utilized various learning activities for learning involvement and collaboration. For example, lecture demonstration on practical components, group activities, etc. After attending each week's classroom instruction, the students were asked to complete online learning modules and activities for the reinforcement of their classroom face to face learning. Such as music practical lessons where the learner allowed superimposed learner control over the video lessons. More exploring on weekly addressed topics were prescribed to be done using internet before meeting with the next class. The weekly online activities were switched on in the Moodle at the beginning of the week. Before the course a full awareness was given with hands on practice on how to handle the Moodle.

3.5 Instruments

Achievement test papers given at pre and post tests were the main instrument of this study. To administer the student's competency in Oriental Music Theory and Practical tests of vocal and instrumental were conducted at pre and post levels. Test papers were carefully prepared by the researcher and scrutinized by the expert paper setters of Ordinary Level Oriental Music. Standard practical criteria were adapted to measure the practical competencies of the student. After the test an aggregated mark was allocated to the students.

In order to assess perception and behavioral differences of the students a questionnaire was designed in five point Likert scale (from 1- strongly disagree and 5-strongly agree) were distributed. To investigate the usage of technology, technology appliances application, source of learning demographic questions was used. Data has been collected through personally administrative approach. This approach is the most appropriate for this study because students get ample time to read and think before they give response. Moreover, response rate is very high in this approach.

4.0 Findings

Summary of the findings is shown in table 1. In order to identify if there is a significant difference between the academic achievement averages of both the groups independent samples t test was used. Independent samples 't' test is used to test if there is a difference in a measured characteristic between two populations. Kazu and Dermikrol (2014) has used the same type of data analysis in a similar study.

Table 1: Summary of the findings

N	Groups	Test Type	Mean	Mean Difference	SD	Std. Error	P-value
120	Exp. Group	Pre Test	55.64	16.11	17.116	1.563	
		Post Test	71.75		15.522	1.417	0.00
240	Cont. Group	Pre Test	42.45	9.62	18.876	1.218	
		Post Test	52.07		19.648	1.268	0.00

Based on table 1 the p -values are less than 0.05, there is a significant increase in the scores compared to baseline in both the two groups. At the end of the intervention it has turned out that there is a significant difference between marks average of experimental group studying under BL and marks average of control group studying under traditional method of teaching. Table 2 shows a significant gain difference between experimental group and control group on the achievement marks average after the interventions. To measure the characteristics between the two time points of the experimental and control groups paired sample 't' test was conducted on gain.

Table 2: Results of Paired Samples t-test Paired difference

Group	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		T	Df	Sig.(2-tailed)
				Lower	Upper			
Experimental Group Pair 1 Pre-test- Post test	16.11	9.64	.88	17.85	14.36	18.28	119	0.00
Control Group Pair 1 Pre test-Post test	9.62	11.61	.75	11.09	8.13	12.82	239	0.00

When table 2 analyzed between the average scores of experimental and the control groups on the pre-test and post-test there was a significant difference according to the paired samples t-test results. Experimental group average gain difference is 16.11 and the control group average gain difference is 9.62. Thus, the result shows there is a substantial gain difference between experimental groups who studied under BL than those who studied under traditional method. The two tailed p -values of both the groups are 0.000 which is less than 0.05. The 95% confidence interval for mean difference for experimental group is [14.364, 18.289] and for control group is [8.319, 12.825], which does not contain the tested value of 0. Thus, it is very much clear that there is a considerable improvement in control group as well. However, when

compared to experimental group the gain is twice as much as the control group. This achievement is indeed surprising finding of the study as this was the first BL experience of the students at secondary level in Sri Lanka who have never undergone BL training before.

The figure 2 shows the estimated marginal means of measure for experimental and control group.

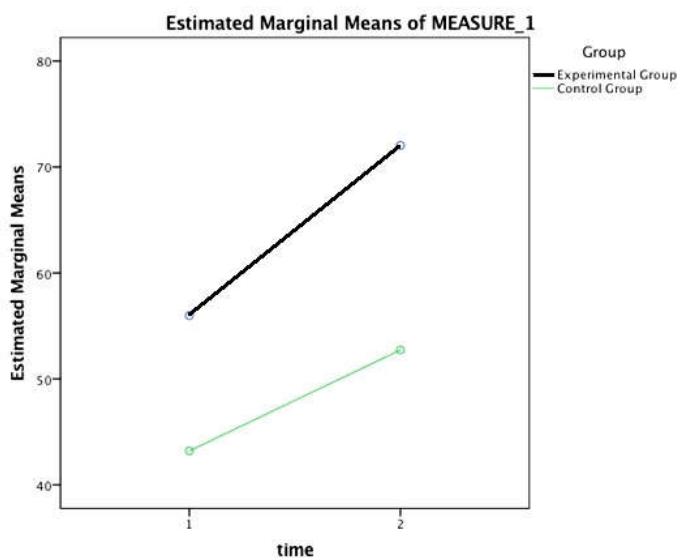


Figure 2: Profile plot for the marginal means of experimental and control groups

Based on Figure 2 the estimated marginal mean difference of the two time points describes. The changes of both the groups differ over the time but it's clearly visible that the changes of the experimental group were considerably higher than the changes in the control group. Thus, it is very much visible and can be assumed that the improvement of experimental group is higher than the control group all most twice as the time of control group who studied under BL environment.

4.1 Factors affecting students' competency

As a combined concept the general goal of competency based learning is to ensure that students are acquiring knowledge, attitude, skills and practice which are deemed to be essential to success in education. The identified factors which bears a direct relationship with students' competency were constructed to item wise measures through Likert scale with 1-5. 1 indicating

strongly disagree and 5 indicating strongly agree. Table 3 summarizes the mean values and standard deviation, minimum value and maximum value of dependent and independent variables.

Table 3: Summary table of means and standard deviations of independent variables and dependent variable

Variable	Mean	SD	Minimum	Maximum
Digital content	3.9	0.71	2.40	5.00
Technology	4.1	0.50	3.00	5.00
Blended learning	4.3	0.53	3.00	5.00
Motivation	4.1	0.53	3.00	5.00
Interaction	3.6	1.05	3.00	5.00
Attitude	4.1	0.60	3.00	5.00
Flexibility	3.5	0.96	1.50	5.00
Time	3.5	0.92	3.00	5.00
Competency in Oriental Music	4.1	0.40	3.00	5.00

Statements with highest mean scores perceived by the students are under Competency in Oriental Music 4.1 ± 0.40 . The standard deviation is less than 1 showing a small dispersion. Hence, in general the degree of Competency in Oriental Music perceived by the students are highly favourable after the interventions of BL. The mean of blended learning 4.3 ± 0.53 . It is very much surprising that the students' perception on blended learning concept is on an strongly agreeable state in their very first attempt. The technology used for blended learning is being appreciated by the students as the mean for the variable is 4.1 ± 0.50 , Mean value for motivation is 4.1 ± 0.53 . Activities for intrinsic motivation was highly affected to the students throughout the learning process which came up with the result of commendable agreeing state. Mean for attitude 4.1 ± 0.60 showed that they agreed to take more lessons in BL and they preferred BL environment to only traditional learning environment to learn Oriental Music. This attitude was more in favour in a study background where students' dropout rate is high on the subject due to lack of clarity in teaching. The mean value for digital content is 3.99 ± 0.71 . Students were impressed by the course design and prescribed online learning materials. The digital content

was a new learning experience for the respondents. Their agreement in response to digital content was really favourable for the study. The arithmetic averages of the corresponding variables are duly supported in statement wise form with strongly agreeable relation to improve students' performance in oriental music who have undergone an intensive BL course.

Table 4 presents the regression analysis and indicated that three variables, flexible, time and interaction, are not significant to elevate students' competency. Results clearly indicated that rest of the five variables, digital content, blended learning, technology, motivation and attitude, are important determinants for students' competency, especially in Oriental Music learning. P values for all five variables were below 0.05. Standardized coefficients beta indicated that 61.9 percent of students' competence positively depend on blended learning, followed by motivation (31.3%), digital content (25.6%). Last but not least, results indicated that attitude of the student also plays important role in order to improve their competency.

Table 4: Results of regression analysis

Independent variables	Standardized Coefficients	T	Sig.	Collinearity Statistics	
	Beta			Tolerance	VIF
(Constant)		.000	1.000		
Flexibility	.067	1.090	.278	.326	4.121
Interaction	-.071	-1.152	.252	.413	2.276
Digital content	.256	4.155	.000	.498	2.716
Blended learning	.619	10.034	.000	.419	2.145
Technology	.147	2.378	.019	.461	2.821
Motivation	.313	5.070	.000	.435	2.248
Attitude	.171	2.775	.007	.422	2.121
Time	.112	1.816	.072	.468	2.853

5.0 Discussion

This experimental study focused on using BL strategy to teach Oriental Music for Grade 10 and 11 students. The effectiveness of the specially designed blended course on students was analyzed through achievement tests on two time points. Findings of this experimental study disclosed that the student's studied under BL environment performed better in Oriental Music than those who studied under pure traditional method. There was a significant difference in the mean of achievement test results between the two groups at the end of the experiment. It has been identified that there was a significant difference between the pre-test and post-test test marks average of the students who studied under BL environment. Whilst constantly consolidating on the gain of the experimental group also it has been observed that there was a positive increase on the achievement test average of Oriental Music students who studied under both the learning environments. Since the mean scores are higher in experimental group and the *p*-value was significant at the 95% confidence level the data analysis results indicated that the BL strategy has turned out be effective for teaching Oriental Music at senior secondary level of education in Sri Lanka. Therefore, the BL strategy has a positive effect on improving students' competency in Oriental Music.

With the survey results researcher have investigated that to establish the dependent variable student competency in Oriental Music, particular instructional design strategy and learner features are highly related. The study findings revealed that the identified design features of teaching process and the characteristics features of learning process are explored as better drivers for an effective BL environment in secondary education. When considering about the predictors of teaching process cluster almost all of the predictors were highly significant i.e, digital content, technology, blended learning and motivation. Amongst learning process cluster only attitude came up as the significant predictor. However, all the independent variables were not significant predictors of students' competency in Oriental Music.

Findings of the study are competent and confident enough to measure the student perception towards BL and well aligned with past literature. There has been a positive influence on accommodating of digital content to innovative learning environment (Lim and Morris, 2009; Jia et al. 2012; Venkatesh, et al. 2014). Digolo, Andang'o and Katuli (2011), in their study, mentioned about the identified distinct types of e-content namely "information-based and performance-based content" are well applicable to music education. The theory of music is

information-based and practical demonstrations are performance-based. The former communicates information to the student, while the latter involves the building of a procedural skill in which the student is expected to increase proficiency in music. Outcomes of these studies supported that the relative advantages of digital content is akin to achieve performance in a particular field of study.

The variable Technology as another important determinant also proven to be statistically significant. High technological tools and assistances is a main predictor in the study. LMS/ Moodle is the foremost BL platform which is in usage nowadays. Numerous studies have proved these platforms are beneficial for improvement of students' performances. Mentioning few by Balzotti and McCool (2016), Yu, et al, (2010), Molchanova, (2015), Shchitov et al. (2015). These studies accentuated that Moodle is appropriate for full time and intensive learning, incorporates adequate assets for putting away and broadcasting instructive data and observing understudies' instructive action.

The third and the important variable Blended Learning is supported as the most influential predictor for students' competency in Oriental music. In favor of this finding several recent studies have investigated up on student perception of BL to teach music all over the world (Munteanu et al. 2014; Ho, 2004; Crawford, 2016). Their studies examined the implementation of ICT to secondary arts education in BL format concluded that multimedia products have to be in accordance with the applicability in the learning process and students' perception.

Especially when exploring a new teaching method with a study group who actually do not have a prior training with BL interventions there must be a considerable level of motivation to pull the student throughout the learning until they achieve the desired competency. In this regard students were carefully motivated by the researcher giving motivation and feedback on usability and LMS features. Deci and Ryan (2000), pointed out that intrinsically motivated behavior and the integration of extrinsic motivations satisfying for a person when the task is appropriately challenging. Author further argued that self- organized music making, such as playing an instrument, can be very challenging and according to some individual differences. The best solutions given supporting this finding by Schober and Keller, (2017) that possibility to improve the performance of LMS is the average learner motivation which will improve their further studies in LMS.

In respect of the relationship between attitude and students' competency found as a significant influence This significant result indicates that there is a strong positive linear relationship with learner attitudes and competency. It is indicated that learners' attitudes towards BL was a significant factor to acquire prescribed competencies in Oriental Music. The support for H6A consistent with the arguments of Savelsbergh, et al., (2016), Ahmed & Khanjari (2011), Kintu et al. (2017). When embracing innovative pedagogical approach attitudinal factor is very much important for adaptations. The study investigated the possibility of technology adaptations to highly traditional classroom climates with careful observations and examinations of student attitudes towards BL. Table 5 presents the summery of the supported and unsupported hypotheses.

Table 5: Hypotheses of the study

No.	Hypothesized Relationship H _A	Results
1.	Digital Content → Competency in Oriental Music H1 _A	Supported
2	Technology → Competency in Oriental Music H2 _A	Supported
3	Blended Learning → Competency in Oriental Music H3 _A	Supported
4	Motivaton → Competency in Oriental Music H4 _A	Supported
5.	Interaction → Competency in Oriental Music H5 _A	Not supported
6.	Attitude → Competency in Oriental Music H6 _A	Supported
7.	Flexibility → Competency in Oriental Music H7 _A	Not supported
8.	Time Spent on Studies → Competency in Oriental Music H8 _A	Not supported

Out of the eight hypotheses of the study five were supported by the results. Statistically significant difference found between the relationships of interaction and competency, flexibility and competency lastly with time spent on studies and competency. This study is focal for a population who haven't received BL training previously. Hence, the insignificancies can be justified as the immaturity of the student perception towards interaction, flexibility and time management on using the LMS. Moreover, the sample is of a group of secondary level school students.

6.0 Conclusion

This study addressed BL for teaching Oriental Music which bears abstract qualities. Music is a subject meant for one to one coaching to learn the art proficiently. The intensive blended course is a best fitted instructional design for the modern music class to overcome the time constraint and the burden of the high tuition fees. The effective use of technology, synchronous feedback and interactivity gives a total collective effort to teach the subject within a better cohesion with the traditional methods. These benefits of BL proved that it has a profound potential of molding secondary education teaching and learning process which can be adopted to any subject.

The specific objective of this research study is to investigate perception of Ordinary Level students (students of grades 10 & 11) in Sri Lanka towards learning Oriental Music in blended mode. Researchers used a variety of data analysis to examine the relationship between teaching and learning process predictors and students' competency in Oriental Music. The study brings some light on the students' perception towards the effectiveness of BL to improve music competency at Ordinary Level standard. The study highlighted about the provision of learning opportunities with BL training for highly abstract art. The greater potentiality of autonomy for self-centred learning has pointed out from the study which is a unique approach for teaching and learning Oriental Music. This aspect would benefit for the entire Sri Lankan secondary education system to implement BL for teaching secondary level students not only Music but also other subjects. The present study confirmed that many of the secondary level students carefully utilized the offered learning platform for learning music and were able to make their own decisions about the necessary options that suited their music learning needs. Also the findings would be beneficial for the curriculum designers, education policy makers and teachers to redesign their musical instructions with BL environments to encourage and bring out the great essence of teaching of this valuable art for the generations to come.

The current study is limited basically to develop teaching learning strategies of Oriental Music in Ordinary Level standard (Grades 10 & 11) in 9 schools of Colombo District. Due to the limited time and cost this study suggested only 360 sample size. All in all the study is restricted to teach Oriental Music practical and theory in the school third term using BL strategy to improve student's competency in Oriental Music. The experiment lasted for 8 weeks for both Grade 10 and Grade 11 students. The major limitation of the study is balancing or harmonizing the delivery methods in relation to the nature of the course. Especially because each courses

may have different balancing point. The threat of the out of balance frustrate both the instructor as well as the student. Availability of infrastructure and internet access in the school types out of the Western Province of Sri Lanka to conduct BL would be another major limitation of the study. Readiness to accept the technology based innovative teaching learning environment among the secondary education community is also a major limitation of the study as most of the teachers do lack technological skills and awareness of using ICT to teach subjects. ICT skills and media literacy skills of the student is also a major limitation of the study as the BL environment is integrated with high technology platforms and require general knowledge of handling a computer. A detailed study on BL involving with other subjects in secondary curricula, fostering technology acceptance amongst school teaching staff, capacity building of teachers on digital literacy skills, knowledge, and perceptions on effective technology-enabled course design to meet the global challenge of delivering effective online learning opportunities for students are some of the elements emerging from the study which is required for further research.

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Assessing the Burnout Status of English as a Second Language (ESL)

Practitioners in Sri Lanka

¹Darshana Samaraweera, ²Junainah Abd Hamid ³Ali Khatibi, ⁴Ferdous Azam

^{1, 2, 3, 4} Graduate School of Management, Management and Science University,
Shah Alam, Malaysia

Abstract

The purpose of this study was to engage in a preliminary investigation of the burnout level of the practitioners involved in teaching of English as a second language (ESL) in Sri Lanka. The study was carried out with a sample of 80 ESL practitioners representing all nine provinces of the country. English version of the Copenhagen Burnout Inventory (CBI) with personal burnout, work related burnout, and client related burnout as dimensions was used to collect data. The

data were computed using SPSS version 21 to determine the level of burnout of the respondents under three dimensions as well as for the entire scale separately. The data were analyzed to determine the association between burnout and gender as well as job categories. Though the results of the ANOVA test reveal that there is no significant association between burnout and job categories in this sample, it was revealed that every one of the respondents displayed a certain degree of overall burnout with more weight on personal burnout which is associated with their individual attitudes and beliefs. In conclusion it is recommended that closer monitoring of the burnout status of ESL professionals is needed with corrective measures to mitigate this situation.

Key words: burnout, job categories, gender,

1. Introduction

Burnout of education professionals is a serious problem that needs close monitoring because of the importance associated with education for the sustainability and quality of human life. This paper focuses on capturing burnout of a group of practitioners involved in teaching English as a Second Language (ESL) in the general education system in Sri Lanka particularly because burnout is comparatively a less researched area in the country's ESL professional development agenda.

English as a Second Language (ESL) practitioners are a very important group of professionals in the education system of Sri Lanka given the importance associated with the teaching of English language in the country to compete in the global economy for national development. Hence, it is of paramount importance that the ESL practitioners provide their services in a

productive way to support the next generation of citizens. In the system there are five categories of ESL practitioners; teachers of English, In-service Advisors (ISAs), teacher educators, Regional English Support Center (RESC) staff, and assistant directors of English. If all these categories of professionals provide their services in an equally efficient manner only performance of the students learning English as a Second Language at schools can be expected to be high. However, it is observed that performance of students in English language still remains at a very much unsatisfactory level, continuously with the pass rate at the G.C.E. Ordinary Level national examination remaining below 50%, according to the reports of the National Evaluation and Testing Service from 2010-2015. This situation has occurred in spite of the government spending a considerable proportion of the annual budget for education towards English language teaching.

As such, the problem in this situation could be identified as with the human resources involved in English language education in the country. Out of the two groups involved in English language education; students and teachers and other ESL practitioners, we can exclude the students considering their inclination to learn English even after they leave school. This is very clearly manifested in the increasing numbers of institutions providing English language training to school leavers as well as school students and the increasing numbers of students seeking support of such institutions. In the light of this argument it is possible to hypothesize that the problem or at least part of the problem lies in the hands of ESL professionals in the county.

Fundamentally, burnout is a work place syndrome common among the individuals working with human beings and is associated with the stress created by the “work overload” (Maslach, 2014) and the demands emerging continuously. If a professional is burnt out that could adversely affect the quality of the service provided and this could affect adversely to the entire chain of workers involved in that particular professional category. However, one of the main problems in Sri Lanka is the inadequacy of burnout research in the field of education.

1.2 Objectives of the Study

This study was conducted to achieve two main objectives;

- to conduct an initial survey among the ESL practitioners in Sri Lanka to assess their level of burnout using a standard research instrument , and
- to examine if there is a relationship between the burnout status and the professional category of the ESL practitioners

This survey study conducted with a sample of 80 ESL practitioners from all 9 provinces in Sri Lanka provides an opportunity to understand whether burnout is a factor to be considered in human resource development in the field of English language education in the county.

2. A Brief Review of Literature

Burnout is a serious professional and a health problem, particularly, found mainly among the professionals working with people (Mede, 2009; Skaalvik & Skaalvik, 2010; Yoleri & Bostanci, 2012). First introduced to the field of psychology by Maslach and Freudenberg in 1970s, burnout is today a well researched and established field that explains the condition of workers who experience exhaustion in their work as a result of many factors such as work load (Zhang & Sapp, 2008). According to Maslach & Jackson (1981) these workers, when they are psychologically drained develop negative attitudes towards their work, fellow workers as well as to whom they provide services and eventually they become inefficient in accomplishing their expected responsibilities. Affirming this Maslach (2014) identifies poor quality of work as a major drawback of burnout while explaining that burnout can not only be a work related problem but also a health and a social issue that affects the personal life of an individual as well.

Creating a discussion on teacher burnout Zang & Sapp (2008) provides a very clear picture of the rising tendency of burnout among teachers over the past few decades and contend the fact that burnout is a common tendency across the board associated with all levels and not limited only to primary and secondary teachers. Taking this discussion further and focusing on English language teachers Mede (2009) points out that English language teaching being one of the largest industries in the world faces more challenges within the field and also from the external factors such as parents and societal expectations thus making practitioners involved more prone to burnout than it was earlier. In this context, it is very important to capture the construct of burnout properly.

It is to capture this construct Maslach and Jackson (1981) developed a research tool, which we know today as the Maslach Burnout Inventory (MBI), to capture three dimensions associated with burnout; 'emotional exhaustion, depersonalization, and reduced accomplishment'. Though there were attempts to develop instruments to assess the level of burnout they were not widely acclaimed in the academia as the MBI was. However, in a more recent attempt to develop an instrument in Denmark during a project named PUMA (Project on Burnout, Motivation and Job Satisfaction) that targeted health workers a new tool named the Copenhagen Burnout Inventory (CBI) was developed. Kristensen et al. (2005) with an intensive study justify the need for a new

instrument in place of the MBI. CBI, thus developed consists of three dimensions; personal burnout, work related burnout and client related burnout.

Focusing in the Sri Lankan context it is noticed that there is a need for more research related to burnout of human service workers in the country since majority of the services like health and education are state sector services provided free of charge and less monitored for service quality and efficiency. In an article published in Galle Medical Journal De Silva et al. (2009) reports that in Sri Lanka the burnout statistics are as lower as 11.56% among the primary school teachers compared to that of Australian and American teachers; 15.78 and 20% respectively. However, as Mede (2009) presents there is no guarantee that such numbers remain static considered the internal and external pressures teachers are exposed to day by day. In a more recent attempt Samarasekara (2016) has used the CBI to capture burnout among lawyers in Sri Lanka. Considered the limited number of research studies related to burnout, it is clearly understood that there is a need for more research related to burnout in the education field.

3. The Study setting and the methodology

3.1 The Sample

Main objective of the present research is to conduct an initial survey among the ESL professional in Sri Lanka to identify their burnout status while trying to understand whether there is a relationship between the burnout status and their particular job category as an ESL practitioner.

For this study a mixed group of 80 ESL practitioners from all the provinces in Sri Lanka were selected based on the convenient sampling method. They were from the five main job categories related to the teaching of English in the Sri Lankan education context; teachers, In-service Advisers (IAs), teacher educators, Regional English Support Center (RESC) Staff, and Assistant Directors of English (ADEs). Out of these categories it is the teacher who works full time with the students. ISAs and the RESC staff work as teacher trainers conducting various continuing teacher development programmes. However, in addition to their teacher training work individuals in these two categories work with the students as well on different occasions. The teacher educators work mainly with pre service ESL teachers while the ADEs engage in administrative work related to ESL predominantly. So, they were not considered in this study since they do not engage in school level teaching.

3.2 Data Collection

The Copenhagen Burnout Inventor (CBI) developed by Kristensen et al (2005) was used as the measurement tool to capture the burnout level of the sample of 80 ESL practitioners. The CBI is a research instrument designed to measure burnout under 3 dimensions: personal burnout, work related burnout and, client related burnout. There are 6 items to measure client related burnout, and the other two dimensions are measure with 7 items and 6 items respectively. Each item is measured on a likert scale of 5 points. Table 1 provides a clear description of the 5 point scale used here and how scores are awarded to each of the responses.

Table 1 Nature of the scale used to measure burnout in the CBI

Label	Score
Always	100
Often	75
Sometimes	50
Seldom	25
Never	0

One of the items coming under the work related burnout had to be reverse ordered in computing the burnout level. Reliability scores (Alpha value) of the present study for the dimensions of CBI were 0.76 for personal burnout (PB), 0.71 for work related burnout (WB), and 0.62 for client related burnout (CRB) while for the entire instrument reliability remained 0.82. This shows that the tool's reliability is satisfactorily proven with this sample as well.

In this way the burnout level of the respondents can be measured and computed as a percentage for the entire construct as well as for each dimension.

Administering the data collection tool (CBI) was done at the Department of English of the National Institute of Education, Sri Lanka on four separate days when the respondents visited the NIE for a meeting.

The data collected using the CBI were recorded under the three dimensions, personal burnout (PB), work related burnout (WB), and client related burnout (CRB) and analyzed using SPSS version 21.

In the analysis of data One Way ANOVA was performed to measure if there was a statistically significant association between burnout of the ESL practitioners and job categories and the findings were recorded based on the results of the Leven's test for equality of Variances and p values.

4. Presentation and analysis of data

As mentioned in the earlier section a sample of eighty ESL professionals were randomly selected from all 9 provinces of the country. The profile of the respondents is given in table 2.

Table 2 Descriptive statistics for respondents' profile

Variable	Frequency	Percentage
Gender		
Male	31	38.8
Female	49	61.2
Job category		
Teacher	25	31.3
ISA	35	43.8
Teacher Educator	4	5.0
RESC staff	9	11.3
ADE	7	8.8
Age group		
26-30	1	1.3
31-35	5	6.3
36-40	2	2.5
41-45	10	12.5
46-50	21	26.3
51-55	31	38.8
56-60	10	12.5
Experience		
Below 1 year	1	1.3
1-5 years	1	1.3
6-10 years	5	6.3
11-15 years	4	5.0
16-20 years	12	15.0
21-25 years	28	35.0
Over 26 years	29	36.3

Percentage of the female practitioners is greater than that of the males. Though this reflects the nature of the ESL cadre in the country it does not reflect the exact female to male ration in the ESL cadre.

The number of eighty ESL practitioners selected for this sample comes from all 9 provinces of the country. Table 3 provides a clear picture of the distribution of the sample according to the provinces.

Table 3 Province wise distribution of the respondents

Province	Frequency	Percent
Western	12	15.0
Northern	12	15.0
Southern	8	10.0
Eastern	9	11.3
Central	7	8.8
NWP	10	12.5
Sabaragamuwa	7	8.8
NCP	7	8.8
Uva	8	10.0
Total	80	100.0

Though the most number of respondents come from the three provinces; Western, Northern and, North-Western provinces, this also does not reflect the way ESL professionals are distributed among the provinces at the moment of the study.

4.0 Results of the study

The first objective of the study is to assess the burnout status of the ESL professionals who came under the sample. For this, the burnout score of each case was computed separately for each factor (personal burnout, work related burnout and, client related burnout) and then the total score of burnout was also computed as a mean value. The table 4 presents the mean burnout level of the sample selected or this study.

Table 4 Burnout Scores

		PB%	WB%	CRB%	Total B%
		Statistic	Statistic	Statistic	Statistic
Mean		38.5	39.0	35.37	29.6
95% Confidence	Lower Bound	34.9	34.9	31.7	27.3
Interval for Mean	Upper Bound	41.24	43.1	38.9	31.9
Std. Deviation		14.2	18.5	16.2	10.6

PB- Personal Burnout WB- Work Relate Burnout

CB- Client Related Burnout When the statistics presented in the table are considered it is evident that the mean total burnout of the sample is 29.6 ± 10.3 and when the three dimensions related to burnout are concerned the personal burnout shows the highest mean percentage, which is 38.5 ± 14.2 .

4.1 Relationship between burnout and job categories

In line with the second objective of the study the next step was to examine whether there is a relationship between burnout and the job categories of the ESL practitioners. Independent sample T tests were conducted to determine this.

Before considering the job categories an analysis was conducted to see if there was any significant relationship between the gender of the participants and their total burnout. The mean burnout percentages among the female and male ESL practitioners were 28.75 ± 10.7 and 30.89 ± 9.62 . Since the homogeneity of variance assumption was not violated by the Levin's Test for Equality of Variances the relevant information as given in the table 4 was used to come to a conclusion.

Table 5 Relationship between burnout and gender

Leven's Test for Equality of Variance			t-test for Equality of Means				
F	Sig	T	Dif	Sig	Mean dif.	95% CI Lower	Upper
.605	.439	.905	78	.368	2.14	-2.56	6.84

Since the p value of the test of means is more than 0.05 it can be argued that there is no statistically significant difference in the mean burnout percentage between genders: male and female.

With the confirmed understanding that there is no significant relationship between the burnout percentage of male and female ESL practitioners the job categories were considered for analysis. A one way ANOVA test was conducted using SPSS version 21 for this purpose. The sample means for teachers, ISAs, Teacher Educators, REC staff, and the ADEs are 30.31±11.04, 29.92±10.6, 34.53±8.8, 24.85±9.76, and 28.6±7.19 respectively.

Results of the ANOVA show that there is no significant difference in burnout among the respective job categories (0.558 [4, 75]). Table 6 presents the information given above clearly.

Table 6 Relationship between burnout and ESL job categories

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	324.228	4	81.057	.755	.558
Within Groups	8048.326	75	107.311		
Total	8372.555	79			

Further, when the three factors associated with burnout; personal burnout, work related burnout and client related burnout are considered too it was found that there was no statistically significant difference between the job category of the ESL practitioners and the specific factors of burnout. The same results were obtained testing the variables age group and province also with the sample.

5.0 Discussion and implications

This preliminary study focusing the ESL practitioners in Sri Lanka was conducted with the main aim of identifying the status of burnout of the same using the Copenhagen Burnout Inventory (CBI) with personal burnout, work related burnout, and client related burnout as main dimensions of burnout.

The survey thus conducted with a sample of 80 ESL practitioners from all over Sri Lanka, though is not sample for generalization, establishes the fact that there is significant need for

concerning burnout as a key issue in the ESL teacher development field in Sri Lanka. The fact that the mean burnout percentage of ESL practitioners is 29.6 ± 10.3 needs to be considered an eye opener by the key stakeholders. These figures show that the ESL practitioners irrespective of their job category are prone to burnout and that there is no guarantee these levels will remain as they are in the future. If serious measures are not taken to include and consider burnout as an important component in the ESL teacher development programmes and research studies related to the same and if the administrators do not consider burnout as a significant “reality” (Mede, 2009) faced everyday in the work contexts that improves the service quality there is a risk of burnout levels increasing without further notice.

Out of the three dimensions, it was found that personal burnout is the dimension with the highest mean percentage, 31.7 ± 11.9 . If this is considered in line with Zang’s (2008) reporting of three levels of possible occurrence of burnout; individual, organizational and, societal, it can be argued that there is a tendency of the subjects considered in this sample to be more vulnerable to individual burnout as a result of internal factors occurring as a result of attitudes, beliefs and experiences regarding their work. Attitudes and beliefs, according to Richards and Rodgers (2001) are among the components that are difficult to alter. So such components can have a direct influence on professional competencies and might affect the service quality. It is, therefore, monitoring the personal burnout of ESL professionals closely along with the other two dimensions is of crucial importance and the administrators and teacher trainers have to devise strategies for this continuous monitoring process.

Findings of this study could only be limited to the sample of eighty ESL practitioners because it is too small a sample to generalize the findings to the system of the entire country. However, there are clear research implications and there are ample opportunities for future researchers to engage in extensive research related to burnout of ESL practitioners and also practitioners involved in teaching of other subjects as well.

In conclusion, the findings of the present study make a simple contribution to the area of burnout research in the field of English language education in Sri Lanka. Particularly the statistically proven revelation that burnout is present among the ESL practitioners at various percentages irrespective of the job category is one of the key findings of this preliminary study. It is, therefore, strongly recommended that a full scale study is conducted to understand the actual situation as early as possible.

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Effect of Motivation on Secondary School Students' Performance in Science: An Empirical Study in Sri Lanka

¹Anthoni Durage Asoka De Silva, ²Ali Khatibi, and ³S. M. Ferdous Azam
^{1,2,3} Graduate School of Management, Management and Science University,
Shah Alam, Malaysia

Abstract: *Effects of motivation and its dimensions on students' performance have been formerly examined, but generally alone rather than in relation to each other. This study investigated Sri Lankan secondary school students' motivation towards learning science in terms of six key dimensions, and their effects on science performance. A randomly selected sample of 1316 students participated in this quantitative survey study in which Science Motivation Questionnaire was used as the research instrument. Overall, students are moderately motivated, while having high levels of self-efficacy, intrinsic motivation, extrinsic motivation, and test anxiety. Self-determination and personal relevance were at a moderate level. All dimensions except test anxiety were positively correlated with science performance. They were strong predictors of performance in science. Because dimensions of motivation can potentially manipulate the provocation and sustainment of students' science-learning activities and performance, measures to cultivate students' motivation towards learning science relating to the six dimensions are suggested.*

Keywords: secondary school students, science, motivation, motivational dimensions, performance

1. Introduction

In relation to the discipline of science, there is a noticeable gap between its need and reality in the contemporary world. The need is the higher societal demand for the scientifically literate people who can locally as well as globally overcome current economic, social, technological, and environmental challenges. The reality is the developmental decline in students' attitudes towards learning science (Barmby, Kind, & Jones, 2008; Galton, 2009; Kiemer, Gröschner, Pehmer, & Seidel, 2015; Vedder-Weiss & Fortus, 2011) and consequently 'swing away from science' (Narmadha & Chamundeswari, 2013; Rice, Barth, Guadagno, Smith, & McCallum,

2013; Said, 2016). As a result, research studies, which investigate the effect of affective components on student's science education, are of great significance today, due to the fact that "Learning clearly has an affective component and developing positive attitudes is important for students' achievement" (Kind, Jones, & Barmby, 2007, p.2).

One of these affective components, specifically students' *motivation towards learning science* (MTLS) plays a crucial role in science learning. As K. C. Williams and Williams (2011, p. 1) emphasize "With regard to students, very little if any learning can occur unless students are motivated on a consistent basis". Students' MTLS has developed into a matter of global concern (Osborne & Dillon, 2008) due to its well-documented positive correlation with students' performance in science (Atta & Jamil, 2012; Chow & Yong, 2013; De Silva, Khatibi, & Azam, 2017; Glynn, Taasobshirazi, & Brickman, 2009). However, same as attitudes towards learning science, a developmental decline in students' MTLS, particularly at the secondary level has also become a global concern today (Galton, 2009; Osborne & Dillon, 2008; Kiemer et al., 2015; Vedder-Weiss & Fortus, 2011).

According to the Social Cognitive Theory (SCT), motivation is a multidimensional construct and it affects students' performance (Schunk & Prajares, 2001). There are numerous research studies, which scrutinize the effect of motivation with reference to one or few motivational constructs on students' performance in science. But, empirical studies that investigate the effect of motivation on performance based on the idea that the overall motivation is more than merely the sum of its components are rare. Researchers who adopted SCT in their research studies as the theoretical basis are frequently of the view that learning motivation is mainly comprised of intrinsic motivation (IM), extrinsic motivation (EM), self-determination (SD), personal relevance (PR), self-efficacy (SE), and test anxiety (TA) (Bryan, Glynn, & Kittleson, 2011; Chow & Yong, 2013; Glynn & Koballa, 2006; Glynn et al., 2009; Taasobshirazi & Carr, 2009). Therefore, from the social cognitive perspectives, the current study explores the relationship between Sri Lankan secondary school students' MTLS and performance in science. Further, it compares the findings of the present study with some other similar studies conducted in different countries, which are based on social cognitive perspectives. Glynn and Koballa (2006, p. 25) emphasize the significance of such research on students' MTLS stating that it is "an area constantly in need of innovative approaches because the societal factors that play a role in learning science are constantly changing".

2. Literature Review

Students' motivation towards learning is generally considered as one of the most decisive elements that can be used to improve students' performance (Atta & Jamil, 2012). The significance of student motivation has varied from peripheral to central in educational and psychological research over the recent decades (Pintrich, 2003). Motivation has been reported in all levels of education to influence students' academic performance (Kusurkar, Ten Cate, Vos, Westers, & Croiset, 2013; Vansteenkiste, Sierens, Soenens, Luyckx, & Lens, 2009). In this section, firstly, a brief overview of the Sri Lankan secondary school science education is presented. Secondly, studies on the six dimensions of motivation, which are taken into account as key motivation constructs under the SCT and their associations with students' performance in science will be critically reviewed.

2.1 Secondary School Science Education in Sri Lanka

Since the year 1972 in which the policy of '*science for all*' was implemented in the country, the government of Sri Lanka has made numerous efforts to develop science education of the nation. Science is offered as a common compulsory curriculum for the cohort of Grades 6 – 11 students in all the public schools. While making many efforts to uplift the students' performance in science, National Education Research and Evaluation Centre (NEREC) conducted a series of national level studies and reported that national averages of Grade 8 students' performance in science in 2008, 2012, and 2014 were 56.30%, 41.95%, and 41.16% respectively (NEREC, 2008, 2013, 2015). It is noteworthy that the national average has drastically dropped from 2008 to 2012 and since then, it remains just above the pass mark. In 2015, 87% of school candidates got less than 50 marks out of 100 for science at the national level GCE (Ordinary Level) Examination (Department of Examination, 2016). Nevertheless, Sri Lanka has also faced the dilemma of students' 'swing away from science' (Jayawardena, 2015).

2.2 Motivation towards Learning Science

In his SCT, Bandura describes the way people attain attitudes, values, behavioral styles, competencies, and the way people motivate and control their level of functioning (Bandura, 2001; Bandura, 2005). As Schunk and Pajares (2001) describe, within the social-cognitive framework, each individual child is regarded as holding a self-regulating system, which has an effect on the child's beliefs and supports the development of motivation that facilitates cognitive and affective behaviors. Motivational constructs, specifically IM, EM, PR, SD, SE, and TA are

regarded as major constructs within the self-regulatory system that fortify a child's overall motivation to learn and, consequently, performance (Bandura, 2001; Schunk, 2001). These six constructs have been taken into account as dimensions or components of students' MTLs by the researchers (Glynn & Koballa, 2006; Glynn et al., 2007; Glynn et al., 2009).

2.3 Intrinsic Motivation, Extrinsic Motivation and Performance in Science

Intrinsic motivation is known as an internal force that motivates an individual to involve in academic activities due to his/her own interest and the enjoyment associated with the learning process (Rayan & Deci, 2000; Xie, Debacker, & Ferguson, 2006). Engaging in a task to achieve some separable outcomes, for instance, a special privilege in the classroom or approval from authority figures is known as extrinsic motivation (Hayenga & Corpus, 2010; Rayan & Deci, 2000; Xie et al., 2006). Intrinsically motivated students perform better academically (Walker, Greene, & Mansell, 2006). As reported by many authors, students' IM showed a positive correlation with their performance in science (Gottfried, Marcoulides, Gottfried, & Oliver, 2002). Followed by an investigation of the motivational dimensions, Garcia (1993) revealed that both IM and EM had a positive relationship with students' performance. However, earlier researchers concluded that EM had an adverse effect on IM and academic performance (Pittman & Boggiano, 1992). Lin et al. (2003) investigated the combined effects of IM and EM, and revealed that students with high level of IM and medium EM perform particularly well compared to the students with either low or high level of EM. Some researchers reported that students with high IM and low EM had a positive correlation with students' performance (Hayenga & Corpus, 2010; Vansteenkiste et al., 2009). While a higher level of EM exerts a unfavorable effect on the learning of Western students' (Lepper, Corpus, & Iyengar, 2005; Zhu & Leung, 2011), enhancing both IM and EM promote students' learning in Asian cultures (Caleon et al., 2015; Lepper et al., 2005).

2.4 Personal Relevance and its Association with Performance in Science

In general, personal relevance is associated with student's interest in a task in which he/she is engaged (Osborne & Collins, 2001). In terms of science, personal relevance is defined as the relevance of learning science to student's personal goals (Cavallo, Potter, & Rozman, 2004). According to Eccles and Wigfield (2002), students should recognize the importance of a task that he/she is engaged and determine the support that extends to achieve either his/her personal goals or professional goals. Students find the relevance of learning science through three facets,

namely the personal interest in learning science, significance of science in the course that they are following, and importance of science in the society (Holbrook, 2003). While Zusho, Pintrich, and Coppola (2003) recognized personal relevance as a significant and a stronger predictor of students' performance in chemistry, Yu (1999) found that it was not a significant predictor of students' performance in both organic and inorganic chemistry. Osborne and Collins (2001) examined the views of a group of 16-year-old students about the science curriculum in the UK. Those students wanted to have topics where they could identify an immediate relevance. As Holbrook (2003) exposed, if the students found that the scientific content was interesting, understandable and relevant, they were motivated towards learning science.

2.5 Self-determination and its Association with Performance in Science

The extent of the control and choice that students have over the subject content and the mode of learning is regarded as self-determination. It is also a determinant of students' motivation towards learning a subject (Glynn & Koballa, 2006; Reeve, Nix, & Hamm, 2003). Individuals with higher autonomous or self-determined motivation show better academic performance (Boggiano, Flink, Shields, Seelbach, & Barrett, 1993; Soenens & Vansteenkiste, 2005). Kusrkar, Ten Cate, Vos, Westers, and Croiset (2013) developed a model to determine whether motivation affect students' performance through good study strategy and higher study effort. As they reported, students with high self-determined motivation showed a positive association with the use of a good study strategy, which had a positive association with high study effort and higher grade point average (GPA). Lavigne, Vallerand, and Miquelon (2007) supported the view that SD plays an important role in children's MTLs. However, Obrentz (2012) pointed out that the direct relationship between SD and science achievement was less conclusive compared to the other motivational dimensions.

2.6 Self-Efficacy and its Association with Performance in Science

Particularly, in relation to science the SE is defined as the belief of students' ability that they can perform well in science (Baldwin, Ebert-May, & Burns, 1999). A strong SE of a person intensifies his or her successful achievement of a task and well-being (Pajares & Schunk, 2001). As Britner (2008) describes, SE affects students' performance by predisposing them to work harder, persist longer, and overcome difficulties, when fulfilling academic targets. Students' science achievement at all levels shows an association with the SE (Britner & Pajares, 2006). In

Brunei Dharusalam, Chow and Yong (2013) found a significant and positive correlation between secondary school students' SE and their achievement in science.

Some researchers reported SE as a significant predictor of students' performance in chemistry (Adnan & Akbas, 2006, Yu, 1999; Zusho et al., 2003). Among the factors affecting high school students' motivation to learn science, Bryan, Glynn, and Kittleson (2011) found that SE had the highest impact on achievement compared to SD and IM. Bircan and Sungur (2016) also reported a similar result in terms of a group of Grade 7 students' performance in science.

2.7 Test Anxiety and its Association with Performance in Science

A psychological condition of mind that students show fear, helplessness, uncertainty, and concern before, during, or after a test is referred to as TA or in other word assessment anxiety (Olatoye & Afuwape, 2003). Emotionality, which causes the physical symptoms such as heart racing, sweating, dizziness, and nausea is one of the two dimensions of test anxiety. The other dimension, namely worry involves the thoughts students have about test such as comparison of his/her performance with the others, having low confidence, bothering over the consequences of failing and feeling of unpreparedness (Cassady & Johnson, 2002). In contrast to the motivational dimensions discussed above, TA very often shows a negative association with the students' academic performance. For instance, Cassady and Johnson (2002) found that higher levels of test anxiety were connected with significantly lower test scores on both course examinations and scholastic aptitude test with a group of undergraduate students. Some studies conducted with undergraduate science students also exposed a negative association between TA and the GPA (Chappell et al., 2005; Lin, McKeachie, & Kim, 2002; Rana & Mahmood, 2010). According to Olatoye (2009), TA is a significant predictor of junior secondary students' performance in science.

The above discussion intrigued researchers to examine the effects of motivation and its dimensions on students' performance due to two reasons. First, the specific mechanisms through which motivation exerts its influence on students' performance in science are not yet fully understood. Second, despite the value of early interest and success in science, a limited number of research studies are available on individual factors such as motivation, which affect secondary students' performance in science compared to the large number of research generally focused on high school students.

3. Research Methodology

The population, sample selection, and the process of adaptation of the research questionnaire, measures of students' performance, and method of data collection and analysis are presented below.

3.1 Sampling Procedure

The cohort of Grade 11 students who were to take their GCE (Ordinary Level) Examination in December 2016 was the population of interest, because they had almost completed the secondary school science curriculum for Grades 6 to 11. A representative sample of students was selected from all nine provinces of the country as follows. Based on the zonal level performance in GCE (Ordinary Level) Examination held in 2015, from each province the highest and the lowest performing educational zones were selected. Within each zone three schools were randomly selected and students representing 54 schools were in the sample. From each selected school one class of Grade 11 students participated in the study. A demographic profile of the sample of 1,315 students is given in Table 1. The average age of the student sample was 16 years.

Table 1. Demographic profile of the sample

		Frequency	Percentage
Gender	Male	619	47.0
	Female	697	53.0
Medium	Sinhala	905	68.8
	Tamil	411	31.2

3.2 Instrument

Because the Science Motivation Questionnaire (SMQ) developed by Glynn and Koballa (2006) assesses the six key motivational dimensions with just a single scale (Salta & Koulougliotis, 2015; Zeyer et al., 2013), it was adapted for the purpose of the current study. The SMQ is comprised of 30 self-assessment items to be responded with a 5-point Likert type scale which ranges from 1 (*never*) to 5 (*always*). The level of each motivational dimension is measured by five items, which are randomly distributed in the questionnaire.

Because the respondents use and get instructions in the school in one of the two vernacular languages, namely Sinhala and Tamil, the SMQ was translated into both the languages. To assure that the SMQ was properly translated into both the languages, four stages in translating questionnaires were followed (Spielberger & Sharma, 1976). Firstly, a Sinhala medium senior lecturer and a Tamil medium senior lecturer attached to the National Institute of Education, Sri Lanka who are fluent in English separately translated the SMQ into two languages. Secondly, two other senior academics of the same institution who are blind to the original questionnaire independently did the back translation of Sinhala and Tamil versions into English. Then, in order to assure the cross-language equivalence between the translated versions and the original questionnaire, the four personnel gathered, discussed and accommodated the necessary changes. Apart from that, the SMQ was administered among a group of bilingual students to further assure the cross-language equivalence. A group of science teachers as well as a group of language teachers reviewed the questionnaires to establish its face validity. Finally, Sinhala and Tamil medium questionnaires were further refined by conducting a pilot test among 64 Sinhala medium and 58 Tamil medium students respectively. In addition, the criterion-related validity of the translated versions was assessed by interviewing 15 Sinhala medium students and 15 Tamil medium students who participated in the pilot study. The orientation and four interview questions used for the same purpose by Glynn et al. (2009) adapted for the interview. The Cronbach's alpha for the 30 items in Sinhala and Tamil medium SMQs were 0.889 and 0.854 respectively in the pilot study. Items given under each of the motivational dimensions also had the alpha value greater than 0.7. Students' level of MTLs determined by the SMQ and the interviews was tallied and it implied that the SMQ is a valid tool to measure secondary school students' MTLs in Sri Lanka.

For the 30 items in the SMQ, a student can get the minimum of 30 and the maximum of 150 scores, which is an indicator of his/her overall motivation. In calculating the total score achieved for the SMQ, items given under TA were reverse scored. Therefore, a high score on this dimension indicates a low level of TA and a high level of MTLs (Glynn et al., 2009). Students achieved the total score in the ranges of 30-79, 70-109 and 110-150 for the SMQ were considered as bearing low, moderate and high level of MTLs respectively. As there are five items coming under each motivation dimension, the score that can be achieved for each dimension varies from 5 to 25. Therefore, the scores in the range of 5-11.7, 11.8-18.3 and 18.4-

25 in a particular dimension were treated as bearing a low, moderate and high level of motivation in terms of the particular dimension respectively.

Two items of the SMQ were adapted so that they were compatible with the Sri Lankan context. The term “science course” of the item twelve was swapped with “science subject” while the term “grade point average” of the fifteenth item swapped with “average score”. In the current study, students’ performance in science was measured in terms of the average term test scores for science in the three term tests conducted in Grade 10 and first two term tests conducted in Grade 11.

3.4 Data Collection and Analysis

One of the researchers personally visited each school and administered the questionnaire. Prior to the school visit, the principal was officially informed through the zonal educational office. Within school hours, school principals allocated a convenient time and venue to administer the questionnaire. During the visit, respondents’ term test scores for science were also collected.

Data analysis was done by using Statistical Package for the Social Sciences (SPSS) for Windows version 17.0. Both descriptive statistics and inferential statistics, namely bivariate correlations, simple linear regression analysis, and multiple linear regression analysis were carried out.

4. Results

In this section, at the outset a demographic profile of the participants is given. Thereafter, levels of students’ overall motivation and motivational dimensions, a correlation analysis, and a regression analysis are presented respectively.

4.1 A Profile of the Participants

In the sample there were 619 (47.1%) male students and 696 (52.9%) female students. The sample comprised of 904 (68.7%) Sinhala medium students and 411 (31.3%) Tamil medium students. Compositions of the sample in terms of gender and medium of instructions were approximately equal to those of the population.

4.2 Performance in Science and Level of Motivation

The average of the aggregate term test marks for science obtained ranged from 3 to 90 with a mean of 44.38 ± 15.48 . Therefore, the average term test score (ATTS) can be considered as at just above the pass mark. Table 2 shows students' overall MTLs and the MTLs with respect to its dimensions.

The results shown in Table 2 indicate that students' overall MTLs is at a moderate level while their IM, EM, and SE are at high level. The table also reveals that students are moderately motivated in terms of PR and SD. However, students' level of motivation with respect to TA is at a low level.

Table 2. The overall MTLs and the MTLs with respect to its dimensions

	MTLS	IM	EM	PR	SD	SE	TA
Mean	100.43	19.56	19.59	18.18	13.24	19.14	10.73
Std. Deviation	11.48	4.06	4.10	4.14	3.92	4.04	3.73
Level of Motivation	Moderate	High	High	Moderate	Moderate	High	Low

4.3 Correlation Analysis

Bivariate data analysis was carried out to investigate the association between each independent variable with the ATTS. Table 3 presents the results.

Table 3. Correlations of Students' MTLs and its dimensions with students' ATTS

		MTLS	IM	EM	PR	SD	SE	TA
ATTS	Pearson Correlation	.609**	.406**	.460**	.448**	.122**	.422**	-.190**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000
	N	1315	1315	1315	1315	1315	1315	1315

** . Correlation is significant at the 0.01 level (2-tailed).

As shown in Table 3, while the MTLs, IM, PR, EM, and SE show significant positive correlations with the ATTS, SD shows a weak but significant positive correlation with the same. In contrast, TA shows a weak but significant negative correlation with the ATTS.

4.4 Simple Linear Regression Analysis

First, a simple linear regression analysis was run by taking the MTLs as the independent variable and the ATTS as the dependent variable. Table 4 shows the results.

Table 4. Results of the simple linear regression analysis

Independent Variable	Unstandardized Coefficients		Standardized Coefficients	t	p-value	VIF
	B	Std. Error	Beta			
(Constant)	-38.996	2.978		-13.094	.000	
MTLS	.830	.029	.615	28.160	.000	1.000

In Table 4, the p-value for the MTLs is less than 0.05. Hence, the ATTS depends on the MTLs. The R-square value is 0.378, which means 37.8% of the variance in the ATTS, in other words students' performance in science is explained by the MTLs. The assumption on residuals was not violated, as assessed from scatter plot and Shapiro-Wilks test of normality ($P > 0.05$). The following regression equation represents the relationship between MTLs and ATTS. Accordingly, for every unit increase in the students' MTLs, the ATTS is expected to be increased by 0.830 units.

$$\text{ATTS} = -38.996 + 0.830(\text{MTLS})$$

4.5 Multiple Linear Regression Analysis

A multiple linear regression analysis was run by taking the ATTS as the dependent variable and the six motivational dimensions as the independent variables. The results are shown in Table 4. The p-value for all the independent variables is less than 0.05. Hence, the ATTS depends on all the motivational dimensions. The R-square value was 0.380, which means 38% of the variation in the ATTS is explained by the six dimensions of motivation. The VIF values are less than 5.

Hence, there is no problem of multicollinearity. In residual diagnostics, the residuals were independent and normally distributed.

Table 5. Results of multiple linear regression analysis

Independent Variable	Unstandardized Coefficients		Standardized Coefficients	t	p-value	VIF
	B	Std. Error	Beta			
(Constant)	-12.281	2.506		-4.902	.000	
IM	.644	.125	.169	5.140	.000	2.265
PR	.871	.100	.233	8.676	.000	1.510
EM	1.098	.106	.291	10.357	.000	1.661
TA	-.921	.120	-.221	-7.695	.000	1.732
SD	.711	.087	.180	8.137	.000	1.027
SE	.785	.127	.205	6.160	.000	2.324

In the stepwise regression, all variables were significant. Therefore, the model which includes all six variables was selected. For this model, the R-square value was 0.380, which means 38% of the variation in performance in science is explained by the six variables. The best model, which predicts the effect of motivational dimensions on students' performance in science is given below. All the dimensions, except TA show a positive relationship with students' performance.

$$MTTS = -12.2 + 0.64(IM) + 1.10(EM) + 0.87(PR) + 0.71(SD) + 0.78(SE) - 0.92(TA)$$

Accordingly, for every unit increase in the level of EM, students' performance in science is predicted to be increased by 1.10 units, provided that the other independent variables remain constant.

4.6 A Comparison of Results with the Similar Studies

In this section, a comparison is made with similar studies, which adapted the SMQ as the research tool. The current research revealed that students' MTLs is at a moderate level and the correlation between MTLs and performance in science is 0.609. In the USA, Glynn et al. (2009)

reported the same for a group of undergraduate students as 0.61. Some other researches also provided evidence for the same association by using the same questionnaire (Chow & Yong, 2013; Ersoy & Aliçka, 2016; Salta & Koulougliotis, 2015).

Sri Lankan students' IM and EM towards learning science are at higher levels and the two constructs are positively associated with the performance in science. Pearson correlations are 0.449 and 0.534 respectively. Chow and Yong (2013) reported the respective correlations as 0.35 and 0.23 for a group of Bruneian secondary students, which were considerably lower than those of the Sri Lankan students. By the time of data collection, Sri Lankan respondents were getting ready for their GCE (Ordinary Level) Examination. As it was a critical examination, which is a breaking point of their school career, students may be intrinsically and extrinsically motivated. Asian students, in general, possess higher levels of both IM and EM compared to their counterparts in the Western world (Caleon et al., 2015; King, Ganotice, & Watkins, 2014). According to Zhu and Leung (2011) both IM and EM are in favour of students' learning in Asian cultures in contrast to the detrimental effect exerted by EM on students' learning in the Western world.

In the current study, PR showed the second highest correlation of 0.516 with science performance, while the level of PR was at a moderate level, but very close to the upper limit of the level. Chow and Yong (2013), however, report the same as 0.21 in terms of Bruneian secondary school students, which is comparatively low. It is necessary to make "science learning relevant both to the learner personally and to the society in which he or she lives..." (Stuckey, 2013, p. 1). It should be taken as a key goal of science education.

The correlation analysis revealed that SD has a weak, but significant positive correlation of 0.122 with Sri Lankan students' performance in science. The same correlation for Bruneian students is reported as 0.28 by Chow and Yong (2013). For a group of college students Glynn, Brickman, Armstrong, and Taasoobshirazi (2011) found a correlation coefficient of 0.41 in the USA. The nationally developed science curriculum, in which students experience a very limited control and choice over the subject content and the examination driven classroom practices may be a result of the low level of self-determined science learning among the Sri Lanka sample.

While a correlation of 0.482 between SE and students' PERSC was found in the present study, Chow and Yong (2013) reported the same coefficient as 0.37 for a group of secondary students in Brunei. For a group of American university students Glynn et al. (2011) and for a group of

American high school students (ages 14 - 16 years old) Bryan et al. (2011) found the same correlation as 0.58 and 0.56 respectively. According to STC, students' SE is the construct most related to their academic achievement (Bryan et al., 2011). Bircan and Sungur (2016) also reported SE as the best predictor of Grade 7 students' performance in science. Sri Lanka students' SE, in other words their belief that they can perform well in science may be mainly affected by their parents' attitudes towards science. A large majority (80%) of the respondents are belonged to low income families. Researches evidence that parents of low socioeconomic status perceive science as a subject only the most able achieves in (Fan & Chen, 2001; Gorard & See, 2009).

High TA for science assessment can be seen as a common characteristic among different student groups (Çetin-Dindar & Geban, 2010; Chow & Yong, 2013). Sri Lankan students' TA was also at a high level. It had a negative correlation of -0.293 with students' PERSC, which is in agreement with the other research findings (Chappel et al., 2005; Chow & Yong, 2013; Olatoye, 2009). One of the key reasons for the high level of TA among the group of Sri Lankan secondary school students may be that they were to sit for GCE (Ordinary Level) Examination to be held in a few months time. Students' belief that science is a difficult subject and the pressure exerted by the parents and the school on the cohort of students getting ready for this competitive national level exam may contribute to the increased TA.

5. Discussion

The current investigation provides a comprehensive understanding of how MTLs and its dimensions exert their effect on students' performance in secondary school science. "These motivation components can potentially influence the arousal, direction, and sustainment of students' science-learning behavior" (Bryan et al., 2011, p. 1051). As the research revealed, it can be generalized that Sri Lankan secondary school students were moderately motivated to learn science. Steps need to be taken to enhance the level of students' motivation referring to its significant effect on students' performance as evidenced by the present study and other research (Kusurkar et al., 2013; Vansteenkiste et al, 2005). If the level of motivation needs to be uplifted, understanding of this multidimensional construct and incorporating that knowledge with the classroom practices are essential.

The group of students had a high level of IM and EM towards learning science. Further, these two dimensions show a statistically significant positive correlation with the MTTTS and they were strong predictors in the regression model. In the Sri Lankan society, education has been strongly recognized as a means of social mobility and economic survival. These students are, therefore, intrinsically and extrinsically motivated to continue their schooling. In order to maintain the extrinsic motivation at a higher level, teachers should give frequent, constructive feedback, praises and rewards to build students' confidence that they can perform well. From the perspectives of Self-Determination Theory, EM is perceived as a construct consists of both less autonomous and more autonomous components (Ryan & Deci, 2000). According to the theory, quality of motivation, which is predominantly autonomous or self-determinant, is more important than quantity. If students' EM is comprised of highly autonomous aspects together with high IM, it would be critical to uplift the students' performance in science. For that, teachers and parents can facilitate children to experience the autonomy and social environments that promote autonomy, which are crucial for optimal learning and achievement (Chirkov & Ryan, 2001).

Although the students' level of PR is higher than that of SD, both dimensions are at a moderate level. Further, SD showed a significant, but poor positive correlation with the performance in science. Its predicting power in the regression model was also comparatively poor as reported in the similar research. The nationally developed science curriculum in which students experience a very limited control and choice over the subject content and the teacher-centered approach that the content is delivered in the classroom particularly at the secondary level may highly contribute to this situation. In Sri Lanka, especially at senior secondary level, teacher-centered methods are predominantly practiced due to the fact that the science curriculum is overloaded and national level examinations are highly competitive (Athurupane, Dissanayake, Jayewardene, Shojo, & Sonnada, 2011). Hence, it is claimed that the activities done in the science subject direct students more towards content learning with a narrow focus on exams (McCaul, 2007; NEREC, 2013). Consequently, students may not find the relevance of learning science to their personal goals.

Test anxiety among students towards learning science is at a high level and exerts a negative impact on students' MTLT. In order to reduce students' TA, teachers can take measures such as provision of revision materials for the exams, reviewing subject contents that are more likely to be tested in exams, conducting mock exams and discussing most appropriate techniques to handle problems given in science exam papers.

Probably, teaching science in such a way that students find it interesting, enjoyable and relevant will be the best attempt to foster and develop the level of motivation to learn science in terms of the six dimensions. In this regard, teachers should highly focus on student-centered activities in teaching science. For that, teachers can plan lessons by incorporating student-centered teaching methods such as discovery method, project method, problem solving method and group method (McKinney, 2011).

Students' term test score averages were examined as an indicator of students' performance. Test scores are only viewed as a correlate of motivation because many variables other than motivation can affect students' performance. In terms of practical limitations, in general, it is uncertain the validity and reliability of the mean term test score as a measure of students' performance. In Sri Lanka, basically, the preparation of term test paper is done by the school in the first term, by the zonal department of education in the second term, and by the provincial department of education in the third term. As a result, the standard of test papers can vary in a broad spectrum and subsequently the aforesaid uncertainty occurs.

6. Conclusion

The findings of the current study shed light on the fact that the overall motivation and its dimensions towards learning science correlate with student performance in science. In addition, they are strong predictors of students' performance as evident by the regression model. Therefore, curriculum developers who design and develop the subject, teachers who deliver the content and college administrators who design academic support programs need to take necessary measure to enhance students' motivation with respect to the motivational dimensions. Such attempts will contribute to develop positive attitudes towards learning science and to increase students' overall science performance in national level examinations.

It is recommended to extend the present study by incorporating both questionnaires and interviews as survey instruments so that it may yield a comprehensive understanding of students' MTLs. A similar study need to be conducted by incorporating school-based assessment results and public examination grades together with term test scores in order to have a broad profile of students' performance in science. In addition, longitudinal studies on motivational dimensions are also recommended so that changes in motivational orientations with time can be explored.

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A Critical Assessment of Tibetan Refugees and the Socio-Educational Concerns in Tibetan Children's Village (TCV) Schools in Dharamshala (India)

Swaleha Sindhi¹ and Adfer Rashid Shah²

¹The M.S.University of Baroda

²JamiaMilliaIslamia, New Delhi

Abstract

While improving the quality of education for refugee children is a priority for some of the host countries in the world, not many states have policies in place to provide or improve the education or create work opportunities for the fate bitten refugees. In the Indian context, Tibetan refugees are spread across the country and their main centre is at Dharamshala in Himachal Pradesh State where they run the government in exile besides other socio-educational, religious and cultural institutions. The fact remains that the refugees are beset with a plethora of problems, even today despite change and betterment in their lives. The prevalent inequalities are reflected by their low level of educational achievements, high life discontent, joblessness, etc. Though they have developed their own institutions be that educational or other and many of them are even aided by the Indian government however still much remains undone and unaccomplished as far as the collective refugee perception is concerned. The present socio-educational study aimed to assess the quality concerns in TCV schools along with the sociological question of the refugee set up. Besides understanding the underlying sociology of the Dharamshala Tibetan refugee populace, the prime focus was on the education; teacher competencies, curriculum transactions in classroom and students learning outcomes, etc, Therefore all the three TCV schools in Dharamshala were selected as sample; the study combined both the quantitative and qualitative research techniques for collecting and interpreting the data. The results showed that the teachers in the TCV Schools possess high level of emotional competency whereas average levels of cognitive and socio-cultural competencies owing to their deep sense of Tibetan identity which reveals a deep sociology of the community. The communicative competency i.e. the communicative activity among teacher and student is found to be low in TCV schools owing to the low exposure levels of both. As a first study to systematically analyze the teacher competencies in TCV refugee schools, this study strengthens the existing evidence base and concludes that identity crisis, hopelessness with the system, prolonged community fatigue, deep sense of alienation, high level of economic dependency are significantly responsible reasons.

Key Words: Sociology, Culture, Identity, Education, Teacher Competencies

Introduction

At present in India, Tibetan community forms the largest (around 150,000 as per the demographic survey, Central Tibetan Administration, 2009) refugee group among many other refugees from many neighbouring and distant countries. Tibetan refugees are granted a full range of benefits including legal residence settlements, voting rights and many other rights. They are the only refugee group to receive travel permits from the Indian government. These refugees are accommodated and assisted in accessing education, healthcare, employment and residence to varying degrees. However due to an adhoc approach of government and absence of any codified model of conduct, there is a lack of domestic framework to understand the status and experiences of the refugees in a more holistic perspective. Tibetan refugee crisis in India can be discussed from the perspective of the role played by the state in their development, their employment, their happiness index, their institutions, providing them quality education and their future in India. Although, more or less Tibetan refugees face the same development crisis as is faced by the Indians however, Tibetans do not take it as a national problem the way Indians do. Tibetans are still resilient to merge with Indian dominant culture and carry a strong sense of their own national identity, with a hope to go back to Tibet someday. Therefore it is important to understand the new generation refugee sociology and help them to sustain in their settlements. This would help Tibetan refugees to combat their low self-esteem, self-worth and self-confidence.

Improving education quality of refugee children remains a priority for all the host countries of the world and research studies point out on quality of education available to refugees as very poor (Dryden-Peterson 2011; OECD 2009; Robinson 2011; Smith 2009) and have identified key issues facing Tibetan refugees as placement of refugee children into mainstream schooling of the host country; maintenance of cultural identity; and loss of native language skills (Jones & Rutter, 1998). In India due to lack of integral policy for refugees there are hardly any efforts to bring them into the mainstream or create work opportunities for them. Though there has been a significant increase in the number of Tibetan schools in India since 1950, schools are not able to provide positive experiences to the refugee students. Though the guidelines from the National policies on Education (1967 and 1986), Programme of Action (1992) and the reports of education commissions and committees are for quality improvements, there are not many

suitable strategies developed or implemented by School Boards (Including Tibetan School Board) to improve quality at all the levels/stages of school education.

Teachers in refugee school can play a protective role for refugee students and the school experiences can bring normalcy to their lives, but there is a dearth of competent teachers in the schools (UNESCO 2009). Despite having high expectations from teachers in the knowledge society, Indian system of education has 4.52 million teachers, who are untrained or undertrained (Singh 2014). A question thus, probed is how to realize quality education for refugees and ensure opportunities to use that education for their future participation in society. The present study therefore seeks to address the issue of education quality in Tibetan schools and examine and analyze the quality of education available to refugee children with a particular focus on the impact of teacher competencies on student achievement levels in Math, Science and English subjects and the challenges faced by the TCV Schools.

Role of Teachers and Teacher Competencies

In India the concept of teacher competency is mostly discussed in a narrow dimension, it is considered as teacher's duties in school such as planning, implementation and assessment of the curriculum. In fact the teacher competencies have more dimensions like; field competencies, research competencies, curriculum competencies etc. Katane, 2006 defines competencies as the set of knowledge, skills, and experience necessary for future, which manifests in activities. Anselmus, S. 2011, refers to teacher's competence as the right way of conveying units of knowledge, application and skills to students. The right way includes knowledge of content, process, methods, and means of conveying content. While, Greenspan, S. 2013 refers to teacher's competence as the ability of the teacher to help guide and counsel his or her student to achieve high grades. The common understanding related to teachers' competencies is divided into three main areas as field competencies, pedagogical competencies and cultural competencies. Teachers' professional competencies can be composed of different dimensions other than the three main areas (Selvi 2010). Bandura's socio cognitive theory provides a well-established model of how teacher competence support can be associated with student motivation and achievement and examines the reciprocal relationship between cognition, behaviour, and environment (Bandura, 1986; Schunk & Pajares, 2005). Bovina, K (2002) has placed increased emphasis upon the basic areas of teacher's competence which include mastery of subject matter; understanding of human nature, interest in continuous professional improvement of knowledge.

While, Selvi, Kiymet, (2007) in his research (on professional competencies of English Language Teachers) indicated that teachers' professional competencies composed of four main subgroups such as Curriculum Competencies, Lifelong Learning Competencies, Social-Cultural Competencies and Emotional Competencies. The common understanding related to teachers' competencies in literature is thus divided into four main areas for the present study; Cognitive Competency, Emotional Competency, Social-cultural Competency and Communicating Competency. In this context the basic competencies that must be possessed by a teacher are as follows;

Cognitive competencies: Cognitive competencies are the competencies of teachers oriented towards carrying out their teaching role more effectively. Without curriculum competencies, it is quite difficult to produce an effective education service in schools.

Emotional Competencies: These competencies are composed of teachers' and students' values, morals, beliefs, attitudes, anxieties, motivation, empathy and so on. Teachers' emotional competencies can help students to learn and students' willingness to learn can be increased if teachers know how to improve the emotional dimension of students' learning.

Social-cultural competencies: It includes the knowledge about social-cultural background of students and teachers, local, national and international values, democracy and human rights issues, team and collaborative work with others. There is a strong relationship between learning and students' social-cultural background. Humanistic approach and social theories can be put into practice in the classroom by means of teachers' social-cultural competencies

Communication competencies: Communication competencies include voice, body language and words such as speaking, singing and sometimes tone of voice, sign language, paralanguage, touch, eye contact, or the use of writing. They include communication skills in intrapersonal and interpersonal processing, listening, observing, speaking, questioning, analysing, and evaluating.

Socio-Economic and Education scenario of Tibetan Refugees in India

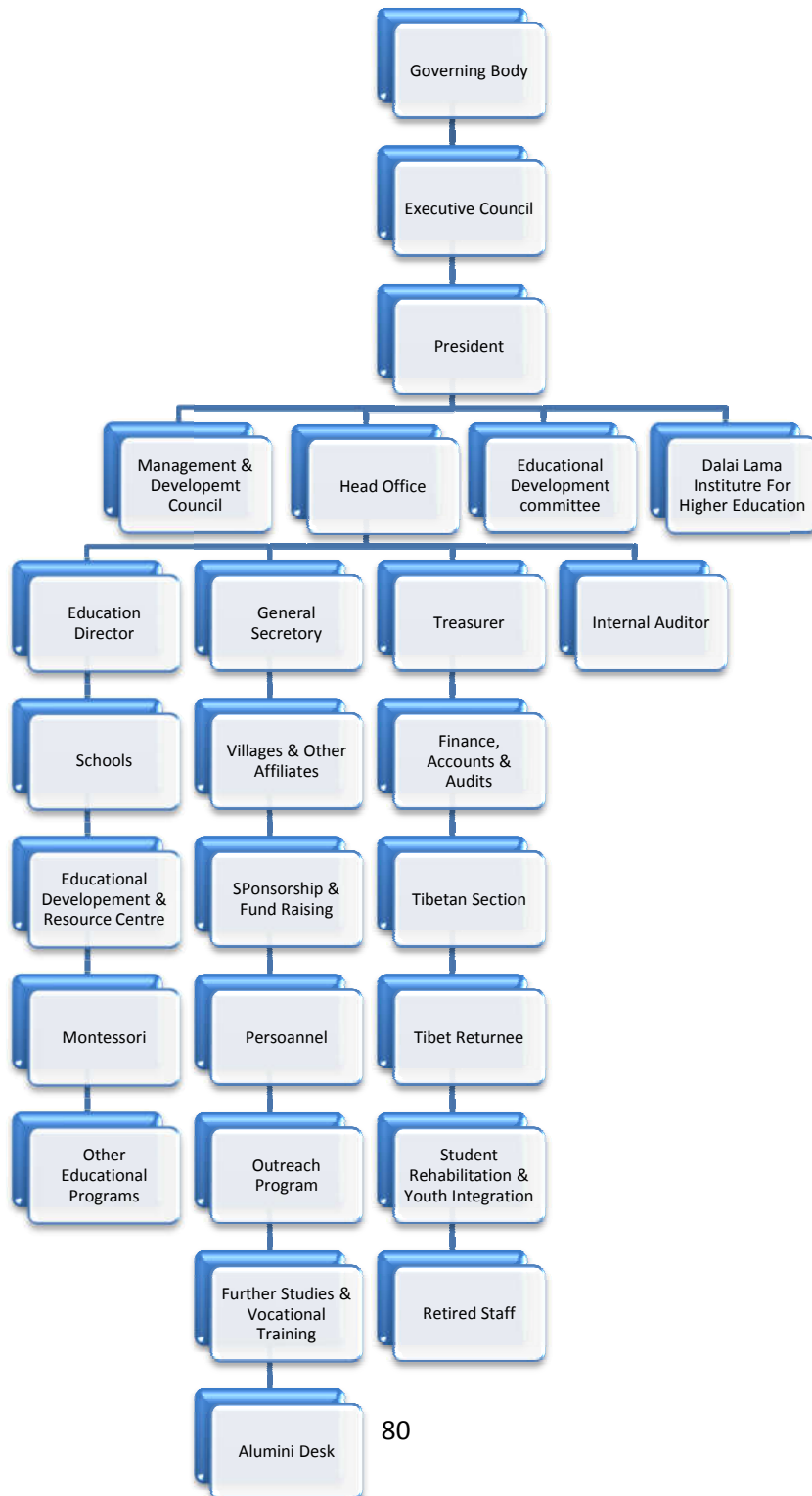
As per the official website, Tibetans in India live in 37 different settlements and seventy 70 scattered communities in Himachal Pradesh, Ladakh, Arunachal Pradesh, Karnataka, Uttar Pradesh, Madhya Pradesh, South Sikkim, West Bengal, Maharashtra and Orissa. Of the settlements, just under half are based on agriculture, while one-third is agro-industrial and a fifth is handicraft-based. The scattered communities consist of smaller groups of Tibetans outside of the official settlements who were not willing, or not able, due to limited resources, to be

accommodated in the settlements. Tibetans have experienced the social mobility by establishing culturally specific Tibetan schools in India. Though, India has a large and complex school education system, with more than 1.4 million schools under various education boards and more than 230 million enrolments, it provides Tibetan refugee children the same treatment as the nationals. The Department of Education looks after 73 Tibetan schools (not counting the private schools). There are around 24,000 students and 2,200 staff members in these schools. The autonomous school administrative bodies include: Tibetan Homes Foundation (3 schools), Sambhota Tibetan Schools Society (12 schools), Snow Lion Foundation (12 schools), Central Tibetan Schools Administration (28 schools) the CTSA enrolment is currently 9,991 students; it also runs 45 Pre-Primary schools. The Tibetan Children's Villages have (18 schools) for the Tibetan community in exile founded by His Holiness the Dalai Lama. TCV's are registered charitable organization and affiliated to Central Board of Secondary Education (CBSE), New Delhi following 10 plus 2 system of education. The TCV schools have; the Montessori education, Primary education, Secondary Education and Senior Secondary school education. The education programmes followed in the TCV schools Dhramshala are; Value education, Riglam, Peace education, Cultural activities, Care in the homes, Out Reach , Co-curricular activities, Community services, Focus on alumni, Mothers' Training, and Development and Research Centre. The following table present the TCV school data at Dhramshala.

Structure of Education in Tibetan School

Department of Education is the apex body that looks after educational affairs of the Tibetan administration and community in exile. It is one of the seven main departments of the Central Tibetan Administration (CTA) based in Dharamshala, India. CTA governs the Department of Education (DOE) and autonomous schools, while the Central Tibetan School Administration (CTSA) is primarily administered through the Indian government.

Figure-1.1 Tibetan School Education Board



The Governing Body of the Central Tibetan Schools Administration (CTSA), which is its main administrative authority, is chaired by the Joint Secretary of the Ministry of Human Resource Development, GOI. Its members consist of four Indians (two representatives of the Ministry of External Affairs; one representative of the Ministry of Home Affairs; and the Secretary of CTSA) and four Tibetans (Education Minister, Education Secretary, the Representative at the Bureau of His Holiness, The Dalai Lama, New Delhi; and the Director of the Central Institute of Higher Tibetan Studies, Varanasi).

Tibetan Children’s Village School

The Tibetan Children’s Villages have (18 schools) for the Tibetan community in exile founded by His Holiness the Dalai Lama. TCV’s are registered charitable organization and affiliated to Central Board of Secondary Education (CBSE), New Delhi following 10 plus 2 system of education. In Dharamshala there are in total 3 TCV schools, these schools follow a system of education that includes; the Montessori education, Primary education, Secondary Education and Senior Secondary school education. The education programmes followed in these TCV schools Dharamshala are; Value education, Riglam, Peace education, Cultural activities, Care in the homes, Out Reach , Co-curricular activities, Community services, Focus on alumni, Mothers’ Training, and Development and Research Centre. The TCV school data at Dharamshala is as follows;

Table-1.1

TCV School Data

TCV Upper Dharamshala-Villages (Data as of April 2017)					
Boarders	Day Scholars	Staff	Others	Old people	Total
1400	138	214	24	116	1895
TCV Lower Dharamshala-Residential Schools (Data as of April 2017)					
457	81	72	4	0	614
TCV McLeod Ganj- Day Schools (Data as of April 2017)					
0	103	9	1	0	113

(Source:personnel@tcv.org.in)

TCV schools with 12th grade, also has about 150 Indian, European, Japanese, and South Korean students whose parents have settled in Dharamshala, in addition to this TCV receives about 850 students each year who escape from Tibet.

Rationale

Tibetan refugees are the largest refugee community in India; sociologically speaking, Tibetan question in India is a tale of struggle for cultural identity, a hopeless hope to return to their snatched motherland, decades of inequality, socio-legal hassles and finally a quest for social inclusion in India while keeping their identity intact. Tibetan refugees today are in crisis on many fronts, their no merger with the dominant culture or lack of mainstreaming coupled with the issues of survival has further aggravated their crisis and sense of alienation. In the contemporary times with a paradigm shift in conceptions of knowledge and learning, the major thrust is on bringing an improvement in the standard of education. This has made quality prominent at all stages of education system, therefore providing quality education can prove to be one of the important areas for building Tibetan identities in India and promoting a sense of normalcy and feeling of hope among them.

As far as the education of such a significant community is concerned, the Tibetan Children's Village (TCV) Schools (largest autonomous educational organization) for the Tibetan community in exile has to a greater extent helped the community to build the socio-cultural symbiosis. Though Tibetans developed their own institutions be that educational or other and many of them are even aided by the Indian government however still much remains undone and unaccomplished as far as the collective refugee perception is concerned. With a marked increase in the number of Tibetan schools in India since 1950, quality has become a concern for these schools as increase in quantity is not associated with improvement in quality of education. To bring improvement in education quality the components of the curriculum, viz. syllabus, pedagogy and teacher competencies are important factors that must be addressed along with assessing teacher performance levels in the classrooms. In fact teacher competency levels in the Tibetan schools that follow the education system of the host country i.e. India is no different than the other School Boards in the country. Tibetan School Education is beset with a range of issues like poor school and student outcomes, lack of qualified and trained teachers (especially for use of technology), increasing student population, higher demand for personal attention and additional time allocation for effective teaching, placement of refugee children into mainstream

schooling of the host country; maintenance of cultural identity; and loss of native language skills (Jones & Rutter, 1998). Given the concerns over the deteriorating quality of education in some CTSA institutions, the current scenario endorses some concrete mechanisms from the government to train teachers and bring an improvement in their competencies. It is vital for the refugee community to generate quality professionals by achieving excellence in the school systems. Thus the sense of a cultural onslaught amid the existing dominant Indian culture, low education and poor infrastructure along with low motivated refugee teachers, poor content and structure of teacher training and professional development for teachers reflects the contemporary situation of the Tibetan refugee community in India.

Various researchers have explored different aspects of Tibetan Refugees; Baker, (2005) explored how nationalism is taught within the Tibetan refugee school system and its importance in maintaining solidarity amongst the Tibetan refugees. While Shekhawat, (2010) explored institutions that have been developed by Tibetans refugees to benefit Indians and to promote intercultural communication. But there is very little research on the issue of their education and aspects of culture identity and opportunity. The present socio-educational study aimed to assess the quality concerns in TCV schools along with the sociological question of the refugee set up. Besides understanding the underlying sociology of the Dharamshala Tibetan refugee populace, the prime focus was on the quality of education in Tibetan schools in India and it is served through quality evaluation, where teachers' competences represent the key factor along with curriculum transactions in classroom and students learning outcomes. Thus this study examines the impact of teacher competencies on student achievement levels in Math, Science and English subjects and challenges faced by the Tibetan Children's Village Schools in Dharamshala, India. The conceptual understanding of the problem and the insights gained from the review of related literature helped the researcher to formulate the research questions for the present study.

Research Questions

- a) What is the contemporary sociology of Tibetan refugees in India?
- b) What are the concerns of quality in Tibetan Children's Village (TCV) School in India?
- c) To what extent the teacher competencies in the TCV School make an impact on student learning outcomes?
- d) What are the challenges faced by the (TCV) Tibetan Children's Village Schools in India?

Objectives of the Study

- a) To get sociological overview of (TCV) Tibetan Children's Village School in India.
- b) To study the teacher competencies in the (TCV) Tibetan Children's Village School in India.
- c) To study the curriculum transaction in the (TCV) Tibetan Children's Village Schools in India
- d) To study the learning outcomes of the students in English Math and Science Subjects in the (TCV) Tibetan Children's Village Schools in India.
- e) To study Parents perceptions on the curriculum transactions in the (TCV) Tibetan Children's Village Schools in India
- f) To study the future challenges for (TCV) Tibetan Children's Village Schools in India

Explanation of the terms:

Sociology: sociology is the scientific understanding of human society. In the present study it aims to study the socio-cultural as well as political aspects of Tibetan community.

Culture: Culture is the way of life. In the present study it aims to get insight into the life style and values of Tibetans in India.

Identity: Identity is ones sense of self and his/her group. It is the distinct identity of Tibetans outside Tibet.

Teaching Competency: Minimum knowledge and information, skills, innovative capacity and productivity possessed by a teacher to carry out his/her work during the service.

Refugee Education: Refugee Education is access to educational opportunities for all the refugees in the host country.

Research Methodology

The study aimed to identify the teacher competencies in curriculum transaction, the current practices and the challenges when dealing with refugee students. From the population of 18 Tibetan Children's Village schools in India, a sample of all the three Tibetan Children's Village schools in Dharamshala of HP, India was selected for the study. In all 30 teachers (10 from each school), 30 Students (10 student council members from each school) and 30 parents (10 from each school) were selected randomly. And all the three Principals formed the sample for the study. A variety of data collection strategies were used to complement the current research e.g. Semi-structured interviews were conducted with Principals, the governing bodies and key members of the local community. Field interviews and conversations were with village residents

in a host of informal settings including orphan houses, playground, community centres, temple and homes. Questionnaire for parent, teacher and students, Document analysis was done for material including school inspection reports, school reports, websites, newsletters and social history records relating to each school. Photographs and video of each school were taken. Institutional Profile, Classroom Observation Schedule was used and focussed group discussions were held with PTA of three TCV schools.

Mixed method design was adopted for the study as quantitative or qualitative approach alone could not do justice to address the research objectives of this study. From the different versions of mixed method research, Sequential Transformative strategy was used in this study as it best serve the theoretical perspective. Researcher first collected and analysed both the quantitative and qualitative data and then integrated the results in the interpretation phase. Themes were developed to analyse the qualitative data collected and for the quantitative data a questionnaire with five point Likert type rating scale for teachers, parents and students were analysed. Each competency had five statements. The midpoint of the 5□point scale i.e. 2.5, was considered as a hypothesized mean against which the mean ratings were checked for their significance. The mean rating on four competency standards if found significantly higher than the hypothesized mean (the midpoint of the scale), was assumed as satisfactory with that particular teaching competency and vice versa. Data was triangulated by getting responses from all the three respondents on teaching competency standards in TCV Schools.

Major Findings

Findings for the study are mentioned under each Research question framed for the study;

1. What is the contemporary sociology of Tibetan refugees in India?

To answer this research question, i.e objective-1, field interviews and conversations took place with village residents in a host of informal settings including orphan houses, playground, community centres, temple and homes, with data recorded in research diaries. Following is the analysis;

Tibetans in India have travelled a long way and suffered enough to survive despite the governmental support in many ways. Right from granting of settlements, residential certificates, yellow books for travel aboard, permission to have their own government in exile in Dharamshala and other assistance, Indian government has taken their issues somewhat seriously. Today, they are granted Indian citizenship and passports even. They are already voters and day

by day their difficult life is getting easier in their second home India. The sociology of Tibetans in India therefore is a mixed bag right from their arrival until today, their issues and challenges have changed to a greater extent and we can argue their social and political preferences as well if not cultural. They may be residents of India today but their hearts beat from Tibet. They have been raising their demands to make their survival easier in India. Whereas, much has been addressed their still remain some key challenges they are still beset with. We cannot say that their society is in decline as they are constantly reinterpreting their symbols from their culture thus reviving the will of its members to survive. They have solely adapted to the new land and a major chunk of their populace-the younger generation are born and brought up in India-thereby have no adjustment problems.

Their new identity is a combination of old Tibetan culture and new strain of Indian cultural encounters. They have in a sense established a strong sub culture of their own. They have a system of values and modes of behaviour and life-styles which are distinct from others but remain a dominant culture of their settlements even today. In a sense we can argue that even after decades of their arrival they possess an identifiable dominant culture within their settlement and community identity. They differ in their resilience, activism and struggle as well. They have a strong sense of community sentiment and have learnt the economic survival tactics as well. While being in India they have mobilised themselves and achieved a lot in terms of soft diplomacy, new skills, new jobs and new life survival tactics. They have a strong sense of Tibetan identity and their love for motherland is undying.

Within India they have been successful to establish some institutions of excellence for their younger generations. An institution like the Tibetan Children's village school is one such example. There is a reflection of Tibetan identity in the physical environment; ambience of the school, bulletin boards decorated with traditional and colorful Tibetan prayers and flags. These traditional symbols of 'Being Tibetan' make the TCV School a major agency of the enculturation of cultural symbols like language, religion, performing rituals, dress pattern and so on. Discussions in informal manner brought forward the fact that there is a sense of alienation experience for refugee students in the host country, students have a feeling that success in mainstream schools, cannot be without loss of their cultural identity and assimilation into the dominant culture.

2. What are the concerns of quality in Tibetan Children’s Village (TCV) School in India?

To answer this research question i.e the 2,3 objectives of the study, a survey was conducted by employing questionnaire with five point Likert’s rating scale; it was divided under four major communication competencies based on the model developed by Selvi, Kiymet, (2007). These competencies are cognitive, emotional, socio-cultural and communication. It was analyzed using simple descriptive statistics. Mean and SD were calculated to find out competency standards of the teachers. The following table -1.2, displays the data under four selected competency standards in TCV Schools.

Table1.2

COMPETENCY STANDARDS								
Respondent	Cognitive Competency		Emotional Competency		Social Cultural Competency		Communication Competency	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Parent	4.14	.36	4.18	.32	4.05	.48	3.51	.52
Student	4.04	.46	4.19	.44	4.12	.30	3.34	.34
Teacher	4.23	.28	4.19	.19	4.17	.26	3.48	.25
Total Score	12.41		12.56		12.34		10.33	
Component Mean Score	4.13		4.19		4.11		3.44	

The above table revealed that the highest component mean score is (4.19) is for emotional competency of teachers. Among the four competencies studied, parents have perceived Emotional competency (4.18). It is assumed that parents were satisfied with the Emotional and Cognitive competency of teachers, in TCV Schools. This is indicative of good experiences among parents related to the education of their children; they are satisfied with the learning environment of children and the emotional care of children taken by teachers. It also shows that Teachers possess high degree of community feelings in the TCV schools. The cognitive competency composite score is (4.13). Whereas the teachers have given highest score to this competency (4.23), the high score indicates that in Tibetan school teachers are satisfied with their teaching methods and syllabus completion. It seems teachers adapt and refine their teaching

practices through continuous learning and reflection, using a variety of sources and resources. The socio cultural competencies composite mean score is (4.11), while students have given high score to this competency (4.12). The results indicate that students of TCV Schools perceived socio cultural competency as a dimension to be more satisfying. It was also evident in the TCV School that teachers understand the social cultural dimensions and are able to discover excelling students as well as encourage them to develop their abilities. There was a joyful feeling and a vital, vibrant atmosphere and environment. Cultural sensitivity for teachers is a must in the refugee schools. The Communicative Competency Component Mean Score (3.44) was the lowest among the other competencies. The teachers gave found themselves low at communicative competency is probably that their academic program simply does not have innovative educational and technology courses that can improve those competencies. Parents also gave low mean scores to Communicative competency as Parents of refugee students may have a stronger conviction to hold on to their home language and customs, whereas refugee students who are assimilating in the school setting, may adapt to their peers in order to fit in. An effective school involves sharing information with stakeholders concerning quality education, this has to be more active in Tibetan school as parent and community form a part of the school system.

3. To what extent the teacher competencies in the TCV School make an impact on student learning outcomes?

To answer this research question i.e objective 4,5 the classroom observation schedule was prepared it helped researchers to observe the students interaction with teachers in classrooms and school campus. Observation offered researchers the chance to learn directly from the classroom environment and provided depth to the framework with regard to professional development, relationships, and leadership components. While observing the interactions between staff .members and students, the researcher was able to articulate the value the relationships between them rather than relying on the staff members' interpretations during informal interactions. Observations made from the interactions between staff members within the learning environment and the role this interaction could play in the bigger picture of educating refugee student's added specific depth and support to the research. The information for curriculum transaction in Tibetan schools was collected by documenting the classroom activities/interactions related to three subjects learning materials, learning resources, learner initiated activities, teacher initiated

activities, experiments and projects carried out, noting reflection of the learner and teacher, and identifying the relevance of the curriculum transaction in terms of the Tibetan school students learning outcomes (grades). The classroom observation schedule contains items regarding the teachers' awareness of the curriculum, preparation according to the level and age of students, content analysis, objectives of lesson, selection and planning of appropriate teaching method/s and activities, consideration of psychological principles and previous knowledge of students, and development of learning resources.

Table 1.3

Cognitive Competency of teachers in TCV Schools		
Respondent	Mean	SD
Parent	4.14	.36
Student	4.04	.46
Teacher	4.23	.28
Comp. Mean Score	4.13	
Total Score	12.41	

The study also investigated the influence of teacher's competence on student's academic achievement in English, Science and Mathematics subjects. The table 1.3 above shows the cognitive competency as assessed by parents, students and teachers; the scores are high in rating. It reveals that teacher's competence greatly influences the performance of students in these subjects. Though the teacher competencies were evident in; classroom management and giving feedback to students, but the intent of the teacher's instruction in order to have high performance was not found to be appropriate in terms of selection of techniques of instruction. Teachers fall short to demonstrate knowledge at selecting, applying, communicating, and evaluating students' and students' practices. Due to lack of innovative teaching learning approaches the input mix and the educational processes in TCV schools remain deficient resulting in unsatisfactory levels of student learning in Math, English and Science Subjects. The poor performance in mathematics can be attributed to the correlates; Students' mathematical base, attitude towards mathematics,

study habits and parental involvement. English grasping capacity of students is found to be very low; they find it difficult to cope with subjects taught in English. Teachers lack the capability to encourage students and provide frequent opportunity for students to interact with each other in the classroom. In fact a certain kind of peer pressure to speak in Tibetan also seems to exist in Tibetan schools with students who try to speak in English being 'teased'. It was observed that most of the communication between teachers and students and amongst students themselves was mostly in Tibetan and this is one reason why English as a language is neglected both in written and spoken forms.

Parents view the TCV as best schools among other Tibetan schools in exile and are ready to send their children to TCV schools even by paying fees. They have high appreciation for the school as, Tibetan subjects are taught in these schools. At the same time they also shared their concern for Curriculum Transaction approaches like Seminar presentations and self and peer evaluation to be missing in the TCV schools, the teachers follow textbook-based teaching. The other concerns of parents were that there is not much use of ICT in the classrooms and a substantial numbers of students at the secondary stage are not trained for laboratory skills. They shared that there are several cases of teachers beating students in TCV School though there is a ban on corporal punishments.

4. What are the challenges faced by the (TCV) Tibetan Children's Village Schools in India?

To answer the last research question i.e objective 6, challenges faced by the TCV schools were analyzed based on the interaction and observations. It is a challenge for the TCV schools to analyse the problems faced by teachers to get a complete picture for low quality of education and low student learning outcomes. The leadership support to teachers in academic areas is found to be low in TCV School. Principals are found to be more concerned about the lack of funding for the orphan children to look after all the orphan homes. Teachers do not get regular in service training, they are observed to follow textbook-based teaching while the curriculum mandates on activity-based learning. Feedback, a core component of formative assessment, is recognized as an essential tool for improving performance in education. Hattie (2009) identified feedback as the single most powerful educational tool available for improving student performance. Teachers lack the capability to encourage students and provide feedback or frequent opportunity for students to interact with each other in the classroom. Another concern is that the curriculum

transaction is not continuously monitored in the process of their implementation in TCV schools, this stands as a challenging situation to achieve quality. Another challenge is parent's emphasis on Tibetan subjects and cultural identity. They must understand that it is equally important to perform well in other areas too. In an informal discussion parents shared their view that TCV schools are the best schools among Tibetan schools in exile as their children are taught Tibetan subjects in these schools. One of the parents shared his concern on corporal punishment. He said "Though there are many schools that provide free education to our children but we still prefer to send our children to the TCV schools by paying fees, but it is a matter of concern that the teachers do not follow government rules, in spite of a ban on corporal punishment there are several cases of teachers beating students in TCV School.

Discussion and Directions for Future Studies

Tibetan community in India and its social interaction is all a process of survival with grace, hope, identity and self presentation. While a range and complexity of competences required for teaching in the 21st century, any one teacher is not likely to have them all, nor can they develop them all to the same high degree. Teachers' competencies are highly important in both developing and implementing the curricula effectively and thereby raising students' learning achievement levels. Therefore the teacher competencies should continuously be the subject of research and analysis and should be developed by updating. The present study suggests further research of the same kind in schools of different educational boards or different type of schools e.g. the grant in aid and private schools. This will help explore the mechanisms to bring improvement in student outcomes in different school boards and school types. It will further help to know the existing systems and efforts made by schools to develop teacher competency levels.

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School-based Financial Management Practices & Issues in Sri Lanka

Sumith Parakramawansa

Southern Provincial Department of Education, Galle, Sri Lanka

Abstract

Through the free education policies materialized during past seven decades in Sri Lanka issues were identified in relation to under utility of learning-teaching aids and inequality in distribution of resources. For the purpose of solving these issues, the programme of quality inputs was introduced in 2000. Under that, every government school has been provided with a particular fund to ensure a quality education. Though the intention of this process was to improve activity based learning experiences, it didn't become a reality because of the weaknesses in the school based financial management system in handling quality inputs in the schools. The aims of the research were to examine the school level financial management practices, constraints faced by the principals, to mitigate the effects of such constraints and to introduce suitable management practices which may help to utilize the funds of quality inputs effectively and productively. For this, collective case study method which comes under qualitative research approach was used and data were collected using concept maps and interviews held with the principals of a selected educational zone. It was found that financial management practices vary according to the variations of the school, no school was seen carrying out perfect financial management practices, Principals have not realized that quality inputs are an intrinsic part of learning teaching process, Much emphasis is laid on administrative matters rather than qualitative development of education, The principals have not understood their envisaged role as an instructional leader, Assistance of parents and other community has not been taken in sufficiently, Funds for quality inputs From the government have not received in time and sometimes the received amount was not enough. From the research it is recommended that the principals should be given training on educational planning, monitoring and evaluation. Moreover exchanging experiences among schools, spreading best practices, making the process of quality inputs simple, providing funds in time, to be flexible in transferring cash between different financial votes, increasing community participation in learning teaching process and handing over the facilitating process to the education officers.

Key words: *School based financial management, Educational Quality Inputs (EQI), Managerial Practices and Issues, Norm Based Unit Cost Resource Allocation Mechanism (NBUCRAM)), Resource Utilization of learning teaching process*

Introduction

Educationists have emphasized the importance of physical and human resources for the successful implementation of the educational process. It is stressed that the provision of learning teaching materials, used in the learning teaching process is just as important as the provision of other resources in schools. The involvements in activity based education and teaching through practical experiences enable a child to learn more quickly and productively with better understanding. Also Free education from kindergarten to university education is one of the great events and Sri Lankans have been enjoying over the last 70 years that they are proud of. This education policy permits all Sri Lankans to enjoy free public education from grade one to university. As a result of this, Sri Lanka has obtained a high literacy rate in the region. With the introduction of free education up to tertiary level, making the vernacular as the medium of instruction and establishment of a wide network of schools, have created a demand for education which has played a vital role in upward social mobility in Sri Lanka. The free education is further strengthened by giving free text books and uniform materials to each student in schools leading to minimize disparities. These changes have provided equal opportunities for every citizen of Sri Lanka to enter the formal education system. The positive picture of education system in Sri Lanka has been celebrated in developing policy circles and the economic literature for its success in providing widespread access to primary and secondary education and enabling the country to attain comparatively high human development index (World Bank, 2005). Of the free education policies materialized during past seven decades in Sri Lanka issues were identified in relation to under utility of teaching aids and inequality in distribution of resources among schools. Especially, one critical constraint on the promotion of high quality education in Sri Lanka has been the absence of an efficient and equitable mechanism to allocate and distribute resources for primary and secondary schooling.

As Quality is never an accident; it is always the result of high intention, sincere efforts, intelligent direction and skillful implementation. In successful educational reforms the quality input is always considered a key element(Ummulbanin, 2008). Kularathne & Koddithuwakku (1991) have suggested establishing a school based grant scheme for qualitative development of education according to pre identified priorities by the educationist to improve access to better quality education for all. Attempts at reforming education sector giving priority to improving quality of education, extending education opportunities to all, improving relevance of education,

teacher education and improving management of education and resource provision (Wijesundara, 1998). For the purpose of quality development and to establish equity in education under the World Bank funded Second General Education Project (GEP2), programme of Education Quality Inputs (EQI) was introduced in 2000 (World bank, 1997). Under this, all Sri Lankan government schools were given authority to decide and procure educational quality inputs needed for learning and teaching processes of the schools. EQI are defined to be “all materials, equipments, instruments and services used to add the quality of education to the students in the learning process and by the teachers in the process of imparting knowledge” (FC, 2002).

Sri Lankan context of Educational Quality Inputs (EQI)

Under the EQI scheme, Sri Lankan public schools were given primary responsibility for purchasing EQI, except for a few special chemicals, science equipments and capital goods for children with special needs. For this, every school has been provided with a particular fund under four different categories of expenditure items: consumable goods, capital goods, expenditure on the repair and maintenance of capital goods, and expenditure for external consultancy services, which is calculated by a Norm Based Unit Cost Resource Allocation Mechanism (NBUCRAM) based on the following factors which were produced by educationists: student Population of the school, availability of different grade-cycles in the school, availability of different subject streams in advanced level classes of the school, availability of special need education unit in the school and special quota for deprived School. Money for different types of EQI and funds for primary grades and secondary grades are specified separately. These stipulated amounts of money are then credited to the current accounts of all the schools. Identification and Purchase of EQI goods are done through two school level committees: the School Purchasing Committee (SPC) and the School Evaluation Committee (SEC).

It is important to introduce such kind of funding system to the public schools because of the most sophisticated approaches to formula funding to date have been associated with recent efforts to reform public education in a number of countries, especially where that reform involves a significant level of decentralization of authority, responsibility, and accountability of schools within a centrally determined framework of policies, priorities and standards (Ross and Levacic, 1999). According to Balasooriya, (2011) issues of resourcing schools in developing

countries were discussed during the past several decades, and actions were taken to minimize resource allocation disparities. Equity is a fundamental principle in the field of education, and economists use this criterion to evaluate institutional arrangements from a welfare economics perspective. To establish equity in the education system, a well-designed mechanism like formula funding of schools needs to be used. Education economists are also concerned with equity in the resource allocations and outcomes. At present, schools have adopted formula funding of schools which is a rational and transparent mechanism of resource allocation, to ensure procedural and distributional equity.

The importance of the study

Though the intention of Educational quality inputs process was to spread activity based learning experience to ensure a quality education, in school level it didn't become a reality as school based financial management weaknesses were in the system in handling quality inputs. The sole purpose of the research was to examine the school level financial management practices, constraints faced by the principals, and to mitigate the effects of such constraints and to introduce suitable management practices which may help to utilize quality inputs effectively and productively.

According to the formula of NBUCRAM, the planning branch of the Provincial Department of Education is responsible for calculating and allocating money to provincial schools and monitoring and evaluating the programme of EQI. The researcher serves as the deputy Director of Education at the planning branch of the department of Education, Southern province and the duties are in implementing and monitoring the programme of EQI. It is revealed by the researcher that there were financial managerial defects in handling quality inputs for enhancement of learning-teaching process, reporting, monitoring and evaluating EQI in school level. Also in different occasions, responsible authorities of public finance: the finance commission, the funding agencies, the auditor general, and the chief secretary of the provincial council have stressed a large amount of bank balance, which was given to the school as quality inputs and was left unspent for the quality enhancement of learning-teaching process. According to school census data in 2004 schools received Rs. 579 million (USD 5.72 million) on the EQI programme. However, Rs. 121.8 million (USD 1.2 million) of this funding was left unspent. On average, schools were able to spend 81 per cent of the funds made available to them (Arunatilake & Jayawardena, 2008). The discussions with the personnel of zonal, divisional and

school level who are responsible for implementing the programme of EQI, have revealed that there were practical issues and weaknesses of school based financial management which affect the performance of the programme of EQI.

Vital role of financial resources is improving the students' achievement in particular and in general school improvement. Nevertheless, this vital role may not be visible, unless the resources are properly managed (Farrukhsho, 2004). Therefore, financial management seems to be an important aspect of it. Moreover, the role of the principal appears more considerable in financial management as a school leader. However, the extent to which the principal has to be engaged in financial management varies from system to system and from school to school. Therefore it is important to study school based financial management practices which are currently used by the Sri Lankan public school system.

The research has been intended to study school based financial management practices with reference to the programme of Educational Quality Inputs (EQI), to identify constraints and issues which may have faced by the principals, in implementing the programme and to propose appropriate management practices for effective and efficient utilization of Educational Quality Inputs. Therefore it has been discussed related literature of school based financial management as the key concept of the research and also has been included theoretical perspectives of financial management, international perspectives of financial management, related issues of the programme of EQI and proposals for future success of the programme.

Review of literature

Management in education is not an end in itself. Good management is an essential aspect of any education service, but its central goal is the promotion of effective learning and teaching. The task of management at all levels in the education service is ultimately the creation and support of conditions under which teachers and their students are able to achieve learning. The extent, to which effective learning is achieved, therefore becomes the criterion against which the quality of management is to be judged (Bush, 2007). Educational management is continuous process through which members of educational organization seek to co-ordinate their activities and utilize their resources in order to fulfill the various tasks of the organization as efficiently as possible (Hoyle, 1981). The concept of management of education is the process of planning, organizing, directing and controlling the activities of an institution by utilizing

human and physical resources so as to effectively and efficiently accomplish functions of teaching, extended learning teaching activities and research (Khedekar, 2011).

Financial management in education means maximum utilization of financial resources which have already received and to be acquired to achieve objectives of the school. But it differs from financial management in business world. Financial function refers to raising money to finance the business and investing these in short-term financial assets or in stocks, and capital assets (Levacic, 1989). Especially under this, it has been discussed; the School Based Management and it can be defined as devolution of decision-making power and the autonomy to the school. Caldwell (2005) described SBM as the: *“systematic and consistent decentralization to the school level of authority and responsibility to make decisions on significant matters related to school operations within a centrally determined framework of goals, policies, curriculum, standards and accountabilities”* (p. 3). That is to say SBM is a concept related to decentralization of decision making authority in the school management context and under this, the school would be mainly given autonomy for school budgeting, curriculum implementation, use of physical and human resources and teacher training (Dias, 2005). It is desired to confirm the quality improvement and sustainable development of the schools by devolution of decision-making power and the autonomy to the school. Therefore School based financial management can be defined as school level decision making and practice of maximum utilization of financial resources to achieve objectives of the school.

Theoretical perspectives of School based Financial Management

School financial management does not operate in a vacuum (Knight, 1993). There is no single all-embracing theory of educational management. This reflects the diversity of educational institutions, the varied nature of problems encountered by educational institutions, and the multifaceted nature of theory in education and the social sciences. Bush (2004) classified the main theories of educational management into six major models of educational management: formal, collegial, political, subjective, ambiguity and cultural. This study uses a formal model as the researchers assume that schools are hierarchical systems in which principals use rational means to peruse agreed goals. Principals possess authority legitimized by their formal positions within the schools and are accountable to school governing bodies for their activities (Bush 2004). Formal models give prominence to official structures, rational

processes, the authority of leaders and accountability. These may be linked to the school management tasks identified by Clarke (2007), namely planning, organizing, leading and controlling. The administration of a school’s finances is an integral part of effective school administration (Mestry 2004; Ntseto 2009). Each of the aforementioned tasks will briefly be considered regarding financial management. These tasks are interrelated in acircular manner and depicts on figure 1.

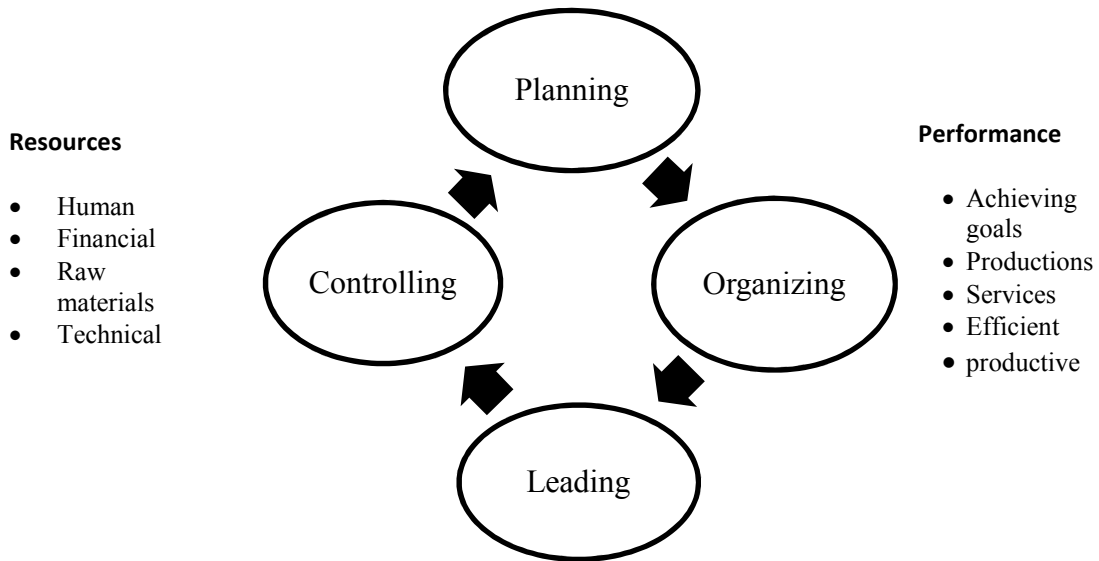


Figure 1 – Management tasks(Source: Daft, 2010)

Planning describes as determining what is to be achieved, setting goals, and identifying appropriate action steps. In the other manner, planning centers on determining goals and the means to achieve them. Organizing describes as allocating and arranging human and material resources in appropriate combinations to implement plans. Organizing turns plans into action potential by defining tasks, assigning personnel, and supporting them with resources. Leading describes as guiding the work efforts of other people in directions which are appropriate to action plans. Leading involves building commitments and encouraging work efforts that support goal attainment. Controlling describes as monitoring performance, comparing results to goals, and taking corrective action. Controlling is a process of gathering and interpreting performance feedback as a basis for constructive action and change.

The management of a school's finances is an integral part of effective school management (Mestry 2004; Ntseto 2009). Joubert and Bray (2007) describe a school's financial management as the performance of management actions connected with the financial aspects of a school for the achievement of effective education. The common factor in these definitions of financial management is that a connection is made between the management tasks and the financial aspects of a school. The implication is that the management of school finances involves the task of planning, organizing, leading, as well as controlling (Clarke 2007). Therefore study of each of the aforementioned tasks is important regarding the research of School based financial management.

International perspectives of School based Financial Management

Different researchers from various countries have examined about School based Financial Management.

Tooley & Guthrie (2003) have examined the organizational financial management practices of the New Zealand state education system, after the Public Financial Management reform. They have suggested that accounting and management technologies have served a useful, political purpose, although not in the way espoused by the 'New Public Financial Management' (NPFM) proponents.

Mestry (2004) has stated that the provincial department of education, South Africa provides financial management training for school governing bodies but many schools still encounter problems in this area. When financial problems are referred to the department of education, many remain unresolved. Collaboration among all stakeholders and transparency of decisions and procedures are necessary to ensure the effective and efficient management of schools' finances.

Hansraj (2007) has focused on the financial management role of principals of Section 21 schools, South Africa and has recommended followings. Every stakeholder involved in school-based management will require ongoing training, development and support. The budgetary formula's which ascribe a sum of money to every school based on the decile of the school, needs to be re-evaluated. The department of education set-up computerized financial software in all Section 21 schools. The employment of a bursar to all Section 21

schools, principals was provided with extra remuneration in recognition of the enhanced duties resulting from their involvement in school-based education.

Swartz, (2009) has examined the management of public schools' finances in the Pinetown Education District, South Africa and has recommended that review of the allocation of additional functions to school governing bodies, Drafting of a generic school finance policy, Composition and Functions of the Finance Committee, Review of the Funding Norms for Public Schools, Training of School Governing Bodies, Reviewing the Role of the Department of Education,

Ho (2010) has examined whether the school-based financial (SBF) management that is effective in Western countries is applicable to schools in Taiwan. The results indicate that the SBF model that is effective in the West is also applicable to schools in Taiwan, and that the Taiwanese government should adopt SBF, while adapting it to suit the local environment.

Motsamai, Jacobs and Wet (2011) have focused Policy and Practice of financial Management in Schools in the Mafeteng District of Lesotho. They have found that there is a noteworthy discrepancy between the School financial policy and theory. Despite the policy document's extensive directive on financial planning and organization, problems regarding budgeting, the collection and recording of school fees, as well as a lack of administrative support abound. The absence of a clear policy directive on financial leadership and control is reflected by unsatisfactory financial leadership and arbitrary auditing practices. Findings of this study repudiate the argument that the existence of a financial policy will inevitably lead to sound financial management in Lesotho schools, and consequently quality education.

Yau & Cheng (2011) have examined the effectiveness of 'financial planning and control' in school-based management in Hong Kong primary schools. The findings of this research show that the schools should decentralize financial budget planning to match school policy. Teachers should participate in giving opinions on the financial planning of their respective subjects. The principal has the responsibility to monitor whether the groups can use the budget properly.

Arunatilake & Jayawardena (2010) Using the experience of the Educational Quality Inputs (EQI) Scheme in Sri Lanka the paper examines the distributional aspects of formula-based funding and efficiency of decentralized management of education funds in a developing country setting. The study finds that the EQI fund distribution is largely pro-poor. However,

results show that to reduce disparities allocated funds need to be fully utilized. The findings of the study supports the hypothesis that qualified principals, adequate levels of human and physical resources and state level monitoring and support are needed for the success of education management at the school level.

Deffous et al.(2011) has aimed at giving a broader understanding of the policy and concept of school grants in developing countries and, in order to do so, it refers to five countries in particular: Ghana, Indonesia, Lesotho, Nicaragua, and Sri Lanka. This research has presented common recommendations for these four countries, to advance the financial management, as follows: need to preserve the local community support and implication, the use and the size of grants must be well considered, the level of available contributions and costs must be identified and better incorporated into the analysis of the ability and willingness to pay, policies and procedures should be simple.

Related issues of the programme of Educational Quality Inputs (EQI)

In review of the pertinent literature, different issues Related to the programme of Educational Quality Inputs have been identified by different researchers (Karunaratne, 2002; Peris, 2002; Arunatilake& De Silva, 2004; Coalition for Educational Development, Sri Lanka (CED Sri Lanka), 2008). Those can be categorized under the fields of receiving funds, technical support, human resources, rules and regulations, purchasing and storing. Under the field of receiving funds have not received in time or irregularly and sometimes receiving funds in several installments was also identified as a problem and sometimes received amount was not enough. Untimely provision of funds leads to inefficiencies and ineffective use of funds. It also results in wastage of funds as schools are neglecting those funds.Schools are unable to plan their yearly activities properly, when funds are delayed. Under the field of technical support, zonal level feasibility for monitoring and evaluation of the programme was inadequate; there has been repugnance for devolution of managerial responsibilities among different layers of educational management; there hasn't a proper Educational Management Information System (EMIS) for monitoring the programme. Under the field of human resources, many schools find it difficult to keep accounts and follow procedure due to lack of human resources and working capacity at school level. Many schools do not have management assistants; they have to rely on teachers for keeping accounts and managing projects, in addition to teaching. In large schools, where account keeping is complex and in very small schools with teacher shortages, create problems in

activating proposed programmes. Frequent transfer of teachers is also a hindrance to the smooth flow of the school activities especially when they are in charge of account keeping. Teacher shortage is an agonizing problem, especially in remote schools. Although teachers who teach in remote schools, are given incentives, they get transferees from those remote schools soon. There is an acute shortage of teachers for subjects such as science, mathematics and English. Filling forms is required for the use of EQI goods and it is time consuming. According to one zone, the teachers who are involved in this regard are usually taught mathematics and science. They feel that they have to use their teaching time a lot to fill these forms. When schools have a shortage of teachers, they have to bear the additional burden of administrative work in midst of teaching. Lack of personnel who have accounting knowledge is a problem in many schools. Many schools do not produce summary reports at the end of the year. Schools are unaware as to why they have not received funds requested. Some indicated that there is a difference between the requested funds, and the received funds. Some zones found that lack of knowledge about circulars and financial regulations relating to budgeting on the part of principals was a problem. The complex nature of rules and regulations, and the difficulties in accessing documents indicating these rules and regulations was as tumbling block. Some schools have mentioned that when a new rule or regulation comes into effect, they are documented and provided to schools. Subsequently, teachers are trained on these new implications. But, when the teachers who received this training go on transfer, more often the new teachers, who come in, do not have the required knowledge on the rules and regulations. Documents relating to rules and regulations are often lost as schools do not have proper way of keeping records. Many school principals did not have the training and the personal characteristics to become effective planners and project administrators. In some schools teachers were more knowledgeable of planning and executing projects, but they were not given the proper authoritative power to conduct these activities effectively. Some schools have faced difficulties to find out qualified persons for technical evaluation; inadequate participation of stakeholders in management. Under the field of rules and regulations there were repealed and complex rules and regulations to financial management in government schools; the procurement process was more complex; Schools are required to maintain large number of documents regarding the EQI. Under the field of purchasing and storing, two school level committees are in some schools which are responsible for purchasing EQI haven't the freedom due to influence of principals; and some principals have controlled purchasing of EQI; Many schools found that keeping to the procedure of calling for several

quotations before purchasing goods was a problem. This was especially a problem for rural remote schools where there are no places to purchase goods in a competitive manner. But, some zones even in urban areas stated this as a constraint. Frequently changes of price were also a barrier. At the purchasing time, the goods are not available at the prices given in the quotations. Some schools haven't proper storage facilities; Some schools have neglected circumstantial factors in purchasing goods; two school level committees haven't updated systematically; Some schools have difficulty in finding proper suppliers of EQI, especially in remote areas; Some suppliers who have quality goods have reluctant to supply goods according to government procurement procedures.

Proposals for future success of the programme of Educational Quality Inputs (EQI)

Different researchers have recommended a variety of measures that are in place to address the related issues associated with low performances of the programme of EQI. Arunatilake & Jayawardena (2008) have suggested to appoint qualified principals, adequate teachers and subordinate staff to schools, and to establish state level monitoring system as number of measures to implement to reach the optimum level of the programme of EQI. Under improving planning and budget estimation, CED Sri Lanka (2008) has mentioned that there is an urgent need to provide funds on time. Information on the availability of funds helps to make planning more effective. Many schools were unaware of the availability of funds. As such, they have to revise existing plans to fit the reduced budget. It is also important to build capacity at school, levels. Although the planning and management functions of education have been decentralized to schools, the school capacity to handle these added administrative functions have not been improved adequately. Awareness about the objectives of various education programmes should be given to all stakeholders at the school level, so they are able to make full use of available resources to develop schools. The documents detailing the rules and regulations of budgeting and implementing projects should be simplified and consolidated so that schools are not required to fill various forms and keep various types of records and accounts regarding different types of funds. A concise document presenting all rules and regulations should be made available to schools. The budgetary process should be made more practical and systematic. Heads of schools should be notified regarding the proper procedures with regards to conducting needs surveys, calling for price quotes, appointing committees to implement the programmes, and effectively dealing with problems encountered in purchasing materials and

equipment. Also, under improving resource availability CED Sri Lanka (2008) has proposed that the rules and regulation relating to EQI should be relaxed. Under Improving Efficiency of Utilization many of the inefficiencies in resource usage by schools relate to inefficiencies in the education system, such as delays in giving funds and other resources to schools, issues relating to teacher shortages, improper transfer of teachers and appointment of teachers without considering the needs of schools. Action should be taken to correct these shortcomings urgently. Otherwise, even the little resources that are available to schools are not utilized efficiently. In addition to this, several actions can be taken at the school level to improve the reasons mentioned above, usage of funds efficiently. The main reason for low utilization of funds is the lack of understanding of school heads and the stringency and the impracticality of the rules and regulations in relation to the utilization of funds. It is critical to revise various circulars relating to budgeting and school development to make them simpler, practical and user friendly. All rules and regulations should be combined in one document, for easy reference. These documents should be made available for schools as well as a wider spectrum of stakeholders. Record keeping and reporting at school level should also be simplified. Zonal officials or consultants should be assigned to assist schools that are in critical need of technical assistance for proper planning and record keeping, so that they can receive on-the-job training on these matters. Further, zonal and divisional officers should visit schools more frequently. Special attention should be given to visits to schools located in remote areas. Action should be taken to replace all acting principals with properly trained and qualified principals over time. Acting principals should be appointed on a temporary basis with specified duration only till a qualified principal is appointed. Zones should be instructed to assess the performance of schools, so that they can identify best practices and replicate these in other schools. Schools that find innovative means of solving problems should be recognized. There should be strict turn-around times for giving approvals, so that project implementation at school level is not disrupted. The authority to transfer funds across budgetary items should be given to the zone. This will increase the efficiency and productivity of fund utilization. The zone should assign a group of suppliers from whom the items can be purchased after looking into the quality and cost. Flexibility should be given to transfer funds from one item to another, so that previous year's unutilized funds can be used where funds are needed. Schools with large EQI balances should be assisted to use the EQI funds for useful purposes in the school. Two or three day workshops during December vacation at the planning stage may be held to prepare plans as well as to give on the job training on

planning and account keeping. There should be management and administrative assistance to do the paper work, make the teachers free to involve in teaching process. For this, the service of the administrative assistants recently recruited can be obtained. Under Reducing Wastage, a main reason for the wastage of funds is the inefficiencies on the part of education administration. As pointed out by many zones and schools, the delayed receipt of funds and non-continuity of funds for projects already started, compel schools to abandon them or to hurry through the use of the funds compromising the fund's effectiveness. In addition, the lack of proper storage facilities and an inventory system, also contributes to wastage as supplies are destroyed or stolen. Make the school aware about the necessity of storage space when purchasing large expenditure items such as printing machines and band equipment. Schools should have a proper place to store school supplies and they should be issued to teachers when required and keeping a proper inventory. Within schools, assessments should be undertaken to evaluate the education development projects. The perception of the students on these may be obtained as they are the end beneficiaries. The projects that have used little resources, but given large benefits should be recognized, and such projects should be replicated and disseminated where possible. Teacher training programmes organized by schools and zones should be held but these should be scheduled such that the teaching activities in schools will not be disrupted. As much as possible, these should be held only during weekends or during the school holidays. When funds for these activities are disbursed late, the schools should be allowed to use them in the subsequent school year, so that they can be spent meaningfully according to the plans. Under improving implementation, monitoring and evaluation, the auditing process should be improved. It should be viewed as a function that supports the school rather than finding faults and asking to write excuses for doing such. Auditors should be given the authority and the training to support schools to improve record keeping and accounting, and to give direction to use financial resources more effectively. The monitoring and evaluation process needs to be more systematic. The zonal level capacity for monitoring and evaluation should be improved. The zones and divisions should be given more powers to take corrective action measures when anomalies in fund utilization are observed. The zonal level staff should be given training on proper monitoring and evaluation procedures. Only qualified professionals should be recruited to the system. Appointments to various positions should be done on a merit basis. Action should be taken to minimize political interference which undermines the whole monitoring and evaluation process. Civil society, parents and teachers should be consulted in the monitoring process, and

they should be more involved in the school budgetary process. However, caution should be taken when obtaining the involvement of outsiders in school processes, especially in small rural schools, to avoid irregularities and domination of the process by a few elite.

Methodology

A collective case study design under qualitative approach was applied for this research to gain understanding of school based financial management practices, difficulties and issues faced by the principals during implementation of the programme of EQI. In Sri Lankan context the establishment of the provincial council system in 1987, the central government handed over the control of most schools to the provincial councils. Those schools are referred as “provincial schools” come under the purview of the provincial authorities. However, a handful of schools denoted as “national schools” are directly managed and receives funds from the line Ministry of Education. There are four types of schools as indicated below depending on the terminal grade of the school: Type 1AB, Type 1C, Type 2 and Type 3

This research is set within public schools in Education Zone of Ambalangoda, Sri Lanka, by using typical case sampling. Ten Participants have been selected to represent all 84 school principals of the selected Education Zone their School category and gender are as follows.

Table 1 Selection of Participants

School category	Participants		
	Male	Female	Total
1AB National School	1	1	2
1AB Provincial School	1	1	2
1C Provincial School	1	1	2
Type 2 Provincial School	1	1	2
Type 3 Provincial School	1	1	2
Total	5	5	10

In this research, data were collected using concept maps and interviews held with the principals of a selected educational zone.

Concept mapping as a data gathering technique

Concept mapping is a data gathering technique which allows the individual to visually represent the connections between the concepts while specially explaining the nature of the relationship in writing. As Novak and Gowin (1984) state a concept map is a two dimensional diagram that contains and directional named links. In concept maps, concepts are unified by relationships between the concepts are seen and understood. They are constructed from concepts grouped into propositions linked by statements of relationships. Novak and Cañas (2006), define *concept* as a perceived regularity in events or objects, or records of events or objects, and *propositions* as statements about some object or event in the universe, either naturally occurring or constructed. Propositions contain two or more concepts, usually connected using linking words or phrases to form a meaningful statement. Connecting lines are always read down the page unless an arrowhead indicates that it should be read in the opposite direction (in cases of possible ambiguity, an arrowhead is added). The approach to constructing the concept maps followed the guidelines put forward by Novak (1998) and Novak and Cañas (2006). Concept maps have been used by number of researchers as a research instrument (Wickramasinghe, 2004; Irvine, et al, 2005; Mustamin & Muzammil, 2012). However, Novak and Gowin (1984) suggest that knowledge representation is far more complex and dynamic than can be demonstrated by concept mapping alone, therefore concept mapping can be better enhanced with other strategies such as interviews, for example, Jones and Vesilind (1994). The structure of concept map provides the researcher with a useful and visually appealing way of exploring the participants, cognitive structure or schemas of long-term conceptual knowledge which can be compared to interview data to reveal what managerial practices which were used in implementation of the programme of EQI. Therefore in this study concept map data was supported by the interview data that was collected after the concept maps were constructed

Procedures of Data collection

In the process of data collection of this research, at the very first participants were informed about the background of the researcher and the research, purpose of the research and ethical consideration of the research and build rapport with participants. Then the procedures of

constructing concept maps have been described to the participants. Then they were given opportunity to construct sample concept map about familiar topic. Then the researcher has discussed with participant about their sample concept maps. Then the participants have been instructed to construct their own concept map about school based financial management with considering process of distributing, consuming, record keeping, supervising and feed backing of EQI and people who take part that process. After drawing their maps each participant would have to force semi- structural interview based on the own map. The interviews have been recorded and end of the interviews those were transcribed as soon as possible. The textual data derived from the principals' concept maps and interviews are presented as case studies. Ten participants were originally chosen for the study but two participants did not fully complete the concept mapping exercise, and therefore eight case studies are presented.

Discussion

In qualitative analysis, based on each research question data were categorized under themes which have been identified in literature review. According to that findings related to each research question were given below.

First research objective is identified and it is about managerial practices which used in school based financial management of education quality input programme. When comparing the research literature can be described it using management tasks namely planning, organizing, leading and controlling.

This study reveals that the school based management practices under the function of planning are done a situational analysis, before beginning the planning process forecasting future state, using the clear criterions, setting goals and targets, identification of needs, allocating resources according to identified priorities, doing democratic approach in planning, maintain an Educational Management Information System (EMIS) for planning, starting re-planning process after reviewing the past supervision reports, practicing the planning as continuous and circular process, additions to state funds utilizing the alternative funds, under the EQI programme preparing the budget according to subjects and grades, kipping high priority to education quality development, according to past experiences and feedbacks keeping more weight to solve identified problems, keeping appropriate time frame, collecting information for

planning process by various methods such as written formats, classroom observations, interviews with teachers and deciding future needs by evaluating exciting resources.

This study also reveals that the school based management practices under the function of organizing are assign duties of teachers according to their experiences, appoint purchasing and evaluation committees, assign duties to committee members, organize sections to need analysis, organizing purchasing, book keeping and supervising processes, establish an accountability system.

This study also reveals that the school based management practices under the function of leading are that the results of utilization of EQI have been announced in staff and sectional head meetings, prizes, certificates and letters of recommendations have been awarded to teachers who have achieved higher results, utilization of EQI has been evaluated in students' exhibitions, high performing teachers and students have been appreciated and motivated in students' and school development society meetings, in end of each school term utilization of EQI which affected to the students' achievement levels have been evaluated and discussed with primary and secondary teachers separately, using project files to evaluate the students' achievement levels, evaluating the achievements of students' competencies levels, literacy levels, reading skills and creative skills and awarded stars weekly.

This study also reveals that the school based management practices under the function of controlling are calling for supervisory reports of EQI utilization from sectional heads; evaluation committee has reviewed those reports thoroughly, using appropriate indices to evaluate utilization of EQI, analyzing the results of those evaluations quantitatively and qualitatively, comparing those results with objectives and targets and if there are any negative variance, take remedial action to correct that, every teacher has been supervised with special attention to utilization of EQI, paying special attention to low performed teachers and getting guidance and instructions to them from sectional heads. In classroom supervision, evaluate utilization of EQI according to teachers' guides, done a progress review at the end of the school term. Identified low performing teachers; take action such as changing responsibilities, enhancing supervising opportunities, instead written report to assessment of student exercise books, assign responsible for parallel class supervision to grade coordinators.

Second research objective is about difficulties and issues faced by the principals during implementation of the programme of Education Quality. Those can be categorized under the fields of receiving funds, technical support, human resources, rules and regulations, purchasing and storing. Under the field of receiving funds for quality inputs have not received in time and sometimes received amount was not enough. Also among different categories of expenditure items such as consumable goods, capital goods, expenditure on the repair and maintenance of capital goods, and expenditure for external consultancy services, some categories haven't received sufficient amount. Under the field of technical support, zonal and divisional level supervision of the EQI programme was inadequate. Monitoring, evaluation and facilitating the programme also weren't sufficient. Auditing the accounts also weren't sufficient. Under the field of human resources, many schools don't fulfill the required academic and supportive staff. Some members of the school staff are not aware about the programme thoroughly and not interested in their training needs. Some of them have negative attitudes which constraint to implement the programme.

The third research objective is to identify proposals for future success of the programme according to principals' point of view. The participants of the study have suggested that the EQI process should be simplified. The suggestions are: make aware the financial regulations, appointing financial assistants to schools, training on financial management and usage of computers for book keeping, of schools. The schools should be made aware of annual allocation of quality inputs before the month of November of the previous year in order to facilitate the planning process. Annual allocation of quality inputs should be based on performances of EQI in the previous year. Develop technical skills of teachers on quality development, using mass media for public awareness; taking disciplinary actions against principals and teachers who are reluctant to implement the programme of EQI programme, supervising EQI accounts of schools and giving instructions to relevant parties in successful implementation of the programme.

Recommendations and Implications

Objectives of this research are to examine the school level management practices, difficulties faced by the principals during implementing the programme of Education Quality (EQI), to minimize such difficulties and to introduce suitable management practices which may help to utilize quality inputs effectively and productively. The data of the research were

analyzed qualitatively, drew the findings and discussed them and reached the following conclusions.

It was found that financial management practices vary according to the variations of the school, no school was seen carrying out perfect financial management practices, principals have not realized that quality inputs are a definite part of learning teaching process, much emphasis of principals' is laid on administrative matters rather than quality development of education, the principals have not understood their envisaged role as an instructional leader.

It was found that principals have faced different issues Related to the programme of Educational Quality Inputs and those can be categorized under the fields of receiving funds, technical support, human resources, rules and regulations, purchasing and storing. These issues have been interrupted to gain expected performance of programme of EQI and have been impacted to underutilize the funds. Main issues which are identified in this research as follows; Funds of EQI have not received in time or irregularly and sometimes received amount was not enough, Schools are unaware of the availability of funds at the beginning of the year to setup their annual plans, Complex nature of rules and regulations, barriers of transfer of funds among different votes such as consumables, capital, maintenance and repair, higher order process. Technical support and facilitation given by the zonal and divisional officers to implement the programme of EQI in schools is not satisfactory. Lack of academic and non academic staff of schools is the main constrain in implementing the programme. Not fulfilling the training needs of school personnel regarding the financial management is another constrain as well. Lack of storing facilities of EQI is another constrain. In addition the assistance of parents and other community has not been taken sufficiently in implementing the programme. To overcome these issues according to principals' point of view they have suggested improving administrative support, fulfilling academic and non-academic vacancies, keeping awareness of the programme among school personnel and fulfilling their training needs.

From the research it is recommended following suggestions to better implementation of the programme of EQI. The following management practices under planning, organizing, Directing and controlling which have been identified by this research should be implemented in each and every school. There should be organized sessions to exchange experiences among schools and spread best practices of the field of school based financial management.

Under the function of planning every school should appoint a planning team consisting; the principal, deputy principals, sectional heads and senior teachers. In implementing the curriculum should be contributing stake holders' ideas to better decision making in utilizing the financial resources. Every school should do a SWOT analysis of curriculum implementation based on level of student achievement, existing resources and supervision reports. Based on that setting the teachers should be made aware of the goals and targets. According to that, identify the learning activities, requirements of quality inputs as per sections and subjects, prepare lists of requirement and forecast the current year amount of EQI based on the past year. In addition to that prioritization of the lists by considering quality inputs which received from school community based on clear criteria. If any subject should pay special attention, prepare annual implementation plan, getting contribution of the school community as planned. The annual implementation plan should be amended according to the funds received and reviewed according to feedbacks after the implementation.

Under the function of organizing function of Management; appoint sectional heads and assign duties them and other teachers to implement the school curriculum, updating Procurement and technical evaluation committees, organizing the process of procurement and book-keeping, organizing distributing the EQI, organizing supervision process and maintain Educational Management Information system related to the curriculum implementation.

Under the function of leading: communicating institutional objectives to teachers, progress review in every term of all assigned duties, procurement and book-keeping process, supervisions relating to the EQI. Motivate student and teachers who have acquired higher performance and while making aware that information to all stakeholders of the school.

Under the function of controlling: Frequent monitoring and supervision of Financial management of EQI, evaluating based on of EQI by indexes such as advancement of students achieving levels and competencies levels using results of school based assessments and term tests, advancement of school daily attendance of students, decrease of school dropouts, advancement of student creativity, comparison of the progress and targets and also analysis of results above mentioned aspects quantitatively and qualitatively. If there is a negative variation should take a remedial action.

Redefine the principals' envisaged role as an instructional leader and empower them through capacity development by educational planning, monitoring and evaluation, attitude development.

Process of the EQI is an exhausting one because it is too complicated. Therefore it should be simplified and be introduced in a computer based book-keeping system in case of larger schools. Flexibility should be given to transfer funds from one vote to another according to school requirements.

Under the school based management programme management committee of every government school already has an appointed professional as a representative of Zonal education office. The responsibility of facilitate the programme of EQI should be given to him and then he can give technical support and guidance relating to the financial management to the school. Therefore every Zonal representative of school management committee should be given training on school based financial management.

There is an urgent need to provide funds on time but as there is a delay in state funding due to the long process, schools should be consider alternative funding sources and increase community participation for that matter.

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