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MESSAGE FROM THE PATRON IN- CHIEF

The role of research in social sciences is increasingly becoming more challenging than ever before. The times are changing fast and resultantly inter- connectivity is gaining a prominent place for rapid solution of newly emerging puzzling issues. Immediate addressal and redressal measures are needed to locate the areas of lack of understanding or misunderstanding in human affairs and meet the challenges with candidness and fairness. The diversity of life needs to be seen as a natural gift and is to be valued as an asset. Variety is to be seen as a spice of life. Research in social sciences is eminently suited to bring cultural varieties to the fore front for analysis and forge ready synthesis or possible reconciliation. Research in social sciences is an eminent tool to dig out the hidden recesses of human mind and to set a stage for mutual understanding of our multi-faceted human affairs. Concerted efforts are needed to goad the researchers in the field of social sciences to pick up courage and confront the thorny problems of human existence with admiration and placidity.

MESSAGE FROM THE SENIOR ADVISOR

The Journal of Research in Social Sciences offers its pages to contributors from various disciplines belonging to the category of social sciences but the times have dictated that a new vision for the traditional concept of social sciences should emerge. The traditional concept of social sciences had embraced economics, politics as integral components along with sociology, social psychology, psychology, education, anthropology but as knowledge areas in these subjects have enlarged, each subject like economics and political science have become authentic disciplines on their own. So there has arisen a desire to allow a status to each subject and multiple disciplines have come into being. An important aspect of today's life is that our social environment is becoming increasingly complex and interconnected. This calls for bridging multiple disciplines into one holistic approach under the title "of human sciences" rather than simply social sciences. The Journal of Research in social sciences in therefore broadening its horizon to incorporate all research work done in any of the disciplines belonging to human life. This would also provide variety of food for thought to every type of reader.

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The Relationship between Self-Construal, Job Satisfaction and Organizational Commitment

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Abstract

This study aimed to investigate the relationship between self-construal, job satisfaction and organizational commitment among young working adults in Malaysia. The objective of the study was to examine the significance of job satisfaction and organizational commitment based on participant's self-construal. Data was collected via online survey from 420 young working adults in Malaysia aged between 21 to 30 years (M=26.30 years).Descriptive statistics and Pearson's correlation analyses were used in the data analysis. Pearson's correlations showed that self-construal was significantly positive correlated with job satisfaction and job satisfaction was significantly associated with all three organizational commitment constructs, namely affective commitment, continuance commitment and normative commitment. Particularly, job satisfaction was positively correlated with affective commitment and normative commitment but negatively correlated with continuance commitment. The results indicated that self-perception has significant influence on young working adults' attitudes on job and organizations that they work with as a whole.

Keywords: Self-construal, job satisfaction, organizational commitment, young working adults

Introduction

Employee's turnover has become a vital issue in Malaysia where almost seven out of 10 employees in Malaysia are prone to leave their jobs for better careers based on 2013/2014 Randstad World of Work Report (The Malaysian Insider, 2014). It is essential to keep employee turnover rate low because high turnover rate is generally being harmful to the existing employees psychologically. From an economic perspective, a high turnover has significant negative impact on the productivity and profits of an organization (Hemdi & Abdul Rahim, 2011) as well as bringing destruction to the organization in both forms of direct and indirect cost (Ali, 2008) which often overlooked by the employers. For example, selection, recruitment and training of new employees are direct cost while reduce morale and increase work pressure among the existing employees are indirect cost incurred by an organization (Ali, 2008).

People criticized that employees nowadays are no longer loyal to their organizations as they used to be in the past. There is a common perception where loyalty towards the organizations decreased among younger generation or young working adults. Young working adults who known as Generation-Y (Gen-Y) is characterized by having relatively lesser work experiences and unstable job tenure may experience lower level of organizational commitment and have higher intention to quit their job as compared to the older counterpart. They tend to leave the organization when they received higher pay offered by other organization. Therefore, it becomes a challenge to the organizations to enhance a sense of commitment as well as the attachment and loyalty among their employees (Lo,

Ramayah & de Run, 2010) nowadays. Gen-Y comprises more than half (51.5%) of the total employment in Malaysia (Department of Statistics Malaysia, 2014) compared to other age group. Thus, they have significant influence on the organization's performance.

An organization's success is highly depends on the commitment and participation of its employees. Organizations can help improving their employees' commitment by satisfying their needs, establish mutual trust and create an appropriate organizational culture (Asgari & Dadashi, 2011). As employees become more committed to their organization, their retention rate increases, which in turn reduces operating costs (Liou, 2008). In contrast, when employees are dissatisfied at work, they tend to be less committed and will look for other opportunities to quit. Dissatisfied employees may create problems for their organizations where they may involve in counterproductive activities if they remained in the organization. Besides, when employees are not satisfied, they reported poorer mental health and modest physical health problems (Faragher Cass & Cooper, 2005).

Organizations are groups of people who work interdependently toward desirable goals and people of all organizations have some degree of interdependence with each other (McShane & Von Glinow, 2010). Oftentimes, individual's self-construal is integrated with cultural orientation whereby independent self-construal is comprehended as individualistic while interdependent self-construal is comprehended as collectivistic. Individualists cooperate with team members to attain group goals to the extent that the goal cannot be obtained by working alone. In contrast, collectivists cooperate and concern on group interest more than attaining personal goal. Hence, compared to individualists, collectivists are more loyal and committed to the organization while less likely leaving the social group (Rego & Cunha, 2009). Wang, Bishop, Chen and Dow Scott (2002) found that collectivist orientation is a significant predictor of affective commitment in China, a well-known collectivist country. This is because group norms, beliefs and values are more salient to collectivists than individualists. Hence, collectivists are more likely to adopt organizational goals and values, and eventually more psychologically attach to the organization. In the West, Marcotte (2011) found that participants with an interdependent self were more likely to expect other people to stay committed to an organization than participants with an independent self. While Marcotte (2011) examined the participants' perception of others' organizational commitment level, this study however focuses on participants' self-perception on commitment to the organization.

Literature Review

Organizational commitment plays an important role in organizational behaviour. Empirical studies found that organizational commitment appeared to be a central concept in studying employee's work attitudes and behaviors, and it is highly correlated with the intention to leave an organization and actual withdrawal behaviors (Allen & Meyer, 1996). Allen and Meyer (1990) identified three dimensions of organizational commitment which are affective commitment, continuance commitment and normative commitment. Affective commitment refers to employee's emotional attachment to, identification with, and their involvement in the organization. Continuance commitment refers to the commitment based on the costs that employees associate with leaving the organization. Normative commitment refers to employees' feelings of obligation to remain in the organization. To sum up, affective commitment is influenced by personal characteristics and work experiences; continuance commitment is

affected by employee's perception of their job outlook and alternatives if they leave their current organization; and normative commitment is affected by social and cultural orientations (Allen & Meyer, 1990).

Similar with organizational commitment, job satisfaction involve feelings about the work situation. It refers to the employee's positive feelings and attitudes about one's job (Riggio, 2009) and it helps induce the employee to work in long term position (Mudor & Tooksoon, 2011). When the job is consistent with employee's values and needs, job satisfaction is likely to be high and eventually lead to employee's retention. Job satisfaction also refers to the results from the comparison of perceived outcome with what the employee's desired (Lee, 1998). It involves how employees feel about the rewards that they received (Tan & Waheed, 2011) in the organization.

Empirical studies found that job satisfaction is associated with organizational commitment. However, past studies showed inconsistent findings concerning these two variables. In the study of Iman, Raza, Tehseen Shan and Raza (2013), they found that job satisfaction has a positive impact on all three organizational commitment aspects, namely affective commitment, continuance commitment and normative commitment. Their study revealed that increased in job satisfaction level will increase the levels of all organizational commitment facets. However, Lumley, Coetzee, Tladinyane and Ferreira (2011) as well as Kaplan, Ogut, Kaplan and Aksay (2012) found that job satisfaction was significantly positive correlated with affective commitment and normative commitment, yet no significant relationship was found between job satisfaction and continuance commitment based on the correlation analyses. In addition, Meyer, Allen and Smith (1993) illustrated that job satisfaction was significantly positively related with both affective commitment and normative commitment but negatively correlated with continuance commitment.

In promoting the organizational commitment level among young working adults, individual's self-construal too linked with their attitudes and feelings toward the organization. Markus and Kitayama (1991) proposed two dimensions of self-construal, which are independent self and interdependent self. An independent self is highly associates with independence, uniqueness, separation from others, perceive others primarily as a reference for comparison (Aronson, Wilson & Akert, 2007) and view their selves as measure of everything. Interdependent self-construal, on the other hand, stresses connectedness, belongingness and close relationships with others (Aronson et al., 2007). Bochner (1994) found that Malaysian held more interdependent self-compared to Australian and British.

Oftentimes, independent self-construal is comprehended as individualistic while interdependent self-construal is comprehended as collectivistic. In individualist cultures, people give priority to uniqueness, diversity, self-expression and individual's internal attributes while collectivist cultures concern about dependency, conformity, group cooperation, focuses on other's needs (Franzoi, 2006) and social harmony (Guo, Schwartz & McCabe, 2008). However, Singelis (1994) claimed that independence and interdependence exist in all cultures and individuals can hold both independent and interdependent self-construal. Lin, Lin, Liang and Chung (2006) too found that individualist and collectivist can coexist within a person.

An employee's collectivist orientation reveals his/her loyalty to a social group – organization. Collectivists found to be more loyal and committed to the organization as well as more willing to adopt organizational citizenship behaviour while less prone to leave (Rego & Cunha, 2009). In a collectivist culture, employees share and cooperate with colleagues in order to achieve group goals. Hence, affective commitment becomes important because

employees have desire to stay with the organization to maintain a feeling of identification with the group. On the contrary, continuance commitment is found more important in individualist culture because employees stressed own achievement and self-enhancement. Thus, individualists would rather stay with their organizations when the organization offers greater chances for growth and recognition (Marcotte, 2011).

Research Objectives and Research Hypothesis

The purpose of this study was to examine how young working adults construed their self as well as their attitudes towards their job and organizations. Besides, the study would also like to examine the relationships between self-construal, job satisfaction and organizational commitment. Therefore, the research objectives are:

1. To examine young working adults' self-rating on independent and interdependent self-construal.
2. To examine the relationship between self-construal, job satisfaction and organizational commitment among young working adults.

The following hypotheses were formulated:

H1: There is a significant relationship between self-construal and job satisfaction.

H2: There is a significant relationship between job satisfaction and organizational commitment.

H3: There is a significant relationship between self-construal and organizational commitment.

Methodology

Research Design

This study was a descriptive study that applied correlational approach which interested to examine the relationship between self-construal, job satisfaction and organizational commitment among young working adults. An online survey with self-administered questionnaires was conducted as the major assessment in this study. All questionnaires received were then used for data analysis.

Participants

A total of 420 participants were recruited in this study through convenience sampling. All participants were young working adults aged 21 to 30 years old (M=26.30) in Malaysia. Young working adults who engaged in this study were remained anonymous and no personal information was released.

Instrumentation

The instruments that employed in this study included the revised version of Organizational Commitment Questionnaire (OCQ), Job Satisfaction Survey (JSS) and Self-Construal Scale (SCS).

Organizational Commitment

The revised version of Organizational Commitment Questionnaire (OCQ, Meyer, Allen & Smith, 1993) was used to measure participant's organizational commitment level in terms of affective commitment, continuance commitment and normative commitment. All organizational commitment levels were scored separately and all statements in the questionnaire were used to pertaining the participants' perception of their relationship with the organization and reasons for staying. Participants were required to rate the statements along a 5-point Likert scale (1

= Strongly Disagree, 5 = Strongly Agree). Higher scores on the scale indicated higher or stronger commitment level and vice versa. The Cronbach's alphas were 0.67 for affective commitment, 0.55 for continuance commitment, and 0.62 for normative commitment.

Job Satisfaction

Job Satisfaction Survey (JSS, Spector, 1994) was used to assess participants' attitudes about the job and aspects of the job. It was used to measure the level of overall job satisfaction in terms of nine facets: pay, promotion, supervision, fringe benefits, contingent rewards, working conditions, co-workers, nature of works and communication. The questionnaire contained 36 items in total and each facet was assessed by four items. About half of the total items were reversed scoring and participants were required to rate along a 6-point Likert scale (1 = Disagree very much, 6 = Agree very much). Total scores of the combination of all facets indicated young working adult's overall job satisfaction. Higher scores on the scale indicated job satisfaction and lower scores indicated job dissatisfaction. Cronbach alpha of this measure was 0.82.

Self-Construal

A newer version of Self-Construal Scale (SCS, Singelis, 1994) was used to measure participant's individual-level self-construal as two distinct dimensions and not opposite poles of a single factor. Participants were required to rate along a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree). For both independent and interdependent self-items, participant's scores were summed up and divided by 15 to give a mean score of each factor. Hence, each participant will receive two scores. Higher score on one scale indicated participant's perception of self-construal. The reliability of this scale was 0.82 for independent self-construal and 0.80 for interdependent self-construal.

Data Analysis

All data collected from the study were analysed using Statistical Package for Social Science (SPSS) 20.0 software. The data analysis consisted of two statistical procedures which are descriptive analysis and inferential statistical analysis. Descriptive analysis was first computed to describe the frequency and percentage of the general characteristics of the respondents in terms of demographic variables. Next, inferential statistical analysis like Pearson's correlation was utilized to examine the relationships between all variables.

Results

Descriptive Statistic

A total of 420 respondents participated in this study. Without rejecting any questionnaires with incomplete answers, none of the responds were eliminated from final analysis. Participants' personal characteristics included gender, age, marital status, educational level and current working environment. As shown in Table 1, there were more female respondents (62.4%, n=262) as compared to male respondents (37.6%, n=158). In terms of education, more than half of the respondents were university degree holders. A total of 245 respondents were Bachelor's degree holders (58.3%), followed by 130 respondents with Master's degree (31%). Another three respondents were PhD degree holders (0.7%) and one participant was with professional certificate (0.2%). Only 9.8% of the respondents were with secondary school certificate (n=41). Hence, it can be assumed that majority of the young working adults

studied up to tertiary education nowadays. In this study, 196 respondents perceived themselves as more interdependent self (46.7%) than independent self (44.8%) while 36 respondents scored equal on both independent and interdependent self (8.6%).

Table 1: Personal Characteristics of the Respondents in the Study (N=420)

Characteristics	Frequency (n)	Percentage (%)
1. ***Gender***		
Male	158	37.6
Female	262	62.4
2. ***Age***		
21-25 years old	116	27.7
26-30 years old	304	72.3
Mean	26.30	
SD	1.82	
3. ***Marital Status***		
Single	368	87.6
Married	52	12.4
4. ***Educational Level***		
Secondary school certificate	41	9.8
Bachelor's degree	245	58.3
Master's degree	130	31.0
Philosophy of Doctorate (Ph.D)	3	0.7
Professional Certificate	1	0.2
5. ***Current Working Condition***		
Office-based	370	88.1
Site-based	48	11.4
Others	2	0.5
6. ***Self-Construal***		
Independent Self	188	44.8
Interdependent Self	196	46.7
Equal (Independent-Interdependent)	36	8.6

Bivariate Findings

The correlation table showed that self-construal (r= .10, p<.05) was significantly correlated with job satisfaction. The findings revealed that young working adults who perceived themselves as interdependent self-showed higher level of job satisfaction. Results also showed that self-construal was significantly positively correlated with all organizational commitment constructs, namely affective commitment (r= .23, p<.01), continuance commitment (r= .14, p<.01) and normative commitment (r= .26, p<.01). Thus, the results indicated that

young working adults who claimed themselves as interdependent self were more likely to show higher level of organizational commitment.

When looking at the relationship between job satisfaction and organizational commitment, job satisfaction was significantly correlated with all three organizational commitment constructs. Particularly, job satisfaction showed high positive relationships with affective commitment (r= .60, p<.01) and normative commitment (r= .41, p<.01) but low negative relationship with continuance commitment (r= -.14, p<0.01). Hence, the findings indicated that young working adults who were more satisfied with their current job showed more affective commitment and normative commitment to their organization but less in continuance commitment.

Table 2: Correlations between Self-Construal, Job Satisfaction and Organizational Commitment

	Self-Construal		**Job Satisfaction**	
	r	***p***	***r***	***p***
Job Satisfaction	.10*	.04	-	-
Affective Commitment	.23**	.00	.60**	.00
Continuance Commitment	.14**	.00	-.14**	.00
Normative Commitment	.26**	.00	.41**	.00

* Correlation is significant at the 0.05 level (2-tailed).

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

Discussions

The purpose of this study was to examine the relationship between self-construal, job satisfaction and organizational commitment among young working adults in Malaysia. Descriptive statistics showed that there were slightly more young working adults who adopt an interdependent self than independent self in this study. Less than ten percent of the young working adults hold both independent and interdependent self-construal.

The way individuals construed their self-influence the way they behave, think and feel. This is because culture or society affects individual's behaviour and cognition through the accessibility of self-construal (Kühnen & Hannover, 2000) where independent self-implied differentiation from others while interdependent self-implied similarity with others. Since the present findings revealed that young working adults not only hold high interdependent self-construal, they also hold high on independent self-construal. According to Singelis (1994), independent and interdependent self can coexist in all cultures and all individuals. In this study, young working adults who adopted both independent and interdependent self can easily distinguish themselves from colleagues and perceived them as comparison reference while utilized collaboration when working with them.

Looking at the relationship between self-construal and work attitudes, young working adults with an interdependent self-have strong identification with the organization. They also have high job satisfaction, strong emotional bonding with the organization and strong involvement in the organization. The same group of respondents too willingly remains in the organization while employed normative commitment. Therefore, the present findings

suggest that young working adults' loyalty to the organization is out of their affective commitment, continuance commitment and normative commitment towards the organization.

In the past, Marcotte (2011) found that participants who showed higher interdependent self were more likely to expect others stayed committed to an organization. In this study, the findings revealed that young working adults who adopt an interdependent self, showed more commitment to the organization that their currently work with. These findings is found in line with Carmona et al. (2005) where Spanish workers who focused more on similarities with others (interdependent self) showed higher organizational commitment level. On the contrary, Dutch workers who focused more on distances with others (independent self) showed lower level of organizational commitment. This means that workers who hold an interdependent self-revealed more loyal and attach to the organization.

Findings of this study also revealed that job satisfaction was significantly correlated with all organizational commitment constructs. In particular, job satisfaction was positively correlated with affective commitment and normative commitment but negatively correlated with continuance commitment. The results of this study partially parallel with the outcomes of Meyer et al. (1993), Lumley et al. (2011) and Rathi (2011) who also found significant positive relationships between job satisfaction with affective commitment and normative commitment, but negative relationship with continuance commitment. However, the present findings found incongruent with few past studies (Kaplan et al., 2012; Iman et al., 2013). In the study of Iman et al. (2013), the researchers found that job satisfaction was significantly positive correlated with all three facets of organizational commitment whereas Kaplan et al. (2012) found no significant relationship between job satisfaction and continuance commitment. Thus, the present findings indicated that young working adults who feel more satisfied with their current job, they also feel more emotionally attached with their respective organizations. Yet, they remain in the organization may due to feelings of obligation and social orientation rather than the costs which associated with leaving the organization.

The level of job satisfaction may change over time. Thus, the generalization of global feelings on job satisfaction is impractical (Khalid, Mat Salim, Loke & Khalid, 2011).Job attitudes would be more positive when there was congruence between employees' values and the organization's value, while less positive when employees' values contrasted with those of the organization (Robert & Wasti, 2002). Hence, it is significant that organizations understand the needs of their employees and provide the best for them. Employees who are highly motivated will showed more affective well-being and hence feel more satisfied with their job and the organizations that they work with. The more committed the employees, the more effort they will exert and be productive in the organization.

Conclusion

Committed employees are the most valuable asset to an organization and they play a significant role in the organization success. Employees who have high level of commitment could help the organization to accomplish its goals. The findings of this study found significant associations between self-construal, job satisfaction and organizational commitment. Therefore, organizational leaders or management should work well with the employees in order to enhance their commitment level. This may help strengthen the development of committed employees with less turnover intention within an organization.

References

Ali, N. (2008). Factors affecting overall job satisfaction and turnover intention. *Journal of Managerial Sciences,* 2(2): 239-252.

Allen, N. J., & Meyer, J. P. (1990). The measurement and antecedents of affective, continuance and normative commitment to the organization. *Journal of Occupational Psychology,* 63: 1-18.

Allen, N. J., & Meyer, J. P. (1996). Affective, continuance and normative commitment to the organization: An examination of construct validity. *Journal of Vocational Behaviour,* 49: 252-276.

Aronson, E., Wilson, T. D., & Akert, R. M. (2007). *Social Psychology,* 6th ed. New Jersey: Pearson Education, Inc.

Asgari, M. H., & Dadashi, M. A. (2011). Determining the relationship between quality of work life (QWL) and organizational commitment of Melli Bank staff in west domain of Mazandaran in 2009-2010. *Australian Journal of Basic and Applied Sciences,* 5(8): 682-687.

Bochner, S. (1994). Cross-cultural differences in the self-concept: A test of Hofstede's Individualism /collectivism distinction. *Journal of Cross-Cultural Psychology,* 25: 273-283.

Carmona, C., Buunk, A. P., Peiró, J. M., & Dijkstra, A. (2005). The influence of culture on the relationship between social comparison and organizational commitment and identification.*Chapter4.*Retrieved from http://dissertations.ub.rug.nl/FILES/ faculties/gmw/2006/c.carmona.rodriguez/04_c4.pdf

Department of Statistics Malaysia. (2014). Population quick info. Retrieved from http://pqi.stats.gov.my/result.php?token=e01e0269f404905f3530f977fc39f9a4

Faragher, E. B., Cass, M., & Cooper, C. L. (2005). The relationship between job satisfaction and health: A meta-analysis. *Occupy Environ Med*, 62:105-112.

Franzoi, S.L. (2006). *Social Psychology,* 4th ed. NY: McGraw-Hill.

Guo, X. H., Schwartz, S. J., & McCabe, B. E. (2008). Aging, gender, and self: Dimensionality and measurement invariance analysis on self-construal. *Self and Identity,* 7(1): 1-24.

Hemdi, M. A., & Abdul Rahim, A. R. (2011). The effect of psychological contract and affective commitment on turnover intentions of hotel managers. *International Journal of Business and Social Science,* 2(23): 76-88.

Iman, A., Raza, A., Tehseen Shah, F., &Raza, H. (2013). Impact of job satisfaction on facet of organizational commitment (affective, continuance and normative commitment): A study of banking sector employees of Pakistan. *World Applied Sciences Journal*, 28(2): 271-277.

Kaplan, M., Ogut, E., Kaplan, A., &Aksay, K. (2012). The relationship between job satisfaction and organizational commitment: The case of hospital employees. *World Journal of Management*, 4(1): 22-29.

Khalid, K., Mat Salim, H., Loke, S. P., & Khalid, K. (2011). Demographic profiling on job satisfaction in Malaysia utility sector. *International Journal of Academic Research,* 3(4): 192-198.

Kühnen, U., & Hannover, B. (2000). Assimilation and contrast in social comparison as a consequence of self construal activation. *European Journal of Social Psychology,* 30: 799-811.

Lin, H. Y., Lin, C. Y., Liang, S. S., & Chung, Y. T. (2006). Can independent and interdependent self-coexist? Comparisons of self-concept between the Hans and the aborigines in Taiwan. Retrieved from http://www.self.ox.ac.uk/Conferences/2006/Lin.pdf

Liou, S. R. (2008). An analysis of the concept of organizational commitment. *Nursing Forum,* 43(3): 116-125.

Lo, M.C., Ramayah, T., & de Run, E.C. (2010). Dimensionality of organizational commitment to change in tertiary education institutions in Malaysia. *Journal of Academic Research in Economics*, 2(3): 311-319.

Lumley, E.J., Coetzee, M., Tladinyane R., &Ferreira, N. (2011). Exploring the job satisfaction and organizational commitment of employees in the information technology environment. *Southern African Business Review*, 15(1): 100-118.

Marcotte, E. (2011). The role of gender and culture socialization on the expectation of organizational commitment. Retrieved from: http://web4.uwindsor.ca/users/c/ckwantes/main.nsf/6d8ffcfd02afe81e8525730600490ed8/84603fbbc1296c7b8525735c00684e5d/$FILE/Marcotte%20Honours%20Thesis.pdf

Markus, H., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotions, and motivation. *Psychological Review*, 98(2): 224-253.

McShane, S. L., & Von Glinow, M. A. (2010). *Organizational Behaviour*, 5th edition, New York: McGraw-Hill.

Meyer, J. P., Allen, N. J., & Smith, C. A. (1993). Commitment to organizations and occupations: Extension and test of a three-component conceptualization. *Journal of Applied Psychology*, 78(4): 538-552.

Mudor, H., & Tooksoon, P. (2011). Conceptual framework on the relationship between human resource management practices, job satisfaction, and turnover. *Journal of Economics and Behavioural Studies*, 2(2): 41-49.

Rathi, N. (2011). Psychological well-being and organizational commitment: Exploration of the relationship. *Working Paper*, 106: 1-19.

Rego, A., & Cunha, M. P. (2009). How individualism-collectivism orientations predict happiness in a collectivist context. *J Happiness Stud*, 10: 19-35.

Riggio, R. E. (2009). *Introduction to Industrial/Organizational Psychology*, 5th ed. Upper Saddle River, NJ: Prentice Hall.

Robert, C., & Wasti, S. A. (2002). Organizational individualism and collectivism: Theoretical development and an empirical test of a measure. *Journal of Management*, 28(4): 544-566.

Singelis, T. M. (1994). The measurement of independent and interdependent self-construal. *Personality and Social Psychology Bulletin*, 20(5): 580-591.

Spector, P. E. (1994). Job Satisfaction Survey, JSS. Retrieved from http://shell.cas.usf.edu/~pspector/scales/jsspag.html

Tan, T. H., & Waheed, A. (2011). Herzberg's motivation-hygiene theory and job satisfaction in the Malaysian retail sector: The mediating effect of love of money. *Asian Academy of Management Journal*, 16(1): 73-94.

The Malaysian Insider. (2014). 70% of employees plan to leave their jobs, says survey. Retrieved from http://www.themalaysianinsider.com/malaysia/article/70-of-employees-plan-to-leave-their-jobs-says-survey

Wang, L., Bishop, J. W., Chen, X., & Dow Scott, K. (2002). Collectivist orientation as a predictor of affective organizational commitment: A study conducted in China. *The International Journal of Organizational Analysis*, 10(3): 226-239.

Impact of Two Teaching Methods on Acquisition of Scientific literacy in a virtual Learning Centre: A Qualitative Approach

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Abstract

This study by qualitative approach investigated the impact of using a designed virtual science centre on acquisition of scientific knowledge and scientific reasoning of students. The paper highlighted the importance of virtual learning centre as an informal learning environment. Students were exposed in two groups to the use of the virtual science learning platform. The two intact groups were selected from two secondary schools of comparable standard and used different methods of learning approach of project based method and free-choice method. The perceptions of the participants were observed. Recorded interviews carried out on the participants revealed that using the free-choice approach student were deeply interested in learning science, had their scientific literacy enhanced with relation to science knowledge , nature of science and scientific reasoning. Conclusion and recommendation were made such an introducing and encouraging the use of virtual science learning centre in a friendly environment especially with free -choice learning opportunities for learners.

Keywords: Virtual science centre, scientific knowledge, science literacy, free-choice

Introduction

A major goal of science education in to improve science literacy among students and science educators are searching for ways of helping students to learn science more effective in an on -going process (Roth 1995) in Turgut (2008).A virtual science centre or classroom is therefore one whose aims and objectives is the extension of a physical science classroom (formal science learning) environment into the digital realm accessible with the use of computer gadget. Although broad in type, form and utility, the concept of a virtual science classroom is universally the same as it is designed and structure with the main aim of improving scientific literacy in terms of acquisition of scientific knowledge, nature of science and scientific reasoning. Through this interactive platform, social media integration and active moderation by the science teacher, a virtual science centre or classroom can be utilized and adopted in various ways to fit favourably into a structured learning experience pattern obtainable in a formal science classroom (Goldman and Dierking 2005). Indeed, the flexibility and diversity of learner situation and approaches using the virtual learner centre has a wide range and relevance to wide array of learners.

The need for advocacy of public understanding of science (science knowledge, its native and reasoning) is rarely contested (Bossard, Lewenstein and Bonney, 2012). According to them informed decision that borders on technological development, well- being of the citizenry ,national issues on health care and energy cannot be made except be made except the citizens are well informed in science. Good scientific literacy levels have been demonstrated to contribute to a country's economic prosperity (Miller, 2000, 2002), being a pre-requisite for

responsible and informed involvement in contemporary social discourses which ranges from various topics such as climate change, mobile phone radiation, and infant powder toxicity. The ability to engage in discourse in these topics requires knowledge of, for example, greenhouse gases, wireless technology, and chemical compounds respectively. Being scientifically literate means being able to follow, argue, and challenge the ongoing arguments and participate meaningfully in dialogue on these hot-topics and in a democratic society, allows for responsible involvement in policy-making decisions on the same.

Through the lens of scientific knowledge and the process of science, individuals can scientifically reason and make decisions that both affect them and society in a way that is credible and responsible. General science knowledge on its own, which is often that which is measured in schools, is often insufficient for competent involvement and decision making in everyday scientific issues. It requires the broader understanding of the nature of science, and ultimately the higher-order ability of scientific reasoning for scientific literacy to be fully expressed (Miller, 2002). National Science Board (2002) in Bossard et al (2012) asserts that in the United State , the general level of understanding of basic scientific concept and of the nature of science inquiry may be insufficient for the average citizen to be able to make informed decision. On this premise, the paper intend to make some effort in promoting informed science learning outside the formal classrooms in a virtual science centre.

The designed virtual science learning environment (MY sains) and its accessibility

Virtual science centres if well designed have the potential to be a tool for increasing levels of scientific literacy through being a platform that provides high reach, with an operational model that is sustainable, and which supports unstructured use such as free-choice learning as well as problem-driven approaches which are classroom-appropriate while still being accessible to many. Asan individual who is scientifically literate likely achieved this due to the pervasive, compounding, and cumulative effect of numerous learning opportunities and experiences both formal and informal, the availability of more easy-to-access learning resources such as a virtual science centre supports and impacts scientific literacy of society overall. A virtual science centre is just one measure among many towards addressing the need for a more scientifically literate populaceUnderstanding the nature of science enables individuals to distinguish between knowledge derived scientifically and therefore with some credibility and dependability, versus knowledge that is untested, unverified, or simply masked as being scientific. Reading modern day nutrition labels for example may require some element of understanding the nature of science for accurate interpretation. Nutritional supplements that claim to be 'scientifically tested' can easily be verified by an individual through reviewing the methodology of the testing study and carefully reviewing what the findings were. A scientifically literate individual will recognize how sound scientific testing is undertaken, whether the testing adopts scientific processes such as empiricism, and whether it is as objective as possible while controlling for any prevailing biases in order to produce valid and credible findings.

The virtual science learning platform called in this study MySains is a dynamic web site in which the learning content is progressively added and updated over time. It is easily accessible using the popular web browser. Doesn't demand much in terms of hardware needs. Users who are able to surf other web sites and run flash content finds Mysains familiar to use with convenient access content of Mysains learning platform covers a broad range of science topics but centre on the three thematic galleries namely. Dynamic Earth (covering largely the earth science)

web of life (covering largely biology) and material Technology (covering largely physics and chemistry). The selection of these themes is purposeful with the aim of narrowing the content scope to knowledge areas that are more contextually relevant to the intended Malaysian users. The riches of Malaysia geography as well as of the tropical rain forest and the prevalence of a consumer culture centered on material and manufacturing are all relevant everyday life science topics embedded. Beyond the general science knowledge, the content also includes exploratory or provoking questions intended for users to recognize and understand the nature of science and scientific reasoning.

All leaning in such an informal learning environment according to Allison-Bunnell and Schaller (2005) can either be unit-modal (only text, image or video) or multimodal (combines of different media types). More importantly, these content types are "native" to the web environment and are designed to be familiar to web users. The contextual relevance of the topic according to Allision-brunell et al (2005) in an effective way to maintain engagement, increase appeal and encourage use of the website for scientific literacy.

Research Methodology

A sample of 72 students drawn from two secondary schools was used for the study. The two intact classes were assigned into two groups with 35 students being in group a using free-choice instructional approach and 37 students in group B with the problem-based instructional approach. The intention was to also compare the effect of using the project learning method and the free- choice method in a visual science centre on students' acquisition of scientific literacy. The study with a facilitator was carried out in eight (8) weeks with interview used as the main way of assessing learners' perception about the use of Mysains with respect to their learning general science.The sample consists of two classroom cohorts, one each for the two approaches in use, with 35 students for the free-choice learning cohort and 37 students for the problem-based learning cohort. The use of the Morrison, Ross, and Kemp instructional design model (Morrison et al., 2010) as well as the consideration of the virtual science centre as a media platform (Eveland, 2003) guides the overall design and development of the MYSains virtual science centre. Within this framework, area-specific considerations are utilised where relevant and appropriate. Firstly, the virtual science Centre is guided by the following questions, originally framed for teachers but applicable still in this context (Jones, 2005):

1. *Does the site try to address the interests of you and your students?*
2. *Is the overall site or sub-site age appropriate for your students?*
3. *Are the topics and/or approaches to those topics of interest to your students?*
4. *Does the site try to serve the needs of you and your students?*
5. *Are there curricular materials made available on the site?*
6. *Are these materials connected to local/state curricula/standards, and etcetera?*
7. *What efforts are there made to help you use the site?*
    - *"Search -ability"*
    - *Variety of menus based on interest groups, topics, and etcetera*
    - *Mailings sent through schools, educational organizations, or center newsletters (virtual or "snail mail")*

From the questions above, it can be seen that the key structural components of the virtual science centre can be categorized as follows:

a. Audience relevance (1, 2, 3, 4)
b. Content clarity (5, 6)
c. Usability (7)

Three additional categories are added to reflect the nature of informal science learning and of the engagement approach of science centres, which are:

d. Free-choice environment
e. Problem-based learning
f. Social constructivism

Secondly, in establishing 'audience relevance', the visual learning centre adopts the following characteristics:

- Predominant use of Bahasa Malaysia.
- Thematic content in 3 areas with identifiable relevance to life in Malaysia.
- Selection of content topics that can be associated with Malaysia mostly directly, sometimes indirectly but still tangibly so.
- Written in casual everyday language.

Alpha Test and Refinement

Alpha testing of MYSains visual learning centre ensured that the system works as designed and was conducted on a closed test server. The focus of the alpha testing stage was on usability, firstly to determine that the virtual science centre works as planned and that all components are integrated and functioning. The Alpha testing for MYSains was performed on the following core usability functions:

- Domain and hosting
- Content management system
- Learning management system
- Social media integration
- General compatibility across key browsers
- Search feature

In the testing process, errors or issues were classified under one of the following categories:

- **Critical**: a system failure which requires changes to the system design before Alpha testing can continue.
- **Major**: a problem which must be fixed before the Beta testing phase.
- **Minor**: a problem which must be fixed before the final release but testing can proceed to the Beta phase.

Results of the Alpha testing phase are shown in Table 1 below:

Table 1: Alpha Testing Results

Item	Core Function	Error	Category	Action
1	Domain and hosting	none	none	None
2	Content management system	- new content is displayed last, not first	Minor	- corrected
		- incorrect title bar text	Minor	- corrected
		- uploaded content appears in wrong categories	Minor	- corrected
3	Learning management system	- standardizing use of terms	Minor	- terms standardized
		- managing format of home page	Minor	- redesigned
4	Social media integration	- link placement not aligned	Minor	- corrected
5	General compatibility across key browsers	- formatting issues in Explorer	Minor	- corrected
6	Search feature	none	none	None

The Alpha test identified minor issues which were promptly addressed and resolved before Beta testing began. Additionally, a minimum of 2 content items were developed for each content area being 'Learning Feature', 'Learning Reference' and 'Quick Update' before the launch of the Beta test.

Beta Test and Refinement

The Beta test was conducted with two subject matter specialist from two leading science centres in the region, who are both managers of the respective science centre's website and learning communications. The Beta testing reviewed the live MYSains site in terms of general use, technical, design, navigation, and security.

The two expert users agreed on the following during the Beta test:

General:

a. The site is generally easy to use.
b. The site is audience appropriate.
c. No difficulties were encountered while using the site.

Technical:

d. The site loaded within a reasonable time.

e. The pages loaded within a reasonable time.

Design:

f. The site design is appropriate for the target audience.

g. The font types and sizes are readable and appropriate.

h. The use of images is relevant and appropriate.

Navigation:

i. Navigational elements are clear and easy to use.

j. It is easy to return to home.

k. No broken links, wrong links, or dead pages were found.

Security:

l. No obvious security flaws are found.

m. The site appears legitimate.

n. There are no concerns with using the site.

- The MYSains Beta test concluded with no errors or issues identified, and with general approvals from the expert reviewers on the usability of the virtual science centre.

Free- Choice Learning Method

The nature of free-choice learning opportunities makes it accessible to learner of various background, competencies and capacities to acquire scientific literacy vis-a-viz knowledge of science, nature of science and scientific reasoning. According to Falk and Diertking (1992), designing and developing free-choice learning components should allow for diversity in learner motivations, interests and competencies and is often dependent on leisure (free time) as the primary motivation for use. In a free-choice learning environment, learners are self-motivated to pursue learning largely for their own benefit and guided by their own interests and relevance to their own lives (Falk & Dierking, 2000; Goldman & Dierking, 2005). This is however often supported by social learning opportunities often with other learners and sometimes with facilitators. A free-choice learning platform such as a virtual science centre can be further described by the following characteristics (Committee on Learning Science in Informal Environments, 2009):

i) Learning is typically experienced episodically, rather than continuously. Access to learning content is sporadic and driven by interests and prompts as there are no mandatory requirements in terms of attendance or a passing grade.

ii) Learners choose freely what learning opportunities they would like to pursue with little or no guidance. Individuals themselves decide what learning content to view and use, in any order they like.

iii) Learners must rely on their own interpretation of signs, labels, images, and other provided information in order to facilitate learning decisions and choices – there are no teachers in the formal sense. Learners are often supported and in the example of a website, learners will have navigational aids such

as a site map, title texts and images to browse through learning content, and facilitation through tools such as social media prompts.

In a free-choice leaning approach within a virtual science centre, visitor (learners) can choose to visit the galleries or topics that interest them so that in a themed area, they can choose what kind of interactive they enjoy, perhaps that of reading a label, watching a show .

For the overall visit, the visitor (leaner) can on his own decide to possibly spend just a few minute the entire day as learning in a free choice environment.

Problem - Based Learning method in a Virtual Science Centre

Problem- based curricula is that which often requires simultaneous change in curriculum, instruction and assessment practices-changes that are often foreign to the students as well as the teachers(Baron,1998) This is why the informal learning environment of a virtual science centre is a thriving ground for project-based learner approach. Just as class field trips in an essential component of an activity- oriented approach that directly release the curriculum and make learning more meaningful and real to students, virtual field trips to various museums and scientific sites can be done via the internet as a problem based learning approach. The content of instruction via the visual science platform is the general science knowledge. Problem-based learning is an inquiry driven approach that typifies social constructivism through its emphasis on learning through interaction and engagement with peers and facilitators, offering opportunities for scaffolding learning within what Vygotsky (1986) describes as the Zone of Proximal Development. Yew and Schmidt (2012) describes the constructivist underpinnings of problem-based learning as follows:

1. Learners are presented with a problem and through discussion within their group, activate their prior knowledge.

2. Within their group, they develop possible theories or hypotheses to explain the problem. Together they identify learning issues to be researched. They construct a shared primary model to explain the problem at hand. Facilitators provide scaffold, which is a frame work on which students can construct knowledge relating to the problem.

3. After the initial team work, students work independently in self- directed study to research the identified issues.

4. The students re-group to discuss their findings and refine their initial explanations based on what they learned.

As is done in any quantitative research, the interview was employed in the study rather than the use of questionnaire. This is in line with the words of Seidman (2013) that the interview bring closer the student teacher relationship for understanding that should not having been if other methods such as questionnaire or observation was used. This is also in line with the view of Cresswell (2012) that in qualitative research, the study in exploratory, meaning that not much has been written about the topic on the population been studied and that the researcher seeks to listen to participants and build an understanding based or what is heard.

Findings and Discussion

Findings showed that all students from both cohorts recorded a significant increase in their general science knowledge, but with no significant change in their understanding of the nature of science and scientific reasoning, although significant gains were recorded in the free-choice learning cohort for scientific reasoning. However, the findings overall, including qualitative inputs, indicate that informal science learning via a virtual science centre can play a role towards improving scientific literacy among Secondary school students. More importantly, positive gains are more evident in a free-choice learning approach which is less resource demanding and more cost effective. This study demonstrates that the provision of well designed and developed virtual science centre as shown in the MYSains model can positively increase scientific literacy overall with strong gains shown in the acquirement of general science knowledge with smaller but significant gains in scientific reasoning.

Student Interviews

At the end of the post-test, a random sample of10 student (5 each from the two groups) was invited for an open-ended interview to share in general their experience in using the MYSains Virtual Science Centre. The interviewer encouraged students to share their experience in using the MYSains Virtual Science Centre, their perception of the learning process, and their likes and dislikes overall. These qualitative feedbacks lend some interesting insights into how the quantitative findings can be interpreted and showcases the personal experience both positive and negative in using the virtual science centre.

Interview responses were studied and the following responses emerge:

Responses

"It was my very first time to do science through the visual learning centre. It's very unfamiliar to me and it is interesting too. We are imagining that we are college or university students."-Tan, M, (Problem –based learning group)

- *"For sure, this will be my first experience using this approach. Using the online system to do the sciences make us more moving towards technology? If it is possible, I hope one day we can use computers and the online systems for learning. Using the online system, it is a good experience for me."- Ayu, F.(Problem –based learning group)*
- *"I enjoyed using this virtual learning centre as its quite interesting chatting with my friends not only in words, but also being able to see each other move around the space as if we were there!"- Lim, F, (Free-choice* learning group)
- *"We can learn sciences other than from our textbook : Biology, Chemistry or Physic book."- Johan, M, (Free-choice learning group)*
- *"Great! Excited! Fun! Enjoyable! I gained more knowledge about our topic when I'm doing the assignment too although with some few challenges in my group."- Tan, M(Problem –based learning group)*
- *"It was nice being able to explore new things that I've always wondered about but which is not taught in school."- Maya, F(Free-choice learning group)*
- *"I think the chat and collaborator sessions was useful."- Lee, F (Problem –based learning group).*
- *"I liked being able to ask the facilitator all sorts of questions! It was comfortable to ask, maybe because it was online, and I also enjoyed seeing the questions my friends asked too." - Maya, F,(Free-choice learning group)*

- *"I enjoying using Mysains visual learning environment. It is quite interesting and as I was able to see and move around the space learning science"-Lim, F (Free-choice group). Moreover further interviews were recorded such as follows:*
- *"It was my very first time to do science through the virtual learning environment. It is very unfamiliar to me and it is interesting two"-Tan, M (Problem-based learning group)*

In general, the students interviewed had largely favourable responses for the MYSains Virtual Science Centre learning experience. They found most of the content easily accessible and presented in a platform that is familiar to them, being primarily driven by a website with interactive features. Although some components of the experience proved to be novel and/or challenging to some, overall, students expressed interest and shown the ability to sustain motivation throughout the study. :

- *"I enjoying using this virtual learning world in Mysains learning environment. It is quite interesting and as I was able to see and move around the space learning science"-Lim,F (Free-choice Group) Moreover further interviews were recorded such as follows:*
- *"It was my very first time to do the science blog through the online system. It's very unfamiliar to me and it is interesting two"-Tan, M (Problem-based learning group)*
- *"For sure this will be my first experience using the online system to do the science blog. Using the online system to do science blog will move us towards technological breakthrough. I do hope one day we can use computers and the online systems to regularly learn science. It in a good experience for me"- Ayu, F (Problem-based learning group).*

Conclusion and Recommendation

The study using a qualitative approach described the importance, design and use of a virtual science learning platform purposively designed to facilitate students' scientific literacy. Interview carried out on the two groups used involves in the study (the free choice and project-based learning groups).Study showed clearly that here was significant gains recorded in the free-choice learning cohort for scientific reasoning than for learners who use problem-based learning method. Although generally, the learners were grossly interested in the use of Mysain visual learning environment and their understanding of scientific knowledge, reasoning and nature of science was significantly enhanced. The study therefore made the following recommendations:

1. Virtual science learning environment such as this which could impact on science literacy should be encouraged in informal learning environment to make learner learn science and technology for interest.
2. Methods of introduction used on the platform were free-choice and project-based method. The study recommends the use of free-choice learning approach in such a learning environment as it enhances significant gain in the acquisition of scientific knowledge and reasoning than the project –based method.

References

Allison-Bunnell, S.; and Schaller D.T. (2005) From the Physical to the Virtual: Bringing Free-Choice Science Education online. In Tan L &Subramanian (Eds).*E- Learning and Virtual science centre*. Information Science Publishing .163-189

Baron, B. J.S (1998). Doing with understanding lessons from Research on Problem and Project Based Learning. *The Journal of Learning Sciences7 (3&4)271-311*

Brossard, D; Lewestein, B and Bonney, R (2012).Scientific knowledge and attitudes change; the impact of a citizen Science Project .*International Journal of ScienceEducation27 (9)1099-1121*

Cresswell, J.W. (2013).*Research Design*. Lincoln. Sage Publications.

Eveland, W. P. J. (2003). A 'Mix of Attributes' Approach to the Study of Media Effects and New Communication Technologies. *Journal of Communication*, 395–410.

Falk, J.H & Dirking (1992).*The Museum Experience.* Left Coast Press.

Falk, J. H., & Dierking, L. D. (2000). *Learning from museums: visitor experiences and the making of meaning*. Rowman & Littlefield.

Goldman, K. H., & Dierking, L. D. (2005). Free-Choice Learning Research and the Virtual Science Center: Establishing a Research Agenda. In L. Tan & R. Subramaniam (Eds.), *E-Learning and Virtual Science Centres* (pp. 28–50). Information Science Publishing.

Lee, O (1999).Science knowledge, world views and information sources in social and cultural context. Making sense after a national Disaster. *American Educational Research Journal36 (2)187-219.*

Miley, J.Y (2008).*The MMS Instructional Design Model: A Delphi Study*. ProQuest.

Morrison, G.R; Ross, S.M; Kemp J.E and Kalman, H. (2010).*Designing Effective instruction* .John Wiley & Sons.

Turgutt, H. (2008).Prospective Science teachers' conceptualizations about Project-Based Learning. *International Journal of Instruction (*1).January

A Comparative Study of Misconceptions of Physics Curriculum among the students of O-Level (University of Cambridge UK) and SSC Level (Pakistani National Curriculum 2006)

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Abstract

The Study was designed to investigate that whether the required objectives of the curriculum are being achieved? And to what extent is classroom teaching preparing the students to meet the requirements and challenges of the 21st century. The objective of the study is to improve the quality of teaching learning process in the subject of physics at secondary level. The population of the study comprised of 16 schools of ICT (Islamabad Capital territory) offering O-level with Cambridge University's curriculum and 34 public schools of ICT, offering Pakistani National curriculum (2006) for their SSC classes. The sample of the study was selected in two stages. During the 1st stage 25% educational institutions were selected as sample of the study through random sampling. A standardized instrument of TIMMS (2008) was used to collect the data. It was content based achievement test. It was recommended teaching method for both the systems. The data was collected in two phases of Pre-test and Post-test. The hypotheses were tested statistically by using ANOVA analysis of variance and t-test through statistical package for social sciences (SPSS). There existed misconnections among the students of both the streams; male students had sounder concepts as compared to female students. Similarly at the pre-test stage although students of both the groups showed misconceptions but O-Level students had less misconception as compared to SSC Students. It is also clear that the concepts of SSC students become sounder at post-test stage after being exposed with student centred inquiry based teaching.

Key Words: Misconceptions, Physics, curriculum, Inquiry based Science Teaching' SSC-class, O-Levels, University of Cambridge UK, Pakistani National Curriculum 2006

Introduction

Education being the third eye of a man remained the very essential part of different civilizations in historical perspectives. Shami (2005) quoted Quaid giving guideline about the future of Pakistan in first educational conference held in November 1947:

> "The future education system should suit the genius of our people. It should be consonant with our culture and history. It should also integrate the highest sense of honour, integrity, responsibility and selfless service to the state. It should also provide scientific and technical education for the socio-economic development of the country."

Secondary Education

An important sub-sector of the entire formal education system is secondary education (ix-x) is an important. On the one hand, it provides middle level workers for the economy and on the other it acts as a feeder for the higher levels of education. The quality of higher education, which is expected to produce high quality professionals in different field of social, economic and political life of the country, depends upon the quality of secondary education. This level of education, therefore, needs to be organized in such a way that it should prepare young men and women for the pursuit of higher education, as well as adjust with their practical lives meaningfully and productively.

It comprises of two categories

i) Lower secondary level (9^{th} -10^{th} ORSSC)

ii) Higher secondary level (11^{th}-12^{th}or HSSC)

The objectives of secondary education should be to provide such general education as to equip the student with basic knowledge in all subjects and skills in some fields to enable them to pursue life at their own.

Significance of Secondary Education

Secondary education is a turning point of a student's life. Secondary education is a stage where a student enters adolescence. This is the most crucial stage of life. The basic perception and modes of behaviour start taking shape and problem of adjustment with the new roles in life assure critical significance. Four years of secondary education, therefore, provide an excellent opportunity for the educationist to conceive and launch programs that initiate the learners into proper forms of behaviour and attitudes, which lead to decent productive and peaceful life in future (Govt. of Pakistan, 1998).

The O-Level (Ordinary Level) System

The ‘‘General Certificate of Education 'Ordinary' Level Examination", otherwise known as the "GCE 'O' Level" or the "O Levels" is the examination taken by students of Secondary Education in the United Kingdom, Commonwealth countries or regions associated with the British curriculum. The "GCE 'O' Level" is a subject-based qualification. The "GCE 'O' Level" functions as to determine the standards of middle-secondary students and usually not required in the entry to college. This usually encompasses students of Grade 8 to 10.

In 1988, O-level qualifications in the UK were replaced by a new system, the General Certificate of Secondary Education (GCSE). However the O level is still used in many Commonwealth countries, such as Bangladesh, Brunei, Malaysia, Malta, Mauritius, Pakistan, Singapore, Sri Lanka, and Trinidad and Tobago. Some British schools also reverted to exams based on the O-levels. In June 2005, 12 million candidates from more than 200 countries registered for O-level examinations across the world. Institutions that offer O-levels are Cambridge International Examinations (CIE), American Council for Higher Education (Shah, 2013).

The SSC Verses O-Level

O-Level is an internationally recognized degree. After passing O level exams students can get admission in any international college or university on the bases of his/her grades. But SSC students have to qualify standardized SAT (I &II) or IELS tests. As SSC is a Pakistani system so it is an easier mode of qualification and certification. O-level requires three years and SSC can be done in only two. However O-Level accesses the students on the bases of

Bloom taxonomy which is internationally acceptable. Although it is also recommended for SSC exams but has not been followed (Haider, 2011).

Science Education

It has been universally acknowledged that the amicable survival of a nation in the 21st century depends largely upon the scientific development as well as upon scientifically literate society (Siddique, 2010).

The field of science education comprises science contents, some sociology and some teaching pedagogy. The standard for science education provides expectations for the development of understanding for students through the entire course of their k-12 education.

The developments of a science curriculum in the US emerged gradually after extended debate between ideologies, citizen science and pre-professional training. As a natural of a conference, 30 leading secondary and college educators in Florida, the National Education Association appointed a committee of ten in 1892 which had authority to organize future meetings and appoint subjects matter committees of the majors subjects taught in US secondary schools. The three conference committees appointed for science were:

1) Physics, astronomy and chemistry;
2) Natural history
3) Geography.

Each committee composed of ten leading specialists from colleges and normal schools and secondary schools (Lakshay, 2013).

Inquiry Based Science Teaching (Physics)

Discovery or inquiry process can be described as methods of teaching and learning with the help of which learners try to find out something which was unknown to them earlier. It refers to a process of self-learning whereby learners generate concepts and ideas with very little teacher intervention. The discovery method or inquiry approach are used to discover new knowledge through experimentation, problem solving or project work (Kingsfiel).

Inquiry is a process of framing questions, gathering information, analyzing it and drawing conclusions. Inquiry develops student's knowledge of the topic of investigation, skills of questioning, hypothesizing, information gathering, critical thinking and presentation. They are also disposed to engage in inquiry, open-mindedness and continuing their learning (Government of Pakistan).

Physics is the base of the physical sciences. It is the study of matter, energy and their interactions. Physics being the science of nature helps the students extremely in discovering the systems of nature especially at HSSC level. Many of the tools, on which the advancement of science and technology depends, are direct product of physics.

In Pakistan Physics is taught as an elective subject at secondary level and higher secondary levels. Physics curriculum is developed under the supervision of Ministry of Education, Government of Pakistan.

Physics Standards and Benchmarks at Secondary School level in Pakistan

The content standard provides the description that of what student should know, understand and able to do in specific content area (Government of Pakistan, 2006). In addition, bench marks in each content area are drafted to further clarify the content standards. They define our expectations for student's knowledge skills and abilities along

a development continuum in each content area. They are meant to define a common denominator to determine how well students are performing (Government of Pakistan, 2006).

Standards for SSC classed in National Curriculum 2006

National Curriculum 2006 has stated our national standards as follows:

1. Students will be able to display a sense of curiosity and wonder about the natural world and demonstrate an increasing awareness that this has led to new developments in science and technology.
2. Students will be able to demonstrate and understanding of the impact of science and technology on society and use science and technology to identify problems and creativity address them in their personal social and professional lives.
3. Students will be able to understand the processes of scientific investigation. They will be able to identify a problem design and conduct experiments and communicate their findings using a variety of conversational and technological tools.
4. Students will be able to describe and explain common properties forms and interactions of energy and matter, their transformations and applications in physics.al system (Government of Pakistan, 2006).

Misconception

The study of students' another conceptions and conceptual frameworks has been an energetic field among science educationalist for more than two decades. It can be described as ideas that offer an inaccurate explanation about any object or event, happenings that are built on a person's direct observation and experience together with such things as predetermined concept, non-scientific faith immature theories, mixed conception or conceptual miss understanding.

There are many sources for the creation of mistaken belief and misconception e.g. students personal incorrect conclusions, parents or other family members perceptions, print or social media and even teacher can also be the source (Vinayan, 2006). Misconception also tends to be very resisting to instructions. Hence, conceptual modification has to occur for learning to happen. This puts teachers in the very challenging position required to bring about important conceptual change in students' knowledge (NY Science Teacher, 2013).

Revolutionary changes and restructuring of in-service and pre service teacher education curricula and class room practices can bring an essential change in teacher's conceptual correction. It can help to remove misconceptions which improve the quality of teacher education in science subjects especially (Malhotra, 2006). Generally concepts of students are categorized in the following three types.

i) Misconception

Barrass (1984) put in writing as inaccuracy in thinking and ideas, errors, misconceptions or confusing thoughts, or misinterpretations of information, which can be eliminated with the help of brighter students and competent teachers.

(Hancock, 1940) quoted the misconception or mistaken belief as ...any groundless idea, or faith that does not represent the factor of horror belief or mystical interference. Hancock considered misconceptions to come up from faulty logics and reasoning.

ii) Pre-conceptions

Thoughts which are expressed as outside class room learning are called pre conceived conceptions (Ausubel, 1968).

Actually these are predetermined beliefs or a conceptual misinterpretation. In this case someone knows and beliefs something logically wrong and incorrect but thinks it as logically correct.

Raja (1998) reported researches of last decade shows that the scientific thinking of many teachers resembled that of children. A number of teachers focused on the properties of substances rather than on systems interacting.

Many people who possess misconceptions but do not even know that their thoughts are fake or wrong. The most important frustrating and alarming fact about the misconceptions is that people keep on constructing their further knowledge on their existing logically incorrect understandings. Keeping this type of misunderstanding and misconceptions can have severe effect on the learning of a student. (NY Science Teacher, 2013)

iii) Naive conceptions

Naive conceptions can be described as pre-conceived idea or an abstract misinterpretation or confusion.

According to Raja (1998) the concepts and ideas or beliefs of students which are different from generally accepted concepts by the scientific community are called misconceptions, or alternate frameworks.

By now, it is well acknowledged that unusual conceptions and ideas or misconceptions are universal among students and that these hinder with successive learning and are challenging hinder for a conceptual change. Defeating misconception is critical to student knowledge and learning. Therefore, a study of student' misconceptions in the subject of Physics has great significance.

Misconceptions in physics

Physics, as a natural science in engineering, is not supposed to be difficult to learn and understand, because its content is easily found in daily life and follows a common logic. However, as our facts suggest, physics has become a subject that is considered difficult, so that the students and their teachers often agree to seek out a compromise to be optimized in the formal education process, that is, how to make an approach that merely allows most students to pass the exams. There have been many educators, particularly those who work with physical sciences and mathematics, finding that we have a challenge known as misconception in our way to understand physical phenomena.

An effective and meaningful physics teaching can only be ensured if the teacher, the key pivot of the change, is developed enough in content, concepts as well as methodology. A teacher who has a sound an in-depth knowledge of the subject and adapting student-centred approach can do the justice to his profession by providing meaningful learning while poor delivery may cause misconceptions, disappointments and disenchantment. It also promotes the rote learning (Government of Pakistan, 2006).

Teacher training/Teacher education may help teachers to become familiar with the variety of strategies for successful delivery of the curriculum. Teacher trainers should focus on training the under-training teachers in following areas.

1. Improved teaching investigation skills/Laboratory work
2. be aware of new innovations and strategies

3. Develop ability to conduct action research

4. Enhance ability to specialize in specific subject

(Government of Pakistan, 2006)

To point out the existence of misconceptions which affect our understanding of the world we are aware that not all information we receive is correct. In this way, misconceptions emerge in our concepts of thinking too. Misconceptions prevent us from knowing the world correctly (Bystrianska, 2013).

Many conventional learning approaches do not provide student an occasion for early recognition of potential problems in their understanding. The inquiry can be an effective means of transportation to allow students to build up their dangerous thinking and problem solving skills as well as deal with their individual misconceptions concerning a certain topic in physic (Hein, 2009).

A study was also conducted in England in which the process of conceptual change and student's undeveloped immature and illogical theories of physics concepts were quoted and described. It was carried out to explain how immature naive thoughts and theories became a characteristic of conceptual change. A survey was conducted and data was collected from 122 science teachers of primary classes in England. That teacher declared almost one third science topics from the primary curriculum as extremely difficult for students. Those topics were especially of abstract concepts i.e. electricity and forces. Teachers also identified 130 pre conceived misconceptions e.g. Stones grow or taller people are older than shorter people etc. which children carry to the science class with them. This realistic data provides the basis to conclude that young students have preconceived naïve and immature theories which became a barrier for their meaning full and logical learning. These also create illusion for science teaching. . (Pine, Messer and John 2010)

Raja (1998) also reported the study of Johnstone, Macdonald and Webb who explored the misconceptions in the area of thermodynamics with 98 higher grade chemistry students. The results indicated 8 major misconceptions among the students.

Awareness and knowledge of student misconceptions can be an extremely helpful tool for science teachers to improve the quality of science teaching. If the teachers have no idea and knowledge of their student's misconceptions then it's nearly impossible for them to bring a conceptual change among their students (Reuell, 2013).

Another study was also conducted by Kambouri (2011) in Cyprus. In which writer exposed the student's misconceptions in the subject of science. He quotes that these types of studies would help in improving science teaching and learning in Cypriot classrooms. He also thinks that more researches are required for the complete understanding and evaluation of the situation regarding teachers understanding and strategies adopted to remove the student's misconceptions in Cyprus. Mazur (1996) quotes that some students in their physics class had rote learnt equations and even numerical problems but they performed poorly during the tests of conceptual understanding because of their conceptual ambiguity. Pakistan has two parallel systems of Education i.e. SSC and O-Level. It has been mentioned in Pakistani national curriculum and O-level curriculum that Inquiry based science teaching is the most appropriate approach for teaching Physics. It not only helpful in transfer of knowledge but also ensures

concept development. The curriculum is structured on the bases of Bloom taxonomy of objectives .This methods demands that teaching methods and assessment procedures should be based on this taxonomy.

It is concluded from above studies that misconceptions exists among the physics and science students. After reviewing the literature it is also been concluded that no previous study has been conducted for the Pakistani National Curriculum 2006. This study may be useful in provision of data regarding the misconceptions in the subject of physics. It may be useful for developing and designing the appropriate class teaching strategies to overcome these misconceptions.

Statement of the Problem

The wide application of physics in different realms of life necessitates studying misconceptions of physics curriculum in Pakistan, thus need is felt to compare the two parallel systems being practiced at O-Levels and Secondary School Certificates (SSC) level. The study was aimed at comparing the misconceptions in the subject of Physics of the two parallel systems of education offered at Secondary Level in Pakistan i.e. O- Level and Secondary School Certificate (SSC).

Objectives

The major objectives of the study were:

i) To study the misconception in the subject of Physics among the students of O-levels
ii) To study the misconception in the subject of Physics among the students of SSC
iii) To identify the misconception in the subject of Physics among the male and female students of both the systems.
iv) To compare the misconception in the subject of Physics among the students of different age groups
v) To compare the misconception in the subject of Physics at O-levels and SSC.
vi) To give recommendations and suggestions for improvements concepts among the students of both the systems

Hypothesis of Study

Following null hypotheses were tested in this study

Ho_1: There is no significant difference between mean score of male and female.

Ho_2: There is no significant difference between mean score of different age group.

Ho_3: There is no significant difference of misconceptions of the concepts in different content areas of physics curriculum, among the students of the two systems.

Ho_4: There is no significant difference between mean score of O-Level students and SSC students at pre-test stage.

Ho_5 There is no significant difference between mean score of O-Level students and SSC students at post-test stage.

Ho_6: There is no significant difference between mean score of O-Level and SSC about the content of Force and Motion.

Ho_7**:** There is no significant difference between mean score of O-Level and SSC regarding the content of Equilibrium.

Ho_8**:** There is no significant difference between mean score of O-Level and SSC for the content of Heat.

Ho_9**:** There is no significant difference between mean score of O-Level and SSC regarding the content of Mass and Weight.

Ho_{10}: There is no significant difference between mean score of O-Level and SSC for the content of Waves.

Ho_{11}**:** There is no significant difference between mean score of O-Level and SSC for the content Lenses and Mirrors

Ho_{12}**:** There is no significant difference between mean score of O-Level and SSC for the content of Centripetal force.

Ho_{13}: There is no significant difference between mean score of O-Level and SSC about the content of Electrostatics.

Ho_{14}**:** There is no significant difference between mean score of O-Level and SSC about the content of Radioactivity.

Ho_{15}**:** There is no significant difference between mean score of O-Level and SSC for the content of Electricity.

Significance

The findings of the study identified the differences and similarities between the systems as well as strengths and weakness of the students of both the systems. The study will be significant for the teachers, educational administrators, educational policy makers, curriculum developers Assessment experts and for future researchers as a springboard to investigate the quality and provision for science education programmes in the subject of physics in Pakistan of 21st Century. The study will also be helpful in improving the quality of teaching learning process in the subject of physics at secondary level. The study will also be helpful for the authorities of BISEs of Pakistan to modify their tests construction process according the international standards. The will also provide significant information to University of Cambridge (UK) to study the local curriculums of the countries where O-Level education is being important.

Delimitations of the Study

Keeping in view the time and financial constraints the study was delimited to the following areas only:

i) Area of ICT only

ii) For the subject of Physics only

iii) Only ten common content areas of National curriculum in the subject of Physics.

Methodology

It was a descriptive type study and survey method was used to collect the data. Pre-test/Post-test research design was used .Data was collected through a standardized content based instruments in two phases i.e. Pre-test and post-test.

Conceptual Framework

The conceptual framework of a study. Arrows indicating to depict connections among various steps and the relationship between different variables.

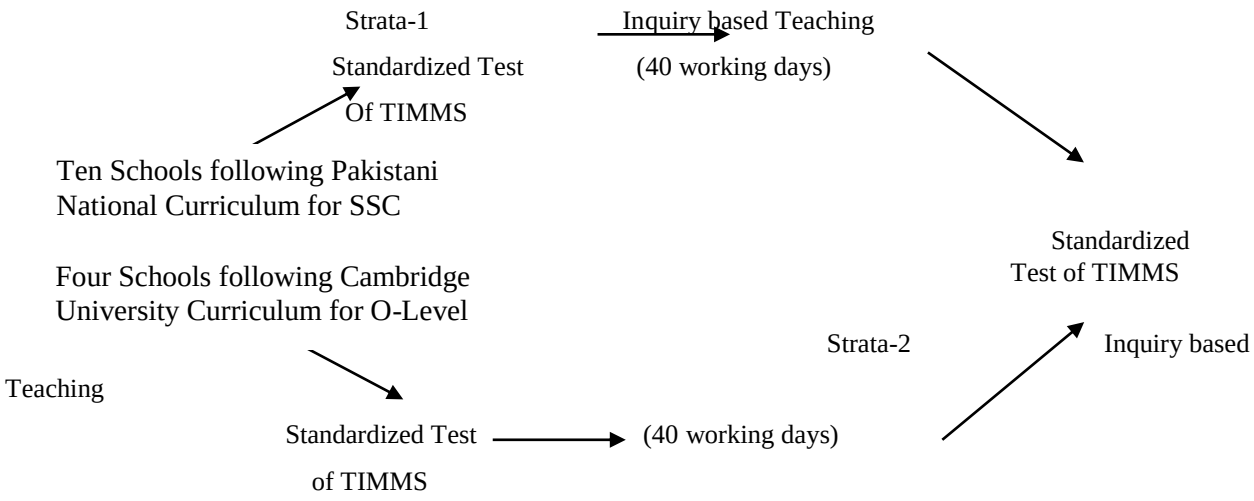

Fig. 1.1

Population

The population of the study was comprised 20 schools of ICT (Islamabad Capital territory) offering O-level and among them 16 schools were following Cambridge University's curriculum. Similarly 34 urban schools of ICT which were offering Pakistani National Curriculum (2007) for their SSC classes. (Annexure-A).

Sample of the Study

The sampling was carried out in two stages:

a) Stage-1

The researcher selected 25% educational institutions as sample of the study through simple random sampling. Two educational institutions for boys and 02 institutions for girls were randomly selected i.e. total 04 institutions were selected for O-Level. Similarly 05 educational institutions for boys and 05 institutions for girls were randomly selected from O-Level and total 10 institutions were selected for SSC. All these institutions were located in Islamabad Capital Territory (ICT).

b) Stage-11

The enrolment of SSC boy's schools was 40-45 students, in each class and 35-40 students in female schools. The enrolment of each O-Level class for boy's schools was 35-40 boys and 30-35 girls. Researcher tried to make the both groups (O-Level and SSC) homogeneous on the bases of pre-test scores. The students getting different marks in pre-test were equally distributed in the SSC and O-Level groups.

It can be described as

Total Sample for O-level =30+30+30+30=120

Total Sample for SSC =30+30+30+30=300

Grand Total =420

Instrument

A Structured content based instrument, consisted of thirty test items was selected. Those 30 test items were selected from TIMMS (2000), which belongs to ten common content areas of both curriculum. For its validation and reliability in local context a pilot study was conducted with 45(25 SSC and 20 O-Level students). The reliability coefficient of study was determined by applying Cronbach alpha reliability method and its calculated value was $\propto$ = 0.811.So on the bases of statistics it is concluded that test is valid and reliable.

Table1: Mean, Standard Deviation and Reliability Coefficient of the Instrument.

Mean	Standard Deviation	Cronbach Alpha Reliability Coefficient
52.81	7.424	0.811

Analysis and Interpretation of the Data

Demographic Comparison

Table 2: Number of SSC and O-Level students appearing in Pre-test and Post-test.

Class	Pre-Test	Post-Test	
	Total	Frequency	Percent
SSC	495	300	61
O-Level	134	120	90
Total	629	420	67

Table 2 indicates that total SSC students appeared pre-test was 495 and after randomization through stratified random sampling the number of SSC students was 300 which was 61% of total SSC students. Similarly 134 SSC students appeared in pre-test and 120 were selected for post-test which was 90% of the total O-Level students.

Table 3: Age of students appearing in Pre-test

Age Groups	Frequency	Percent
Below 15 years	50	100
15 -16years	349	100
Above 16 years	230	100
Total	629	

Table 3 reveals that in pre-test phase of the experiment, out of 629 students the 349 students are aged between 15 years to sixteen years and 230 students are aged more than 16 years and only 50 students are aged less than 15 years. So most of the students are between the ages of 15-16 years.100% students participated in pre-test.

Table 4: Age of students appearing in Post test

Age Groups	Total Students	Frequency	Percent
Below 15 years	50	30	60
15 -16years	349	240	68
Above 16 years	230	150	65
Total	629	420	

Table 4 indicates that in post test phase , out of 420 students the age of 150 students between 15 years to 16 years and 150 students were aged more than 16 years and only 30 students were with the ages of less than 15 years. So most of the students were between the ages of 15-16 years. More than 60% students participated in post-test.

Table: 5: Students appearing in pre-test and post-test by gender

Gender	Pre-Test		Post-Test	
	Frequency	Percent	Frequency	Percent
Male	369	58.7	210	50.0
Female	260	41.3	210	50.0
Total	629	100.0	420	100.0

Table 5 indicates that at pre-test stage there were 629 students (369 males and 260 females) and during post-test there were 420 students (210 males and 210 females).

Pre-Test Comparison

H_{01} = There is no significant difference between pre-test mean score of O-Level and SSC

Table 6: Pre-test Comparison of Means Scores of SSC and O-Level.

Class	N	Mean	SD	t	p-value
O-Level	134	12.36	4.916		
				-2.782	0.000
SSC	495	10.80	5.70		

df= 627

Table 6 reveals that as the p-value is less than .05, which is significant at 0.05level of significance. So the null hypothesis that there is no significant difference between mean score of SSC students and O-Level students is not accepted. It is concluded that O-Level students have less misconception as compared to SSC students.

Post-Test Demographic Comparison

After 40 days teaching of ten common contents with Student Centred Inquiry Based Science Teaching, the same content based test was conducted .Tests were marked and scores were compared. The significance of difference between the mean scores of SSC and O-Level was compared by applying t-test. The summary of results is presented.

H_{02}= There is no significant difference between mean score of male and female Students.

Table 7 Comparison of Mean Score of Male and Female Students

Gender	N	Mean	SD	t	p-value
Male	210	54.01	4.861		
				-2.694	0.001
Female	210	51.62	4.050		

df=418

Table7 indicates that as the p-value is < than .05, which is significant at 0.05level of significance hence the null hypothesis that there is no significant difference between mean score of male and female is not accepted. It is concluded that male students have less misconceptions as compared to female students.

H_{03}= There is no significant difference between mean score of different age groups.

Table 8: ANOVA showing significance of difference between mean scores of age groups (below 15 years, 15-16years and above 16 years of O-Level and SSC on post-test

Source	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	145.260	1	145.260	7.257	.007
Within Groups	8367.052	417	20.017		
Total	8512.312	419			

**Not Significant*

Table 8 shows that value of F is > 0.05 i.e. F= 7.257, which is not significant at 0.05 level of significance. So the null hypothesis that there is no significant difference between mean score of different age groups is accepted. It is concluded that all three age groups perform equally during the post-test.

Comparison of Post-Test Score obtained by SSC and O-Level Students for Different Content Areas

H_{04}= There is no significant difference between mean score of O-Level and SSC about the content of Force.

Table 9: Comparison of Misconceptions for the content of Force and Motion.

Class	N	Mean	SD	t	p-value
SSC	300	5.3833	2.43981		
				-0.497	0.000
O-Level	120	3.9267	1.46804		

df= 418

From Table 9 it is clear that as the p-value is < than .05, which is significant at 0.05 level of significance. So the null hypothesis that there is no significant difference between mean score of O-Level and SSC about the content of Force and Motion is not accepted. It is concluded that SSC students have less misconception as compared to O-Level students regarding the content of force.

H_{05}== There is no significant difference between mean score of O-Level and SSC regarding the content of Equilibrium.

Table 10: Comparison of Misconceptions regarding the content of Equilibrium.

Class	N	Mean	SD	t	p-value
SSC	300	5.4333	1.03353		
				-1.649	0.000
O-Level	120	3.9067	2.20288		

df= 418

Table 10 reveals that as the p-value is < than .05.which is significant at 0.05 level of significance so the null hypothesis that there is no significant difference between mean score of O-Level and SSC regarding the content of equilibrium is rejected. It is concluded that SSC students have less misconceptions as compared to O-Level students about the content of Equilibrium.

H_{06}== There is no significant difference between mean score of O-Level and SSC for the content of Heat.

Table 11: Comparison of Misconceptions about the content of Heat

Class	N	Mean	SD	t	p-value
SSC	300	7.1667	2.05117		
				-.759	0.000
O-Level	120	6.9900	2.19377		

df= 418

Table 11 shows that as the p-value is < than .05, which is significant at 0.05 level of significance so the null hypothesis that there is no significant difference between mean score of O-Level and SSC for the content of Heat, is not accepted. It is concluded that SSC students have less misconceptions as compared to O-Level students for the content of Heat.

H_{07}= There is no significant difference between mean score of O-Level and SSC regarding the content of Mass and Weight.

Table 12: Comparison of Misconceptions regarding the content of Mass and Weight

Class	N	Mean	SD	t	p-value
SSC	300	7.1250	1.38472		
				-1.698	0.000
O-Level	120	6.3400	1.89454		

df= 418

Table 12 indicates that as the p-value is < than .05, which is significant at 0.05 level of significance hence the null hypothesis that there is no significant difference between mean score of O-Level and SSC about the content of Mass and Weight is rejected. It is concluded that SSC students have less misconceptions as compared to O-Level students regarding the content of **Mass** and Weight.

H_{08}= There is no significant difference between mean score of O-Level and SSC for the content of Waves.

Table 13: Comparison of Misconceptions regarding the content of Waves

Class	N	Mean	SD	t	p-value
SSC	300	5.0667	1.38152		
				-1.028	0.25
O-Level	120	6.0667	1.86851		

df= 418

Table 13 indicates that as the p-value is > than .05, which is not significant at 0.05 level of significance so the null hypothesis that there is no significant difference between mean score of O-Level and SSC for the content of Waves is accepted. It is concluded that students O-Level have significantly less misconceptions as compared to SSC students for the content of waves.

H_{09}== There is no significant difference between mean score of O-Level and SSC for the content Lenses and Mirrors.

Table 14: Comparison of Misconceptions for the content of Lenses and Mirrors

Class	N	Mean	SD	t	p-value
SSC	300	5.7167	2.13094		
				-5.254	0.000
O-Level	120	4.7333	1.54602		

df= 418

Table 14 indicates that as the p-value is < than .05, which is significant at 0.05 level of significance so the hypothesis that there is no significant difference between mean score of O-Level and SSC for the content Lenses and Mirrors is rejected. It is concluded that students SSC have less misconceptions as compared to O-Level students about the content flenses and Mirrors.

H_{10}= There is no significant difference between mean score of O-Level and SSC for the content of Centripetal force.

Table 15: Comparison of Misconceptions for the content of Centripetal force

Class	N	Mean	SD	t	p-value
SSC	300	5.4100	1.55670		
				-1.711	0.004
O-Level	120	5.7083	1.75085		

df= 418

Table 15 indicates that as the p-value is < than .05, which is significant at 0.05 level of significance, so the null hypothesis that there is no significant difference between mean score of O-Level and SSC for the content of Centripetal force is not accepted. It is concluded that SSC students have less misconceptions as compared to O-Level students for the content of centripetal force.

H_{011}= There is no significant difference between mean score of O-Level and SSC about the content of Electrostatics.

Table 16: Comparison of Misconceptions regarding the content of Electrostatics.

Class	N	Mean	SD	t	p-value
SSC	300	5.4867	1.57844	-1.396	0.001
O-Level	120	6.1083	1.95666		

df= 418

Table 16 shows that as the p-value is < than .05, which is significant at 0.05 level of significance so the null hypothesis that there is no significant difference between mean score of O-Level and SSC about the content of Electrostatics is not accepted. It is concluded that SSC students have less misconceptions as compared to O-Level students regarding the content of Electrostatics.

H_{012}= There is no significant difference between mean score of O-Level and SSC about the content of Radioactivity.

Table 17: Comparison of Misconceptions regarding the content of Radioactivity.

Class	N	Mean	SD	t	p-value
SSC	300	4.6300	1.38787	-3.681	0.350
O-Level	120	5.2167	1.67625		

df= 418

Table 17 shows that as the p-value is > than .05, which is not significant at 0.05 level of significance so the null hypothesis that there is no significant difference between mean score of O-Level and SSC about the content of Radioactivity is accepted. It is concluded that O-Level students have significantly less misconceptions as compared to SSC students about the content of Radioactivity.

H_{013}= There is no significant difference between mean score of O-Level and SSC for the content of Electricity.

Table 18: Comparison of Misconceptions for the content of Electricity.

Class	N	Mean	SD	t	p-value
SSC	300	4.8800	1.43962	-1.0540	0.000
O-Level	120	5.5750	1.90824		

df= 418

Table 18 indicates that as the p-value is < than .05, which is significant at 0.05 level of significance so the null hypothesis that there is no significant difference between mean score of O-Level and SSC for the content of Electricity is rejected. It is concluded that SSC students have significantly less misconceptions as compared to O-Level students for the content of Electricity.

H_{014}= There is no significant difference between total post-test mean score of O-Level and SSC.

Table 19: Comparison of Total Post-Test Score in all Ten Common Content Areas

Gender	N	Mean	SD	t	p-value
SSC	300	58.14	10.028	0.898	0.000
O - level	120	50.68	6.369		

df= 418

Table 19 indicates that as the p-value is < than 0.05, which is significant at 0.05 level of significance so the null hypothesis that there is no significant difference between total post-test mean score of O-Level and SSC is not accepted. It is concluded that SSC students have significantly less misconceptions as compared to O-Level students for all ten common content areas.

Overall comparison of SSC and O-Level on Post- test Scores

H_{015} = There is no significance difference of misconceptions, between the SSC students and O-Level students.

Table 20: Overall Comparison of misconceptions of SSC and O-Level,

Group	N	Mean	Std. Deviation	t	p-value
SSC	300	53.67	4.507	-129.99	0.000
O-Level	120	11.11	5.587		

df =418

Table 20 indicates that the p-value is < than .05, which is significant at 0.05 level of significance so null hypothesis that there is no significance difference of misconceptions, between the SSC students and O-Level student is rejected. It is concluded SSC students had significantly less misconceptions as O-Level student

Discussion

Pre-test post-test design was used to investigate and compare the misconceptions among the students of both the systems i.e. O-Level and SSC which were equated on the bases of their pre-test scores. Ten common content areas of Physics curriculum were taught, by using Student centred Inquiry Based Science Teaching. After for a period of 40 days a post-test was administered to measure the misconceptions of both groups. The results of the study have been discussed as under;

Objective No.1: To study the misconception in the subject of Physics among the students of O-levels.

During the Pre-Test, the maximum score gained by the students of O-level was 22 out of 60. The marks varied between10 to 20 mostly. Few students scored less than 10 and two even zero. However their low scores do not reflect misconception as the content for which they were tested was new for them. Data also indicates that at pre-test, O-Level students performed better than SSC students. However the average post test scores of O-level students were average i.e. 40-45.

Objective No.2: To study the misconception in the subject of Physics among the students SSC.

At Pre-test stage most SSC students scored less than 10 with a great number scoring below 5. Only a few students scored above 10. The reason for this low score was again that the content was new for them. At Post-Test stage most students of SSC performed excellent. Their average scores were more than 45.Which shows that their misconceptions were reduced.

Objective No.3: To study the misconception in the subject of Physics among the male and female students of both the systems.

At pre-test stage there were 369 males and 260 female students but after randomization on the bases of pre-test scores 210 males and 210 female students were selected. T-test was applied on their post test scores and it is found that as the p-value is < than .05, which is significant at 0.05level of significance so the null hypothesis that there is no significant difference between mean score of male and female is not accepted and it is concluded that male students have less misconceptions as compared to female students.

Objective No.4: To study the misconception in the subject of Physics among the students of different age groups

Three age groups were selected i.e. Below 15 years, 15 -16years, and Above 16 years

In pre-test phase of the experiment, out of 629 students the 349 students are aged between 15 years to sixteen years and 230 students are aged more than 16 years and only 50 students are aged less than 15 years. So most of the students are between the ages of 15-16 years.100% students participated in pre-test. Similarly in post test phase , out of 420 students the age of 150 students between 15 years to 16 years and 150 students were aged more than 16 years and only 30 students were with the ages of less than 15 years. So most of the students were between the ages of 15-16 years. More than 60% students participated in post-test.

ANOVA was applied on post test score. It was concluded that as the value of F = 7.257 is not significant at0.05 level of significance. Therefore the null hypothesis that there is no significant difference between mean score of different age group is accepted. It is concluded that all three age groups perform equally during the post-test.

Objective No.5: To compare the misconception in the subject of Physics at O-levels and SSC.

The ten

1. Force and Motions
2. Equilibrium
3. Heat
4. Mass and Weight
5. Waves and Oscillations
6. Lenses and Mirrors
7. Centripetal Force
8. Electrostatics
9. Radioactivity
10. Electricity

So these areas were compared on the bases of scores obtained from post-test. The significance of difference between the mean scores of O-Level and SSC was found out by applying t-test. The summary of results is as under;

H_{04}: On post-test

As p-value is < than .05, which is significant at 0.05 level of significance and the mean score of O-Level is 4.8323 and SSC is 6.2463. The mean score of SSC students is greater than O-Level. The mean difference is 1.44.So null hypothesis that there is no significant difference between mean score of O-Level and SSC about the content of force is not accepted. It is concluded that SSC students have less misconceptions than O-Level students for the concept of force.

H_{05}: On post-test

As p-value is < than 0.05, which is significant at 0.05 level of significance and the mean score of O-Level is 3.8485 and SSC is 5.7463. The mean of SSC students is greater than O-Level and the mean difference is 1.8978. Therefore the null hypothesis that there is no significant difference between mean score of O-Level and SSC regarding the content of equilibrium is not accepted is not accepted. It is concluded that SSC have less misconceptions than O-Level students for the concept of equilibrium.

H_{06}: On post-test

As p-value is < than 0.05 which is significant at 0.05 level of significance and mean score of O-Level is 6.9851 and SSC is 6.9515,the mean of O-Level students is greater than SSC. The mean difference is 0.0336. Therefore the null hypothesis that that there is no significant difference between mean score of O-Level and SSC for the content of Heat is not accepted. It is concluded that SSC have less misconceptions than O-Level students for the concept of heat.

H_{07}: On post-test

As p-value is < than 0.05 which is significant at 0.05 level of significance and the mean score of O-Level is 6.2545and SSC is 7.4030. The mean of O-Level students is greater than SSC students. The mean difference is 1.1485. Therefore the null hypothesis that there is no significant difference between mean score of O-Level and SSC for the content of Mass and Weight is not accepted. It is concluded that SSC students have less misconceptions as compared to O-Level students for the concept of Mass and Weight.

H_{08}: On post-test

The p-value is > than 0.05 which is not significant at 0.05 level of significance, the mean score of O-Level is 6.3806 and SSC is 5.0566. The mean of O-Level students is greater than SSC. The mean difference is .3997. Therefore the null hypothesis there is no significant difference between mean score of O-Level and SSC for the content of Waves is accepted. It is concluded that O-Level students have less misconceptions as compared to SSC students for the concept of Waves

H_{09}: On post-test

The p-value is < than0.05 which is significant at 0.05 level of significance and the mean score of O-Level is4.7818 and SSC is 5.7167. The mean of SSC students is greater than O-Level. The mean difference is 1.5988. Therefore the null hypothesis that there is no significant difference between mean score of O-Level and SSC for the content Lenses and Mirrors is not accepted. It is concluded that SSC students have less misconceptions as compared to O-Level students for the concept of lenses and mirrors.

H_{010}: On post-test

As p-value is < than 0.05 which is significant at 0.05 level of significance, the mean score of O-Level is 4.7818 and SSC is 6.3806. The mean of SSC students is greater than O-Level. The mean difference is 1.5988. Therefore the null hypothesis that there is no significant difference between mean score of O-Level and SSC for the content of Centripetal force is not accepted. It is concluded that SSC students have less misconceptions as compared to O-Level students for the concept of centripetal force.

H_{011}: On post-test

As p-value is < than 0.05 which is significant at 0.05 level of significance, the mean score of O-Level is 5.5414 and SSC is 6.3582 .The mean of O-Level students is greater than SSC. The mean difference is 0.8168. Therefore the null hypothesis that there is no significant difference between mean score of O-Level and SSC about the content of Electrostatics is not accepted. It is concluded that SSC students have less misconceptions as compared to O-Level students for the concept of electrostatics.

H_{12}: On post-test

The p-value is > than 0.05 which is not significant at 0.05 level of significance, the mean score of O-Level students is 5.4030 and SSC 4.6667. The mean of O-Level students is greater than SSC. The mean difference is 0.7363. Therefore the null hypothesis that there is no significant difference between mean score of O-Level and SSC about the content of Radioactivity is accepted. It is concluded that O-Level students have less misconception as compared to SSC students for the concept of radioactivity.

H_{013}: On post-test

As p-value is < than 0.05 which is significant at 0.05 level of significance, the mean score of O-Level is 4.9455 and SSC students is 5.7537. The mean of SSC students is greater than O-Level. The mean difference is 0.8082. Therefore the null hypothesis that there is no significant difference between mean score of O-Level and SSC for the content of Electricity is not accepted. It is concluded that SSC students have significantly less misconceptions as compared to O-Level students for the concept of Electricity.

H_{14}: On post-test

The mean score of O-Level students and SSC students is significant at 0.05level of significance which is significant at0.05 level of significance; the mean of SSC Students is greater than O-Level students. The p-value is< than 0.05,so the null hypothesis there is no significant difference between total post-test mean score of O-Level and SSC is not accepted and it is concluded that SSC students is not accepted. It is concluded that SSC has less misconceptions as compared to O- Level.

Findings

Analysis of the data revealed the following findings.

1. Data indicates that total SSC students appeared pre-test was 495 and after randomization through stratified random sampling the number of SSC students was 300 which were 61% of total SSC students. Similarly 134 SSC students appeared in pre-test and 120 were selected for post-test which was 90% of the total O-Level students. (Table 2).
2. It is inferred from the data that in both pre-test and post-test stages a large majority of the students were in between 15-16 years age group (Table 3).
3. It is also clear that at pre-test stage there were 629 students (59%males and 41% females) but during post-test there were 420 students i.e. 210 males and 210 females i.e. 50% each (Table 4 & 5).
4. Data shows that at pre-test stage as the p-value is less than .05, which is significant at 0.05 level of significance. So the null hypothesis that there is no significant difference between mean score of SSC students and O-Level students was not accepted. It implies that O-Level students have less misconception as compared to SSC students at pre-test stage (Table 6).
5. At post-test stage data indicates that as the p-value is < than .05, which is significant at 0.05level of significance so the null hypothesis that there is no significant difference between mean score of male and female is not accepted. It is concluded that male students have less misconceptions as compared to female students (Table 7).
6. It is also visible that the as value of F is > 0.05 i.e. F= 7.257, which is not significant at 0.05 level of significance. Therefore null hypothesis, that there is no significant difference between mean score of different age group is accepted. So all three age groups perform equally during the post-test (Table 8).
7. For the content of force it is clear that as the p-value is < than .05, which is significant at 0.05 level of significance. So the null hypothesis that there is no significant difference between mean score of O-Level and SSC about the content of Force is not accepted. It implies that SSC students have less misconception as compared to O-Level students regarding the content of force and Motion (Table 9).

8. Data of the content of equilibrium shows that the p-value is < than .05. This is significant at0.05 level of significance so the null hypothesis that there is no significant difference between mean score of O-Level and SSC regarding the content of equilibrium is not accepted and it implies that SSC students have less misconception as compared to O-Level students (Table 10).
9. For the content of heat data shows that as the p-value is < than .05, Which is significant at 0.05 level of significance so the null hypothesis that there is no significant difference between mean score of O-Level and SSC for the content of Heat, is not accepted. It is concluded that SSC students have less misconceptions as compared to O-Level students (Table 11).
10. It can be concluded that the content of Mass and Weight as the p-value is < than .05, which is significant at 0.05 level of significance so the null hypothesis that there is no significant difference between mean score of O-Level and SSC about the content of Mass and Weight is rejected. It implies that SSC students have less misconception as compared to O-Level students (Table 12).
11. Data about the concepts of waves indicates that as the p-value is > than .05, which is not significant at 0.05 level of significance so the null hypothesis that there is no significant difference between mean score of O-Level and SSC for the content of Waves is accepted. It is implies that students O-Level have significantly less misconceptions as compared to SSC students (Table 13).
12. It is also clear that for the concepts of the content of lenses and Mirrors data indicates that the p-value is < than .05, which is significant at 0.05 level of significance so the null hypothesis that There is no significant difference between mean score of O-Level and SSC for the content Lenses and Mirrors is not accepted. It is concluded that students SSC have less misconceptions as compared to O-Level students (14).
13. For the content of centripetal force it is clear that the p-value is < than .05, which is significant at 0.05 level of significance, so the null hypothesis that there is no significant difference between mean score of O-Level and SSC for the content of Centripetal force is not accepted and it implies that SSC students have less misconceptions as compared to O-Level students (Table 15).
14. The data of the concepts of electrostatics shows that the p-value is < than .05, which is significant at 0.05 level of significance so the null hypothesis that there is no significant difference between mean score of O-Level and SSC about the content of Electrostatics is not accepted. It implies that SSC students have less misconception as compared to O-Level students (Table 16).
15. Data of the content of Radioactivity shows that the p-value is > than .05, which is not significant at 0.05 level of significance so our null hypothesis that there is no significant difference between mean score of O-Level and SSC about the content of Radioactivity is accepted and it is concluded that O-Level students have less misconceptions as compared to SSC students (Table 17).
16. About the concepts of electricity data indicates that the p-value is < than .05, which is significant at 0.05 level of significance so the null hypothesis that there is no significant difference between mean score of O-Level and SSC for the content of Electricity is not accepted and it implies that SSC students have less misconceptions as compared to O-Level students (Table 18).

17. Data for all ten common content areas also indicates that the p-value is < than 0.05, which is significant at 0.05 level of significance so the null hypothesis that there is no significant difference between total post-test mean score of O-Level and SSC is rejected. It is concluded that SSC students have less misconceptions as compared to O-Level students (Table 19).
18. The overall comparison indicates that the mean score of control O-Level and SSC indicates that the p-value is < than .05, which is significant at 0.05 level of significance so the null hypothesis that there is no significance difference of misconceptions, between the SSC students and O-Level student is not accepted .It is concluded SSC students had significantly less misconceptions as O-Level students (Table 20).

Conclusions

Following conclusions were drawn on the basis of statistical analysis and the findings of the study:

1. Misconceptions exist among the students of both the groups i.e. O-Level and SSC.
2. All three age groups performed almost equally during the post-test but male students had significantly less misconceptions as compared to female students.
3. The results revealed that the concepts of "Forces and Motions", "Heat "and **"**Mass and Weight of SSC students were better than O-Level students while students of O-Level had better understanding about the content of **"**Equilibrium" as compared to SSC students.
4. It is also concluded from the results that SSC students had less misconceptions in the chapters of "Lenses and Mirrors", "Electrostatics" and "Centripetal Force" as compared to O-Level students while about the "Radioactivity" and "Waves and Oscillations" chapters, O-Level students had less misconceptions as compared to SSC students.
5. The comparison of post test scores indicated that overall SSC students had better understanding or less misconception as compared to O-Level students.

Recommendations

1. As misconceptions exist among the students of both the groups i.e. O-Level and SSC. But after treatment by applying students centred and inquiry based teaching in physics to both groups, post test scores indicated that SSC students showed better understanding in the concept as compared to O-Level students. The results also revealed that if appropriate teaching methods are applied then leaning improves. It is proposed that continuous in-service teacher training programmes may be introduced to develop the capacity of physics teachers in pedagogy. The authorities of education and teacher training institutions may design and develop teacher training courses in collaboration with international donor agencies or internationally reputed institutions of Pakistan.
2. After post-test, it was concluded that among the ten common contents of both the curriculum, only the concepts of the students of both the systems increased and only the concepts of two contents i.e. "Radioactivity" and "Waves & Oscillations" SSC students had less misconceptions as compared to O-Level students. So teacher should be skilled enough in content, concepts and methodology because poor delivery may cause misconceptions among the students which also promote rote learning. Teacher training institutes may update their curriculum according to the new curriculum being implemented in the secondary schools. The capacity of teacher trainers may also be developed to equip them with new techniques of science teaching to

develop future teachers according to the future needs in science teaching. The emphasis may be given to investigation skills/Laboratory work, new innovative techniques and strategies, action research and specialization in content area.

3. The Policy makers, Curriculum Development authorities, Boards of Intermediate and Secondary Education, Educational Assessment Systems/ centres and Teacher Training Institutes may be aligned to improve in teaching and learning process in the country.
4. Misconceptions of the students of secondary level may be checked regularly through standardized achievement tests to evaluate the SSC physics student's mastery of concepts. Test items banks may be prepared by all the boards of Intermediate and secondary educations on the basis of test item development principles. The mechanism of O level assessment may be adopted by student assessment agencies in the country.
5. A future study may also be designed to study and compare the misconceptions of other science subjects at SSC and HSSC levels with that of A-Level.

References

Aufschnaiter, C. and Christian, R. (2010). *Misconceptions or Missing Conceptions.* Giessen: Justus Liebig University Giessen, Germany

Ayesha (2010), *A Comparative Study of Misconception in the Subject of Mathematics Among the Students of O-level and matriculation in Islamabad schools,* Islamabad: Federal College of Education on 07-082013.

Bhatia, P. (1983), *Principles and Practical's of Education,* Shiba Printing Press, India.

Cambridge IGCSE Physics (2006), Harper Collins Publisher, London

Cambridge O Level Physics Curriculum code 5054 For examination in June and November 2013, University of Cambridge, 2011, London.

Chaudhri, A. G. (1982*), Some Aspects of Islamic Education,* Lahore: Universal books.

Cristian, R. (2005), *General Students Misconceptions Related to Electricity and Magnetism,* Physics Department the Ohio State University.

Cristian R. (2005). General Students Misconceptions Related to Electricity and Magnetism, Physics Department. The Ohio State University.

Farooq, R.A. (1994), *Education system in Pakistan, Islamabad;* Asia society for the promotion of innovation and reform in Education. pg# 0-10

Gay, L.R. (2012), *Educational Research,5th Edition.* Islamabad: National Book Foundation.

Govt. of Pakistan (2006), *National Curriculum for General Science Grade 1V-V111,* Islamabad.

Govt. of Pakistan (2006). *National Curriculum for General Science Grades 1X-X,* Islamabad. A Comparison of Traditional Method and Computer Assisted Instruction on Students Achievement in General Science.

Govt. of Pakistan. (1994*), Physics curriculum for class (IX-X),* published by National Breury of Curriculum and Text Books, Islamabad: Ministry of Education.

Ken, H. (2012), *Teaching and Researching, Dorling Kindersley* (India) Pvt, New Dehli 110017, India

Khan, A. (1984), *Development Education,* Islamabad, Allama Iqbal Open University.

Martin, R., Sexton, C. and Gerlovich, J. (2002), *Teaching Science for all Children: Methods for Constructing Understanding*. Boston: Allyn and Bacon.

Pathak, R.P. (2011). *Research Methods in Education and Psychology.* New Dehli: Dorling Kindersley (India) Pvt Ltd, 110017

Poham, W. James (1975). *Educational Evaluation* New Jersey: Prentice-Hall, INC.

Ranjit, K. (2005). *Research Methodology.* New Dehli: Dorling Kindersley (India) Pvt Ltd, 110017

Rao, V. R. (2003). *Science Education.* New Dehli: APAAH Publishing Corporation, 110002

Sabir, H. (1998), *Study guide of secondary education,* A.I.O.U, Islamabad.

Shami, P. A. (2005), *Education In Pakistan, Policies and Policy Formation.* http://prr.hec.gov.pk/Chapters/40-1.pdf retrieved on 23rd December at 9:00 pm http://www.aku.edu/ismc/ismc-courses.shtml retrieved on 17th September 2010, 5:23PM

Teresa L. H. (2009), *Using Writing to Confront Student Misconceptions in Physics,*Washington, DC 20016-8058.

Thyme, M. J. (1974). *Principles of Examining* London: University Press.

TIMMS Test Items (2000). *Department of Science Education,* National Institute of Science Education University of Philippines, Quezon City

Vinayak, M. (2006). *Methods of Teaching Physics.* Crescent Publishing Corporation, New Hehli-110002.

Websites/Online Journals

Prof. Dr. Munir Ahmad, The Fifty Years of University and Pre-University Teaching of Statistics in Pakistan, http://isi.cbs.nl/iamamember/CD2/pdf/953.PDF, 2001

Bill Mulford, School Leaders: Changing Roles and Impact on Teacher and School, April 2003 Effectiveness, 2003, Tasmania

Tahir Kaleem Siddiqui, A Study of Teacher Competencies and Teaching Practices for School Effectiveness in Workers Welfare Model Schools, Rawalpindi, 2010

Ismo Koponen And Maija Nousiainen, Pre-Service Physics Teachers' Understanding Of The Relational Structure Of Physics Concepts: Organising Subject Contents For Purposes Of Teaching International Journal of Science and Mathematics Education, April 2013, Volume 11, Issue 2, pp 325-357, Springer Netherlands, 2013

Koponen, & Maija ,Source:http://www-db.in.tum.de/teaching/ws1112/hsufg/ Taxila/Site/education. Html retrieved on 07-08-2013 at 3pm)

Colin Tudge, 2008, The Omniscience and Omnipotence of Science, (Italy) http://edge.org/responses/what-have-you-changed-your-mind-about-why

Margrete (2000) http://www.ed.gov/databases/ERIC Retrieved on 08-07-2013 at 9pm (Ausubel,1968)(.http://newyorkscienceteacher.com/sci/pages/miscon/index.php Retrieved on 12-1202011 at 9:00 PM)

Cameron McCarthy, Goli Rezai-Rashti & Cathryn Teasley, 2009, http://www.eric.ed.gov/ ERICWebPortal/, Retrieved on 23-01-2013 at 9:00 PM)

Ryan Brown ,The British Empire In India,2010,Ashbrook Statesmanship Thesis Recipient of the 2010 Charles E. Parton Award, Nordestedt Germany

Dawood Shah, Decentralization in the Education System of Pakistan, Policies and Strategies,2003,Academy of Educational Planning and Management, Ministry of Education(Devolved), Government of Pakistan, Islamabad.

Shamaas Gul Khattak, Assessment in schools in Pakistan,SA-eDUC JOURNAL Volume 9, Number 2 ,September 2012,(London)

Manuel Castells, (2004), The Network Society,A Cross-cultural Perspective, Los Angeles, Manuel Castells

Kingsfiel,,nd, www.macalester.edu/academics/geology/wirth/**learning**. Retrieved on 12-10-2013 at 10:00 PM

Robert Sontheimer,2007, http://en.wikipedia.org/ wiki/ History_of_physics retrieved on 0-08-2013 at 5 am)

Richard P. Feynman – 2009, Lectures on Physics, Dorlin Kinderslay India (Pvt)

Cooperative Learning: Another Avenue for Teachers to Enhance Students' Academic Achievement at School Level

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Abstract

Cooperative learning is an emerging trend around the globe. Educationist and teaching community are accepting its importance as compare to other traditional methods of teaching. In this study the researcher tried to explore the effects of cooperative teaching method on students' achievement in the subject of General Science. It was an experimental study, where two groups; the control group and the experimental group were formed. The objective of the study is to find the effectiveness of the cooperative teaching method on students' achievement both on short question and multiple choice type questions. The sample size of the study was 54 pupils which were involved in experimental and control group. Experimental group consist of 29 pupils and controlled group consist of 25 pupils. Control group was treated by traditional method while experimental group treated by cooperative learning. Jigsaw strategy as an instructional tool was used and teacher made test as a measuring tool were used. After the treatment a post-test has been applied on both groups. T-test was applied to investigate the effectiveness of cooperative learning scores between the groups at 0.05 levels. Results indicate that experimental group students taught by Jigsaw strategy have a better result from the controlled group students which treated by traditional method.

Keywords: *Cooperative learning, Jigsaw Strategy II, Teaching method, Students' achievement*

Introduction

Teaching is a fundamental element of education and it is well known fact that learning mainly depend on instruction. So we can say that there exists a cohesive relationship between teaching and learning. In the process of education a senior member of the society transmits knowledge and culture to young ones. But due to gradual and continuous practice teaching becomes ritualized and only a limited amount of information is transfer to the learner and students memorized classified information just for marks or degree that help them in acquiring a job. For the transmission of knowledge a teacher may use single or combination of method which is called teaching method and according to Salawu (1999), "Teaching method is a vehicle which helps in transferring the message from one person to another or it is similar to pouring the information form one mind to another." The basic purpose of the education is diverted due to many factors for example one of the factor is the large classes where a teacher has to control an average of 80 students during a period of 30 to 35 minutes and second teachers have obligation to be the part of various provincial or the national activities like census, compulsory education program, election activities etc. Therefore, a teacher invest relatively limited times among their students and this is the cause of lack of interest in teaching learning process and the aspect of individual differences is totally ignored. Basic objective of education is to train the student how they can learn and to find new ways of learning. So in this context a fresh approach about

teaching a large class is required and that is called cooperative learning. Cooperative learning consists of a group of 4 or 5 students group as a team for the accomplishment of their goal.

AT different level, there are various subjects that are general in nature but certain areas of learning for example general science at elementary level is important and conceptual discipline; therefore students feel difficulty to understand it by traditional teaching method and students cannot ask question due to hesitation. Moreover, students have limited time to cover the syllabus. In Pakistan, teachers have to teach seventy to eighty pupils in class which learn together. Mostly students are taught by direct and lecture method. Due to large classes sometimes students are not able to understand what teacher wants to clarify and they don't ask questions due to shyness or over crowdedness in classrooms. Traditional teaching method may prove useful for high achiever but not true for low achiever. So there is ample need for such a teaching method which is helpful for whole the class i.e. for high as well as for low achiever and cooperation should be held between students and teachers. So Cooperative learning is best in such a situation because cooperation will be established between the students and teachers; and it becomes easy for the teachers to give attention to all students in the forms of groups. Students give their ideas in cooperative learning.

Although traditional teaching method is in used every in most part of the world but in spite of popularity it remains under criticism for example Jhonson and Jhonson agreed (1998), "Traditional teaching method has been used by some teachers in which group members work together but have lack of interest in group work. The fixed teaching style creates competition, while students in cooperative learning style work together for the accomplishment of their task, in such a way that all students take advantage from shared experience." On the other hand, cooperative learning is best for those activities which are not possible in Traditional Teaching like games, creativity, brains storming etc. In cooperative learning, members of small group work together to accomplish their shared task, while in traditional method students remains in competitive mood. Skills are developed in cooperative learning and this sense is often over looked in traditional method. In cooperative learning students depend on their group members because individual success is linked with group achievement. Equally chances are provided to each student for success in cooperative learning, while there is no interdependence in traditional method.

Objectives and Hypothesis of the study

This is an experimental study and having two groups; one is the controlled group and the other is the experimental group. The study has two major objectives; the first objective is to evaluate the effects of cooperative learning on the students' achievement in general science in our culture and second objective of this study is to investigate the effectiveness of cooperative learning as compare to other method of teaching.

In order to enhance the study, researcher has decided to test the following hypothesis:

Ho: Cooperative learning has no significant effect on students' achievement as compare to traditional method.

H1: Cooperative learning has no significant effect on students' achievement both in short questions and multiple choice questions.

Back Ground of the Study

Learning is the permanent change in behaviour which occurs through repeated practice. We daily learn many things in our lives but sometimes we need the cooperation to sort out the solution of the problem. According to Aristotle, "Man cannot live without society." When we established cooperation to find out the solution of the

problem, we share our experience with others which helps in finding the solution and the accomplishment of the task, that process is termed as cooperative learning method. Cooperative learning is the small group of pupils working together to solve or accomplishment of their task (Artz & Newman, 1990, p 448). If cooperative learning is organized well then each individual can perform their duty accurately. They will not only achieve their goal but learning will also become joyful for them. According to Salvin (1996), "Cooperative learning is established when students are supposed to be helped with each other and want to find the solution of the problem by themselves."

Salvin (1990), investigated cooperative learning on 68 studies and found that about 72% of the respondents were in favour of cooperative learning while 12% like the traditional method. Ozsoy and Yildiz (2004) studied the effect of cooperative learning method on students' achievement. They concluded that technique of learning together is better than traditional method because students are engaged in learning and share their ideas with peers while this sense is ignored in traditional method. This researcher is also agreed with because learning together technique promotes relationship and rapport between teachers and students. Cooperative learning is helpful for average and slow learner because sometimes students are unable to understand the things from their teacher and later they seek help from their peers, while in traditional method slow learner cannot ask question due to hesitation. Chaisnson, Kurumch and Obida (2011), investigate the effect of cooperative learning technique on students' retention in circle geometry. For this purpose treatment remained continuously for five weeks. After treatment, the post-GAT (Geometry Achievement Test) was taken after four weeks to check which teaching style have an impact on students retention. At the end, results indicate a huge difference between cooperative learning and conventional method.

Cooperative learning method was better than that of traditional method. David, Francis and Hallmark (1995), observed that cooperative learning method suits to both gifted and non-gifted students because in cooperative learning teacher pays full attention on students while in traditional method teacher are unable to concentrate on whole students. In traditional method slow learner moves slowly with the class and feel hesitation in telling someone about their learning conditions, while in cooperative learning peers help one another because no one can enjoy success unless the whole group is succeeded. Jhonson, R. Jhonson and Stanne (2000), explain the importance of cooperative learning method, and he provided a Meta-analysis. According to them there are various types of cooperative learning and this method is better than the individualistic learning method because cooperative learning provides the consistency of the results of students. So, the researcher aimed in this study is to evaluate the effects of cooperative learning on students' achievement in our culture and perspective. Iyer, (2013), explain that there is the strong relationship between cooperative learning and student achievement. Cooperative learning usually promotes and enhances the student achievement.

Research Methodology

In this paper the researcher divided the students into two groups; control group and the experimental group. Control group was treated by traditional method while experimental group was treated by cooperative learning. The subject of general science was chosen because there are various concepts form physics; chemistry and biology are gathered in this subject. Moreover students of fifth class were selected as a sample. A pre and post test was conducted and through pre-test slow learner, average learner and high learner were identified. Jigsaw strategy was used as an instructional tool and a teacher made test serve the purpose of measuring tool. After the treatment a post-

test has been applied on both groups. T-test was applied to investigate the effectiveness of cooperative learning scores between the groups at 0.05 levels. The total number of students and their composition in the two groups is mentioned in the table given below.

Sample of the Study

Table A. Detail of Participants in experimental and control group

Groups	No of students
Experimental group	
Slow learner + high learner + average learner	8+8+13= 29
Control group	
Slow learner + high learner + average learner	6+6+13= 25

Purposive sampling technique was considered best for the situation where researcher need to researcher targeted sample quickly and where proportionality for sampling is not main concern. The sample consist of 54 students in which 15 female and 39 male of 5thclasses out of which 29 students were in experimental group and treated through cooperative learning method and 25 students were in controlled group and instructed through traditional method. They were 9 to 10 year old children. Experimental group have eight teams, in which five teams consisted of four members and three teams consisted of three members and one high achiever is select as team leader in each teams. Experimental group have eight high achievers, eight were low achiever and thirteen were average students. Traditional group consist of 25 students in which six students were high achiever, six students were low achiever and thirteen were average. Same teaching materials were provided to both groups. The daily period of the study was consisting of 40 minutes.

Instrument Tools

Jigsaw strategy as an instructional tool and teacher made test as a measuring tool were used. Post-test was administered by the researcher after fifteen days of treatment. The post-test have 25 marks and consisted of 2 types of items i.e. multiple choice and short question. The multiple choice paper was consisting of 15 items and each question has one mark each and short question was consisting of 5 items and each short question has 2 marks. As far as the validity of the test is concerned, it was first judged by experts of Education Faculty, Educational training Department, The Islamia University of Bahawalpur. About 50% items fulfil the criteria of validity by the experts. More over necessary changes were made keeping in view the suggestion of the experts.

Data Collection Procedure

The treatment was operated in a private school called Al-Falah located within territory of Multan. The students were of fifth grade. The two sections of the fifth class (A & B) were mixed up before the start of the treatment, and then randomly select to make both groups equally with all aspects. Before the start of experiment, a brief guidance was given on cooperative learning process. Later experimental group was divided into subgroup with a leader. The experimental group was treated by Jigsaw Strategy II and control group was treated by traditional methods of teachings. After the treatment, the post test was administrated on both groups.

Result Discussion

The findings of post-test have been presented in following tables.

Table No 1: The comparison between Mean Grades of both groups with concern to Post-test.

GROUP	No of students	Mean	St. dev	t-value calculated value	Table Value at .05
Experimental	29	15.06	4.14	2.84	1.671
Control	25	11.61	4.9		

Table no 1 indicates the result of two groups. The experimental group has 29 students which were taught and trained by cooperative learning technique and 25 students were in controlled group and they were taught by traditional techniques. This table indicates that mean value of control group have 11.61while experimental group have 15.06 mean value on post-test and the result is in favour of cooperative learning. Standard deviation of the experimental group is 4.14 and 4.9 of the control group, which is high from experimental group and shows that experimental group has minimum variance which is good. The table shows that there was a significant difference between means at 0.05 levels which is in favour of experimental group. The significant value shows that cooperative learning is better from the traditional method. Hence the Null hypothesis Ho, cooperative learning has no significant effect on students' achievement as compare to traditional method was rejected.

Table No2: The comparison between two groups with concern to short question on Post-test

GROUP	N	M	SD	t-value calculated value	Table Value at .05
EXPERIMENTAL	29	5.1	1.95	2.74	1.671
CONTROL	25	3.53	2.3		

The table-2 indicates the mean value of control group is 3.53 and mean value for experimental group is 5.1. This score represent the result of short question of post-test which is in favour of cooperative learning. Standard deviation of the experimental group is 1.95 and 2.3 of the control group which is high from experimental group and shows that experimental group has minimum variance which is good. The table shows that there was a significant difference between means at 0.05 levels which is in favour of experimental group. The significant value shows that cooperative learning is better from the traditional method. Hence the Null hypothesis Ho, cooperative learning has no significant effect on students' achievement as compare to traditional method on short question of general science was rejected.

Table No3: The comparison between two groups with concern to MCQ'S on Post-test.

GROUP	N	M	SD	t-value calculated value	Table Value at .05
EXPERIMENTAL	29	9.96	2.45	2.6	1.671
CONTROL	25	8.15	2.73		

The table-3 indicates that mean value of control group is 8.15 while experimental group have mean value of 9.96 in short question of post-test which favours the cooperative learning. Standard deviation of the experimental group is 2.45 and for control group is 2.73 respectively which is high from experimental group and shows that experimental group has minimum variance which support the experimental group. The table-3 shows that there was a significant difference between means value at 0.05 levels which favours the experimental group. The significant value shows that cooperative learning is better from the traditional method. Hence, the Null hypothesis Ho, cooperative learning has no significant effect on students' achievement as compare to traditional method when treated students in the objective type test of general science was rejected.

The above outcomes show that the students of experimental group which were dealt with cooperative learning performed better than the control group instructed by traditional method. This means that attainment level of pupils in cooperative learning is better than the students of controlled group in General Science.

Result Discussions

After comparison of post-test, the mean scores of both groups reflects that cooperative learning method is better than traditional teaching method because students accepted the change and innovation. Moreover, high achiever tries their best for the success of the group. While in traditional method the results are in normal range. Cooperative and communication skills are developed through cooperative learning, and these skills are necessary to acquire for an individual student to live in the society. While in traditional method students remain passive. Cooperative learning is best for slow learner because they can learn easily from their peer group as well as from their teachers and the teaching during increases two folds i.e. they learn from students and teacher, while in traditional method slow are learner did ask question due to hesitation. Students are cooperative with each other and share their ideas and they have single objective of success only and in traditional method students individually try to solve problem and promote competitive situation.

Ho: indicates, "Cooperative learning has no significant effect on student's achievement as compare to traditional method" was rejected. The outcome of the research is sustained by the findings of studies operated by Khan and Ahmad (2014). It reflects that cooperative learning has a significance effect on student's achievements. When we test the null hypothesis for the short questions and for the multiple choice question the results are given below:

H1: indicate, "There is no significant effect of treatment on students achievement both in short question and multiple choice question" was also rejected. The result sustained by the findings of study by Dheeraj and Kumari (2013). It reflects that cooperative learning has a significance effect on student's achievements in short question of General Science.

Conclusion Recommendations and suggestion

First of all researcher will try to submit the suggestion in order to improve the cooperative learning method. As mentioned by the name the method is cooperative, so cooperation between teacher and students is necessary. The method is followed by the lecture method. In first step teacher provide the instruction to his students with a good pace in the stipulated period of time. When S/he finishes the course then there comes the phase of revision and at the second stage teacher formulate the groups within the class. The group should be heterogeneous in nature i.e. it will consist of average, high achiever and the low achiever. In third phase the teacher will convert the teacher centred class into students centre class by making a small circle for each group at various places in the class. For this purpose the size/ space of the class room should be accommodate for whole of the class.

Then a chapter wise discussion should be started with in the group and the topic of the chapters are distributed in such a way that difficult area should be discussed by the high achievers of the group and the normal topics should be handled by the average or slow learner. An ideal group will consist of five to eight students. The role of the teacher is very important and requires lot of activeness by the teacher. The teacher will visit and observe the group without disturbing them. Teacher will work as active listener by moving from one group to another and where the teacher feel the blockage in ideas or problem in explanation S/he will help the group. By providing a hint to the student of one group the teacher will move forward so that each group has a strong feeling that teacher is the part of this activity. So teacher role is like a Catalyst, S/he does not take part in the activity but fasten the whole process. Before closing the event teacher may have oral summative evaluation by asking one or two question of varying nature form each group. The whole activity throws bundle of energy to the whole class and group. Furthermore, a group competition can also be generated to foster the whole process. The session can be close by paying the thanks to students.

Although the method has significant role in teaching learning process, but to adopt this method teacher must be trained and have passion of devotion. In addition to this the everyday use of this method may create the slackness among teachers. Self-study is important but teacher should play his/her role effectively. The teacher role is participatory in cooperative learning and for this purpose a proper training to teachers should be arranged.

With the help of statistical analysis and findings it can be drawn that cooperative learning has a significant role in teaching learning process and it is better that the traditional teaching method. So the researcher can conclude that, Cooperative learning method is considered to be more competent in enhancing student's achievement both in short questions and in multiple choice questions in the subject for General Science. The cooperative teaching method may be also fruitful in other subject areas provided that teacher has some expertise and knowledge of this method. Change is the innate character of the human nature, therefore teachers should vary their teaching methods from time to time for the betterment of students at various level of education.

References

Artzt, A. F., & Newman, C. M. (1990). *Cooperative Learning. Mathematics Teacher*. Vol 83 pp. 448-449.

Chianson, M. M., Kurumeh, M. S., & Obida, J. A. (2010). Effects of Cooperative Learning on student's retention in circle geometry in Secondary school in Benue State Nigeria. *American Journal of Scientific and Industrial Research2*, pp. 33-36.

Dheeraj, D., Kumari, R. (2013). Effect of cooperative learning on Achievement in environmental science of school student. *International Journal of Scientific and research publications*, 3(2). Retrieved May 6, 2014 from www.ijsrp.org. Iyer, R. B. (2013). Relationship between cooperative learning and student achievement. 3(1), 21-25.

Johnson, D. W., Johnson, R. T., & Smith, K. A. (1998). *Cooperative learning returns to college what evidence is there that it works? Change*30(4), pp. 26-35.

Johnson, D. W.; Johnson, R. T.; Stanne, M. E. *Cooperative Learning Methods: A meta-analysis*. University of Minnesota, Minneapolis: Cooperative Learning Center, 2000; http://www.cooperation.org/pages/cl-methods.html (accessed October 5, 2006). pp. 1-17.

Kenny, D. A., Archambault, F. X., & Hallmark, B. W. (1995). *The Effects of Group Composition on Gifted and Non-Gifted Elementary Students in Cooperative Learning Groups. Storrs*, CT: The National Research Center on the Gifted and Talented, University of Connecticut. pp. 9-18.

Khan, S. A., & Ahmad, R. N. (2014). Evaluation of the effectiveness of cooperative learning method versus traditional method on the reading comprehension of the students. *Journal of research and reflections in education*, 8(1), 55-64.

Ozsoy, N., & Yildiz, N. (2004). The Effects of Learning Together Technique Of Cooperative Learning Method On Student Achievement in Mathematics Teaching 7th Class Of Primary School. *The Turkish Online Journal of Educational Technology*, 3(3), 49-54.

Salawu, I. O. (1999). *Effects of three instructional media on students' teacher learning outcomes in selected teaching skills.* Unpublished Ph.D. Thesis. University of Ibadan, Ibadan.

Slavin, R. E. (1990). Cooperative learning: theory, research and Practice. Boston: Allyn &Bacon.

Slavin, R. E. (1996). *Research on Cooperative Learning and Achievement: What We Know, What We Need to Know*. *Contemporary Educational Psychology* pp. 1-18.

Quality Issues in Higher Education: The Role of Methodological Triangulation in Enhancing the Quality of a Doctoral Thesis

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Abstract

This paper examines the relative merits of writing or examining a doctoral thesis by placing it in its appropriate philosophical perspective and opting for plurality in choice of methodology paradigms. The paper describes the impact of multiple paradigm inquiry upon the quality of hypothesis formulation, collection and analysis of relevant literature, processing of the data and attainment of the objectives dictated by the central research question(s). Using the literature review approach, the paper highlights advantages of adopting a multi-paradigm inquiry. The paper posits that methodological triangulation will reinforce the validity of the hypothetical assertions rendering a doctoral thesis more credible. The practice would create fertile ground for cultivation of new theories. Further, multi-paradigm formulation of constructs would help avoid oversimplified generalizations.

Keywords: Methodology; Multi-paradigm; Methodological Triangulation

Introduction

Concerns are frequently expressed by educationists about the overall quality of doctoral theses in social science at tertiary level. Although the numbers of PhD D degrees awarded has multiplied in Pakistan several-fold recently, examiners are not satisfied with the methodological treatment of constructs in the theses. Subject specialists are wary that research is not producing anything new and that mostly some previous product is shot out under a new title. Recent research considers it essential to adopt methodological triangulation with an object to produce desired quality in construct formulation and to induce a trend for rigour in that respect amongst researchers. The factors that contribute to a good thesis *viz.* an appropriate abstract, formulation of a valid hypothesis and research questions, review of literature, data collection and its analysis through qualitative and quantitative means are reinforced when developed in methodologically diverse environment. Methodological triangulation offers fertile ground for cultivation of new theories and suggests further improvements in the way social science theses should be examined.

Hypothesis

"Methodological triangulation will reinforce the validity of the formulated construct(s) rendering a doctoral thesis more credible and provide fertile ground for cultivation of new theories."

Review of Literature

The practice of research methodology is grounded in the theories of positivism, historicism, neo-Kantianism and pragmatism. Linking of methodology with quality of social science research is, however, a relatively new trend. Arthur Marwick's (1970) *The Nature of History* intended as a primer for students, may be

credited with being the earliest writing on the subject proper. Bunge (1983), Dempster (1998), Bickman & Rog (1998), McCulloch (2004), Carroll (2005), Lynne Pearce (2005),Rowena Murray (2006), Victor Jupp (2006), Gerald J. Miller & Kaifeng Yang (2008) have, among others, visited quality issues pertaining to methodology. Authors have highlighted vital considerations in formulation of hypothesis, role of an apt abstract, need for adequate arguments in favour of the central research question, developing proper research questions, fulfilment of stipulated research objectives, selection of appropriate research methods, etc. Their writings provide ample guidelines on such related topics as applied research and document analysis. The ambit further expands to take in modern trends such as multi-paradigm research and to touch upon the role of doctoral education in improving the quality of theses. The following extractions bring forth glimpses of ideas exposed by these authors on the topic.

The Central Research Question

The central research question or "the" hypothesis in social science, suggested in one or two sentences, presupposes a causal link between the operation of an agency, or a desirable practice, or a single aspect of a complex operation, on the one hand, and the effect it is theorized to produce in an individual or a group of human beings, on the other. The causal relationship between the independent and dependent variables is the most critical condition and it must not drop from sight during the progression of arguments when proving the case. Murnane, & Willett in *Methods Matter: Improving Causal Inference in Educational and Social Science Research* published in 2011 recount John Stuart Mill's "three critical conditions that must be met in order to claim that one thing *causes* another":

> [T]he hypothesized *cause* must *precede* its anticipated *effect* in time…. if the levels of the cause differ in some systematic way, then there must be corresponding variation in the effect…. the researcher must be able to discount all other plausible explanations — other than the anticipated causal one — for the link observed between the hypothetical cause and effect (Murnane & Willett 2011 p. 29).

Logic demands that the idea be framed in the form of a negative proposition rather than a positive or affirmative assertion such that its rejection, as a result of prosecution through qualitative reason or through statistical test of data collected through sundry tools, or both, will suggest the affirmative as the only alternative left to a rationally disposed inquisitive mind that must now be accepted as valid and upheld as the "only truth." Lately, it has been the trend to formulate two or three hypotheses to cover all aspects of a composite causal bond. However, it is definitely inconsistent with the norms of humanities and social science to formulate a dozen or more hypotheses. Variations of the central hypothesis based on splitting of data, for instance, by gender, marital status, income, job specifications, narrowly defined preferences in consumption of consumer goods, etc. should be extracted as derivatives of the main proposition and not as hypotheses. When research questions have been framed in lieu of a central hypothesis, the number of such questions should be limited to a dozen or so when dealing with social problems. Lynne Pearce (2005) in her *How to examine a Thesis* explains the difference on this score between science and humanities/ social science:

> In the [natural or basic] sciences the central question leading the research… is usually clearly defined before doctoral work begins and the 'student's original contribution to knowledge' is understood more in terms of the experiments undertaken to solve it. In the humanities and social sciences, however,

> formulating a sharp and coherent thesis is very much at the centre of the project's claim to originality. It is also, by definition, one of the first things that the examiners should be looking for in the course of assessment. (Pearce: 2005. p. 51)

In order to arrive at a pertinent central research question or a hypothesis, it is important to do an initial review of the literature. The researcher would be well advised to consult University's Research Dean/ Director Library at this stage of research and seek his or her assistance in locating a handful of relevant research studies, literature reviews, articles and seminar reports on the chosen topic. Specific reading would bring up the issues and questions that are pertinent vis-à-vis selected topic which must be precipitated into the central research question and any amplifying questions that are considered necessary to cover the topic in full. Research question(s) need a lot of attention and time in developing and refining and must not be done in a rush to avoid embarrassment or re-doing the entire research at a later stage. Lodico et al. (2006) in their *Methods In Educational Research: From Theory to Practice* recommend:

> Because the research question is the seed from which the study will eventually grow, it is imperative that the question be what is often referred to as *researchable* or doable. Researchable questions can be answered through the systematic collection of data and clearly meet ethical guidelines.... all human research should protect participants from harm, provide confidentiality, and include informed consent (Lodico et al. 2006 p. 27).

Researchable questions in turn define the variables that quantitative research explores. They help identify research themes and the logical sequence of argument that would prove the central hypothesis qualitatively.

The Abstract

The role of Abstract is that of agenda setting and announcing the intent of the research to the reader. Pearce considers:

> The Abstract is perhaps the most important page in the whole thesis. It is not only the means; by which the thesis will make itself known in the world; it is the set of expectations by which it will be judged…. [T]his is where the central hypothesis should first be expounded – preferably in a clear and crystalline form. (Pearce: 2005. p. 51)

Lodico et al. (2006) maintain that Abstract is expected to inform the reader which of the two basic types of reasoning has been followed by the researcher: inductive or deductive. Inductive reasoning uses observations to build an abstraction or a description of the phenomenon that is being studied. When using inductive data collection methods, the researcher should inform the readers of (1) the system integrating the diverse sets of observations, (2) 'patterns' or themes that would extract the truth out of the observations, and (3) the generalization extracted by the researcher out of those themes. In deductive reasoning the researcher formulates a hypothesis: "a tentative explanation that can be tested by collecting data" (Lodico et al. (2006). p. 5.) Abstract is the right place to announce whether the research is expected to be 'empirical' or 'non-empirical/ experiential' through a statement that indicates measure used and size of sample, for example:

> A survey of 408 elementary school principals found about 1 in 5 had positive attitudes toward inclusion while most were uncertain. Positive experiences with students with disabilities and exposure to special

> education concepts were associated with positive attitudes toward inclusion and more positive attitudes were related to less restrictive placements (Lodico et al. (2006). p. 33.).

Helen Newing, C. M. Eagle, R. K. Puri & C. W. Watson in their 2011 book *Conducting Research in Conservation* advise researchers to:

> Start with a few sentences stating the general aim and rationale of the study. If necessary, state the specific objectives. The majority of the abstract should describe the methodology and summarize the results. End with a brief concluding statement about the wider implications of what you have found or suggesting further action (Newing et al. 2011. p. 328).

Since all social research is intended to transform the society, the value of the 'wider implications' cannot be overstated. For instance, if a researcher is developing a curriculum for eighth grade, there are wider implications. Hopefully, the students will carry the sharply focused knowledge home to parents informally to 'show-off' and thus innocently sensitize them on ecological issues that may not otherwise constitute an area of concern for them. This implication the researcher may state in one or two lines towards the end of the Abstract.

Literature Review

Noel A. Card in his 2012 book *Applied Meta-Analysis for Social Science Research* writes on the strength of Cooper, 1988, 2009a: "A literature review can be defined as a synthesis of prior literature on a particular topic. Literature reviews differ along several dimensions, including their focus, goals, perspective, coverage, organization, intended audience, and method of synthesis" (Card. 2012. p.5). Literature review facilitates primary analysis normally referred to as data analysis. Review of literature extracts findings from an adequately large selection of literature on the chosen topic maintaining a narrow but sharp focus on the intent of research questions or declared objectives in quest of the contingent variables and their mutual relationship. Card states:

> Theoretical reviews focus on what theoretical explanations are commonly used within a field, attempt to explain phenomena using a novel theoretical alternative, or seek to integrate multiple theoretical perspectives. These are the types of reviews that are commonly reported in, for example, *Psychological Review*. Survey reviews focus on typical practices within a field, such as the use of particular methods in a field or trends in the forms of treatment used in published clinical trials… (Card. 2012. p. 6)

Review of literatures prompts the researcher as to what data is to be collected and from what sources, individuals and organizations. The review guides the researcher in what manner should the data be analyzed to provide answers to the research questions that necessitated the study. Review of literature thus suggests the empirical processes, the arrangement of data generation/ collection, its arrangement and grouping, the eventual analytical methods, form of presentation of results, consideration of the significance of 'causes' and their 'effects', and the deployment of these results so as to cause or initiate the social change aimed at by a research. The only type of research that is independent of literature review is the meta-analysis which processes the 'results' obtained by primary analyses of a large number of researches rather than the texts or the data in literature.

Helen Newing, C. M. Eagle, R. K. Puri and C. W. Watson in their 2011 book *Conducting Research in Conservation* advise the researcher that the literature review "should form a concise, coherent narrative that introduces the theoretical background to your study" (p. 40). The authors recommend that literature review should

be based on the literature search that was undertaken before data collection was started. Newing et al. do not consider it necessary that every single reference must be cited: "[I]f you make a broad statement, you should just select a few key references that adequately back it up…. you do not need them for common knowledge or for statements that follow logically from the previous material (Newing et al. 2011. p.320).

Logical Progression and Adequacy of Each Individual Argument

A well-arranged thesis is like a properly orchestrated court trial. The arguments central to the thesis are introduced and expounded in an orderly and progressive manner as the 'case' develops. The 'prosecutor' does not throw surprises at the court session. Opinions do not emerge casually, elliptically or as a confused tangle of several threads. Rowena Murray in her 2006 publication *How to Write a Thesis* advises the researcher when he or she is making an argument to:

> (1) Decide on the main point, (2) Define terms, elaborate conditions of applicability, (3) Illustrate your point, and (4) Discuss illustrations, examples or evidence: show what they say what you say they say. Many writers stop at the third step, as if to say 'See, that proves it.' However, simply presenting evidence is not enough; we have to show how we constructed our interpretation of it and how that interpretation makes our point. (Murray: 2006. p. 157)

The researcher is not likely to know the outcome of research at the outset. At times research brings out inferences at variance with, if not directly opposed to, what the researcher expected. While the researcher may be somewhat dismayed, such results often bring forth startling facts, and deliver critical messages about existing situations and practices, the principal concern in social science inquests. The researcher, like Alice in her Wonderland, sets out on a journey of discovery without knowing where it would take her. The research question provides a sense of direction but it does not dictate the destination.

Fulfilment of Stated Objectives

Apart from stating the hypothesis and/ or the research questions, a statement of objectives may be added which makes it easier for the examiner to satisfy him/ herself that the researcher has inquired all the facets of the problems he had intended to explore. Pearce considers fulfilment of stated objectives part of assessment criteria when examining a thesis:

> This is one of the assessment criteria that will obviously vary significantly from discipline to discipline but one which is probably most in need of a sharp eye in the humanities and social sciences. Whereas the presentational format of most science degrees makes the links between questions, experiments and results very explicit, examiners of a humanities degree may be forced to return to an abstract and/ or an introduction repeatedly to see if the candidate is doing all that they promised to do. (Pearce 2005 p.52)

In social science theses written in an experimental form, it is even more important for the manuscript to 'lay its cards on the table' in the Abstract. The concluding paragraph in the last chapter must likewise sum up the arguments and stake a claim that all facts have been demonstrated beyond reasonable doubt, and that all objectives have been amply achieved.

Issues pertaining to Methodology

Methodology is the name given to a set of principles of successful inquiry that must be pursued in quest of truth. Methodology in social science is frequently descriptive and analytical, but it may additionally be prescriptive or normative. Norma M. Riccucci (2008) quotes from Bunge (1983: p. xiv): "[Methodology] attempts to find out not only how people actually get to know but also how they ought to proceed in order to attain their cognitive goals.''(Norma M. Riccucci. The Logic of Inquiry in the Field of Public Administration. In Miller & Yang (2008) p.9)

Riccucci finds that there are profound differences in how followers of various philosophies would like to see the research done: (1) Positivists prefer an ontological or legislative approach; they would like the study to be inductive, and inferences to be rationally derived; hypotheses should be testable, and verifiable. (2) Postmodernists follow hermeneutics (both the first order art and the second order theory of understanding and interpretation of linguistic and non-linguistic expressions) and phenomenology (structures of consciousness as experienced from the first-person point of view) approach; case studies are the preferred method; (3) Post-positivists support triangulation through multiple sources of data and observations; qualitative techniques are the preferred method; qualitative method when used in isolation at times tends to falsify, rather than verify hypotheses. Riccucci quotes from Dempster (1998) to emphasize that the challenge for the researcher is "recognizing the gray areas that exist among and between [the various approaches to conducting research] ... tailoring research approaches to match characteristics of particular situations is not only valuable, but essential... plural perspectives offer the potential for strong contributions to research.'' (Miller, & Yang 2008 p.9)

Riccucci refutes, on the strength of Stivers (2000), the notion that there is one best way to approach the study of public administration. Discussions in some specialized social science disciplines such as linguistics and metaphysics designed for or understood by the specially initiated alone rapidly become esoteric. Social science can hardly afford to assume a distance from people as people are the actors in the playfield of 'social' science. Examiners must, therefore, look for wider readability in a research paper and see that it retains its feet firmly on ground while reaching out for the sky.

While a thesis in the domain of science subjects would be considered lacking in originality without some sort of 'methodological innovation,' we may not reasonably expect every social science/ humanities doctoral candidate to design a novel 'methodology.' The insistence upon having a methodology is a relatively recent phenomenon and it is possible to trace its origin to non-academic functions such as stringent funding policy that have sadly assumed primacy over academic considerations within a typical university organization (Pearce: 2005. p. 53).

Methods available to researcher have a wide range encompassing case based studies, surveys and secondary data sources, sifting the archives, document analysis, studies of coins, weapons, jewellery and trade-items, interviews, linguistic inquest, psychometric investigation, ethnographic methods, anthropological tracking through relics and DNA testing, and scrutiny through history-geography-culture based validation. Lately, mere statistical treatment has come to be regarded as 'the method' by the social science students. These days one frequently comes across a thesis that is simply a disjointed assembly of one hundred or more data tables neatly

processed through SPSS. In such cases it is important to see whether or not the call for data emanated either from the Review of Literature or the opinions of specialists. Literature reviewed must traverse the theories that underpin the central hypothesis and the 'theoretical framework'. Conclusions must be drawn from data analysis coherently so as to substantiate the central hypothesis through logically deducted inferences. Discussion between the examiners and the candidate during a viva must go beyond the instruments employed for collection of response, and tools used to process the data, on to an intellectual plane. Pearce expects that the candidate and the examiners would "have a frank and open discussion about what worked, what didn't work, and what changes had to be made" (Pearce: 2005. p.53).

The examiners must see that the textual excerpts quoted in the manuscript effectively furthered the arguments made by the scholar toward his central hypothesis. The candidate must while concluding an argument declare how he or she positions himself or herself vis-à-vis the range of positions assumed by the authors of the quoted text. It is interaction amongst people rather than copying text from a large number of books that creates intellectual opportunities for the researcher to engage with the society.

Appropriateness of Research Method

A research can only furnish answers to the chosen questions if the method applied is suited to the type of research undertaken. For instance, statistical or quantitative approach may not bring out valid inferences if answers lay in the qualitative domain to begin with. Perhaps interviews or open-ended questions would have best brought out the qualitative dimension of the problem.

Ellen Perecman and Sara R. Curran in their 2006 publication *A Handbook for Social Science Field Research* include useful tips on use of archives, case studies, ethnographic methods, oral histories, focus groups, surveys, and secondary data sources as important tools of research. They consider maintaining research ethics and retention of research perspective essential for good research. Contributors of essays in this practical compendium bring out the value of these tools. In one of the chapters Robert Vitalis takes up archival methods. He recounts that "the case, the field experience, and most important, who you are as a researcher can dictate the methodological approach." He recommends "systematic collection and analysis of archival documents. "Andrew Schrank's essay on case-based research finds the tool relevant "as a source of causal inference… to uncover causal mechanisms." Alma Gottlieb describes how ethnography "complements other social science field research methods." She considers that "proper note-taking skills, and knowledge of hermeneutics are critical tools for ethnographic fieldwork." Tamara Giles-Vernick advises how a researcher can avoid pitfalls in oral historical accounts and those arising out of the "hermeneutical intricacies of situating oneself, the teller," and suggests "integrating oral historic accounts with other sources of information." Susan Short's essay offers a description of techniques that may be found useful when conducting and analyzing focus group interviews. She points out "the ethical constraints" inherent in focus group interviewing. (Perecman & Curran 2006 p. 2-3).

It is iterated that these tools may be used side by side as long as the approach is coherent. When examining a thesis, examiners must include the objectives-approach relevance issue as part of the criteria when judging a doctoral thesis. As Lynn Pearce advises, the final test of the quality of a doctoral thesis would be "whether the method chosen was appropriate for the [research] question(s) asked, as well as an evaluation of whether or not the

candidate was alert to the advantages and limitations of that particular method in a wider context." (Pearce 2005 p. 54)

Despite increasing use of quantitative tools, greater significance is normally accorded to qualitative researches in social sciences. Elliot and Timulask consider that this is due to "emphasis on understanding phenomena in their own right (rather than from some outside perspective); open, exploratory research questions (vs. closed-ended hypotheses); unlimited, emergent description options (vs. predetermined choices or rating scales); use of special strategies for enhancing the credibility of design and analyses." (Elliott, R. & Timulak, L. Descriptive and interpretive approaches to qualitative research. Chapter 11 in Miles, J. & Gilbert, P. (Eds.).

Qualitative and quantitative designs are complementary in nature and should preferably be employed simultaneously either sequentially or one after another. Researcher may start with objective paradigms and then bring up the subjective ones. The former would provide generalizations in a broader setting whereas the latter would furnish more localized meanings in sharply focused perspectives. Having administered a survey to collect quantitative data, the researcher may list such vital questions that still remain unanswered. The researcher may then selectively carry out follow-up interviews. In reverse order, the subjective approach may be employed to develop an understanding of an unfamiliar topic. The researcher may then use that knowledge to design quantitative tools.

Qualitative part of research can benefit from papers based on review of literature which constitute important secondary sources. Such papers reflect a comprehensive and critical overview of important researches pertaining to one field of research or one specific topic. Reviews of literature researches normally do not have a method section. Non-empirical articles provide useful collection of opinions and commentaries opening a window into what experts and professionals conclude from bulk of previous researches. Experiential reports are important as they narrate teachers' and administrators' personal experiences and account of difficulties encountered. These narratives are an important source of inspiration and creative ideas for younger professionals. Schools can benefit a lot from Action Research. This type of research is "conducted by practitioners in their own school settings to identify and take actions to remedy problems that occur in their practice. Because of its practical orientation, action research generally uses both quantitative and qualitative data" (Lodico et al. (2006) p. 282).

Document Research

Document research has significance not just for historians but for most other scholars of social science as well. Documents, however, do not deliver potent inferences unless the rules of the game are strictly observed. The foremost amongst these is the primacy of the 'primary' sources. Gary McCulloch (2004) in *Documentary Research in Education, History and the Social Sciences* emphasizes that when documents such as memoirs, diaries, letters, diplomatic reports, and original narratives of eye-witnesses, government papers, newspapers and so on are used, the researcher must be sensitive to the principal distinction between primary and secondary sources. McCulloch quotes from Marwick (1970) to differentiate the primary and the secondary sources:

> At a common-sense level the distinction between a primary and a secondary source is obvious enough: the primary source is the raw material, more meaningful to the expert historian than to the layman; the secondary source is the coherent work of history, article, dissertation or book, in which both the intelligent layman and the historian who is venturing upon a new research topic, or keeping in touch with new

> discoveries in his chosen field, or seeking to widen his general historical knowledge, will look for what they want. (Marwick. (1970). *The Nature of History.* p. 132. In McCulloch. 2004. *Documentary Research in Education, History and the Social Sciences.* London: Routledge Falmer. p. 26)

The advent of ICT in the twenty first century has changed the very form and the nature of the document. More material is now available on-line rather than in print. Examiners need to make amends in the way virtual documents are to be treated for the purpose of research. McCulloch observes:

> [T]he internet and electronic mail have created a new kind of document, the *virtual* source…. Only by recognizing the significance of these new developments can we begin to respond to the challenges and opportunities of doing documentary research in the twenty-first century. (McCulloch 2004 p. 25)

Constantly expanding use of information technology offers wide ranging possibilities in research. William H. Dutton and Paul W. Jeffreys in their 2010 book titled *World Wide Research: Reshaping the Sciences and Humanities* consider that there is such a research activity that may suitably be called e-research. They raise the question of e-research being acknowledged as a discipline in itself:

> …[E]-research encompasses the use of distributed and collaborative computing tools and data systems throughout the range of academic disciplines and fields. Key questions about it include: Will e- research pervade other disciplines or form one or more separate specializations of its own? What effect will it have on different disciplines in terms of shifting or reinforcing their boundaries or in terms of sidestepping them by becoming a separate domain outside of existing academic disciplines? (Dutton, W. & Jeffreys, P. (2010) p. 257)

Information technology places a large volume of primary sources at the disposal of researcher with an ease that was not available to researcher twenty years ago. Chronologically, primary sources are distinct and valuable in the sense that documents were created within the relevant period. By comparison, secondary sources were produced on a later date and cannot claim either to capture the spirit of the time or be entirely free from bias and historiography errors.

Then, there is the question of bearable rigour in dealing with conventional documents. A large number of researches are started but never finished due to researcher's fatigue. As Tosh puts it: "Even for the experienced historian with green fingers, research in the primary sources is time-consuming; for the novice it can be painfully slow" (Tosh 2002 p. 86. In McCulloch 2004 p. 35). McCulloch suggests that methodological pluralism can be ensured by resorting to diverse types of documentary sources:

> A broader notion of triangulation and methodological pluralism is possible also through a combination of documentary and non-documentary sources. Probably the most common approach to developing such a combination is to relate archival records to interviews of living respondents. (McCulloch 2004 p. 110)

The examiners must, however, satisfy themselves that secondary sources have been understood by the doctoral candidate as they would have been understood at the time when they were created, and not as they are likely to be understood today.

Research in Multi-Paradigm Dimension

The wide range of methods employed in social research today makes research in multiple paradigm mode feasible. In their 2006 publication *Talk and Interaction in Social Research Methods*, edited by Paul Drew, Geoffrey Raymond and Darin Weinberg, contributors narrate how social scientists came to adopt the empirical methods of observation in social research. Beginning in the 1960s, Thomas Kuhn (1962) *The Structure of Scientific Revolutions* inspired David Bloor (1976), Barry Barnes (1977), and several other members of the so-called "Edinburgh Group" to take "a macro-sociological approach to the study of scientific knowledge, linking the findings of various historically notable scientific projects and the macro-social contexts within which those findings were produced." The group studied how "powerful social 'interests', rather than adherence to a uniform logic of empirical inquiry, governed the directions taken by scientific progress." They highlighted "the contingently negotiated patterns of social interaction according to which scientific controversies were resolved and credible knowledge produced" (Collins 1985). Drew, Raymond and Weinberg extract that: "New approaches to the sociology of science utilized discourse analytic and/or ethnographic approaches to highlight the important roles played by various *linguistic* processes in the production of natural scientific knowledge (see Garfinkel et al. 1981; Gilbert and Mulkay 1984; Latour and Woolgar 1979)."

Social scientists, in zeal for scientific methodology, began adopting "sound scientific practice," unduly conscious of the suggestion that the social sciences are not immune from "social influences" and hence, somehow, represent a lower status on legitimacy scale as sciences proper. Whereas "empirical inquiry," distinguished the sciences, social scientists were dismissed as "*ad hoc* ideologists, slapdash and irrational advocates of one or another partisan outlook on the proceedings of the social world." Drew, Raymond and Weinberg comment on the strength of Lynch (1993) that the social scientists have adopted the research methods that are standard in the natural sciences in total disregard of the fact that:

> [T]here is generally a rather considerable divergence between philosophical, programmatic, and/or other *post hoc* accounts of research methods in the natural sciences and the actual achievement of natural scientific research in practice. Whereas philosophical and programmatic generalizations overwhelmingly emphasize unity, formal logic, and the rigorous standardization of natural scientific methods, empirical observation of natural scientific research in practice overwhelmingly tends to reveal a world of contingency, improvisation, and local variation in natural scientific work (Drew et al. 2006. p. 3).

Drew, Raymond and Weinberg point out that just as natural science employs practical skills and co-ordinated activities, social scientific research has used a whole range of similar practices and skills belonging to social science sub-disciplines such as (1) socio-historical analyses (Ross 1991), statistics (Hacking 1990; Porter 1996), anthropology (Asad 1973; Kuklick 1991; Pagden 1982; Stocking 1987), economics (Mirowski 2001), history (Novick 1988), psychology (Dansiger 1990; Rose 1989), and others (Drew et al. 2006 p. 3).

The range of models and methods available to the researcher is vast. A research could, for instance, follow postmodernists into hermeneutics and phenomenology, or pursue a normative or legislative approach or base inferences predominantly on statistical treatment, or adopt methodological pluralism. As Dempster (1998) points out, choice of methodology remains a personal matter for the scholar but any such preference must be exercised in

full cognizance of the characteristics of the particular quest and the specific demands of the research question/ situation.

When formulating a hypothesis, a scholar may prefer multi-paradigm inquiry in favour of a broader perspective. Yang et al. note that a "multi-paradigm inquiry concentrates on defining the phenomenon of interest so that interpretative flexibility can be enabled" (Yang, K., Zhang, Y. & Marc Holzer, M. Dealing with Multiple Paradigms in Public Administration Research. In Miller, & Yang, K. 2008 p. 35). When possible, alternative or opposing hypotheses representing other paradigms should also be formulated in favour of developing a comprehensive picture. The researcher should, in all cases, make his paradigmatic assumptions clear to the reader.

Review of Literature supports a multi-paradigm inquiry by bridging different or overlapping paradigms. It also marks transition zones or points between paradigms. The scholar should, however, not only bring out the contrasts of the two paradigms but also the common ground or the 'connections' between two models. Exploring this common ground will pave the way for moving forward on theoretical ground so as to extend the scope, relevance and creativity of a theory through (1) Bracketing or bridging transition zones; (2) Sequential and parallel research; or (3) Multi-paradigm theory building i.e. meta-theorizing or paradigm interplay to span conflicting paradigms (Miller & Yang 2008 p. 33).

A scholar regarding the term ''paradigm'' in a broader sense to represent 'research clusters' or 'theoretical lenses' that share similar philosophies, focused problems, and approaches of inquiry, would represent a variety of views, offering insights the others lacked. Yang et al. condense in the light of a paradigm adapted from Lan, Z. and others that a scholar researching public administration and working on 'Values/ focuses' may adopt one or more of six approaches: (1) Managerial i.e. Efficiency, Effectiveness and Economy; (2) Political, Responsiveness and Accountability; (3) Judicial i.e. Legal Rights, Legal Privileges, Equity, Laws and Legal Processes; (4) Ethical i.e. Morality, and Integrity; (5) Historical i.e. Lessons from past; or (6) Integrated i.e. Process of Governing, Values. (Adapted from Lan, Z. & Anders, K. K., by Yang et al. In Miller, J. & Yang, K. 2008. p. 28)

Inferences

When deciding upon a topic or formulating a hypothesis/ research question(s) in full awareness of the peculiarities of a particular research problem, a scholar may base his research on a combination of more than one paradigm. As suggested by Yang et al., a multiple paradigm enables interpretative flexibility. Researcher may posit, side by side with principle hypothesis, a couple of alternative or opposing hypotheses representing other paradigms that would help develop an all-inclusive picture. Other models at variance with the principal model may even be merged together as long as paradigmatic assumptions are first made clear to the reader.

Review of Literature in a multi-paradigm research not only points out the differences amongst those models, and marks the points of transition from one to the other, but also explores the overlapping territory and, where possible, unifies the models through merger into one. It also marks transition zones or points between paradigms. The scholar should, having brought out the contrasts of the two or more paradigms, establish the common ground between these models and thus allow the research to move on and discover new theoretical grounds. The significance of such a multi-paradigm research would be found in its success in extending the scope, defining new relevance and reinvigorating the creativity of a theory. In a multi-paradigm research, whether

sequential or parallel, tasks may include bracketing or bridging transition zones, meta-theorizing and paradigm interplay. Testing a new theory is the crux of the matter which must prosecute the entire range of propositions. Logically deducted inferences alone shall form the basis of eventual theory development and post-development evaluation of the resulting theory.

Conclusion

Scholars should be able to improve the quality of their research and break new ground by taking advantage of multi-paradigm theory-building/ multi-triangulation. Bridging and bracketing conflicting paradigms will create space for new theories. Supervisors should encourage scholars to take up multi-paradigm research based on complex methodology. The data should be arranged and processed from several philosophical perspectives. Methodological triangulation will afford validation of data through cross verification using two or more methods. Data, in this case, should be collected through multiple sources such as interviews, observations, questionnaires, document analysis etc. Qualitative methods may include a wide range of activities *viz.* case study, action research, ethnographic, interpretive or constructive paradigms. Alternatively, research may pursue a normative or legislative approach. The qualitative descriptive/ interpretive/ normative approach may be complemented by quantitative design experiments identified with positivist paradigms.

Recommendations

The quantitative and qualitative methods used in unison will be a potent source of strength for the hypothesis. Credibility of the research will be boosted in a multi-paradigm inquiry and oversimplified generalizations will be avoided. Use of methodological triangulation should be treated by the examiners as an important criterion in assessing the quality of a doctoral thesis. HEC may consider linking the quality of doctoral theses to assessment of external efficiency of an educational institution with a view to realize the intended outcomes of research funding.

References

Bunge, M. (1983). *Epistemology and methodology I: Exploring the world.* Treatise on Basic Philosophy, volume 5, Dordrecht, Holland: D. Reidel Publishing Company.

Card, N. (2012). *Applied Meta-Analysis for Social Science Research*. New York: The Guilford Press.

Drew, P., Raymond, G., & Weinberg, D. (Eds.). (2006). *Talk and Interaction in Social Research Methods.,* London: Sage Publications.

Dutton, H., & Jeffreys, P. (Eds.). (2010). *World Wide Research: Reshaping the Sciences and Humanities.* Cambridge, Massachusetts: Massachusetts Institute of Technology. p. 257.

Lodico, M., Spaulding, D., & Voegtle, K. (2006). *Methods in Educational Research: From Theory to Practice.* San Francisco, CA: Jossey-Bass.

Marwick, A. (1970). *The Nature of History.* London: The Macmillan Press.

McCulloch, G. (2004). *Documentary Research in Education, History and the Social Sciences.* London: Routledge Falmer.

Miles, J., & Gilbert, P. (Eds.). *A Handbook of Research Methods for Clinical and Health Psychology.* Oxford: Oxford University Press.

Miller, G., & Yang, K. (Eds.). (2008). *Handbook of Research Methods in Public Administration.* Florida: Auerbach Publications, Taylor & Francis Group.

Murnane R., & Willett. J. 2011. *Methods Matter: Improving Causal Inference in Educational and Social Science Research.* New York: Oxford University Press.

Murray, R. (2006). *How to Write a Thesis.* Berkshire, UK: Open University Press.

Newing, H., Eagle, C., Puri, R., & Watson. C. (2011). *Conducting Research in Conservation.* Oxon: Routledge.

Pearce, L. (2005). *How to Examine a Thesis.* Berkshire, UK: Open University Press.

Perecman E., & Curran, S. (2006). *A Handbook for Social Science Field Research: Essays and Bibliographic Sources on Research Design and Methods.* New Delhi: Sage Publications)

Handbook of Research Methods for Clinical and Health Psychology. Oxford: Oxford University Press. p.47. http://nideffer.net/classes/GCT_RPI_S14/readings/interpretive .pdf. Downloaded 30 December, 2015).

Parental Attitude towards Girls' Higher Education: A Case Study

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Abstract

This study was conducted to investigate the attitude of parents towards girls' higher education. The objective of the study was to investigate the significance of girls' education according to their parents. The population of the study was comprised of an independent sample of female students enrolled in higher education in a rural area of Chakwal District. The sample comprised fifty students from post higher secondary education. There was only one institution of higher education for women in the sample area that was selected to collect data from students of B.A and B.SC. A closed ended questionnaire was used as a tool of research and descriptive statistics were used for data analysis. The results indicated that parents have a very supportive attitude for the education of their daughters and they consider higher education is necessary for their daughters.

Introduction

Parents are the unchallenged stakeholders in the lives of young people in Pakistan. They play a critical role in socializing their children and passing to them essential information and life skills. Parents decide about the future of their wards, especially about their educational career. Women are the segment of our society and their lives mostly depend on parental decisions before marriage and after marriage they depend on their life partners. This situation is more critical in rural areas. The decisions like education and marriage are mostly taken by their parents.

The important functions of higher education includes research, development of civic duties and public solidarity, through which it contributes to attain sustainable economic development and creation of a tolerant society (Government of Pakistan, 2009-a). The amplified involvement of women in higher education assists, to improve not only the possibility of their employment but also their worth of life. In this regard, UN secretary general Kofi Annan (2005)stated, "without achieving gender equality for girls in education the world has no chance of achieving many of the ambitions like health and social development that targets it has set for itself". Higher education for women plays a fundamental part in the advancement and progress of any nation and consequently inthe development of women.

Higher education facilitates women in two ways, it enables competent women to become effective leaders in society and let them to be a role model for younger girls (Yasmeen, 2005). Berggren (2006) expressed that women's participation in higher education at the end of 1978 was 57% and during that decade a slight increase in women involvement in higher education was also observed.

Education also improves women's status by increasing their earnings. Amin and Kuenning (2001) describes in their study that parental attitude towards their daughters' education is positive because they believe that women education will increase their value in the marriage market.

Higher level of women education usually leads to higher level of income source for women (Stromquist, 2001). Education is considered a most important economic asset for the country and educational loss of women every year stand for 10 to 20% decline in girl's prospect income. So countries could increase per capita economic income by about 0.3% per year or 3% in the next decade if they accomplish equivalence in girls and boys enrollment (Global compaign for Education,2005). Through education, women can enter employment field and thus inturn solve her financial problems (Sharma, 2005).

Bradley, (2000) stated in his study of developed and developing countries, that in developed countries, women enrolment in higher education institutions has increased and gender equality in higher education is raised up to 50%.He further revealed that in some of the developed countries like United States, more women have access to higher education as compared to men.

Situational Analysis of Education in Pakistan

The National Educational Policy, 2009 has cited the article 38 (d) from the constitution of Pakistan which illustrated the vision of education in Pakistan as equally accessible to all citizens irrespective of gender, caste, creed or race (GoP, 2009-b).

An imperative function of higher education in Pakistan is to conduct research on various issues. Through research, higher education contributes in sustainable economic and social growth. In Pakistan, equitable access to higher education has always been a dreadful challenge. Even significant rise in women access to higher education from 2.2% in 2002 to 4.7% in 2008, of 18-23 year age group have been noted but it remained below as compare to India (7%) and Malaysia (12%) (GoP, 2009-c). Iqbal (2011) cited Pakistan's educational statistics 2007-2008 which declared that total participation rate at higher education is 741, 092 having male enrolment rate at 54 % whereas female enrolment rate is 46%.

In Pakistan girls' higher education situation is more awful as their retention rate in higher education is much lower than boys (Iqbal, 2011). However during the year 2008, 54% male students and 46% female students were entered in higher education in Pakistan (GoP, 2009).

Educational realization of women in Pakistan is amongst the lowest in the world. 75% rural women drop out at primary level of education. There are only 3 percent of rural 12 years old girls who continue their education. In this way female contribution in all levels of education is lower than those of boys (Qureshi, 2003-2004).

Hashmi, Zafar and Ali, (2010) explored the the reason behind the attitude towards women' higher education is that rural society is termed as honor based society,as they perceive that higher education enables women to stand against the decisions of the head of family. The study further revealed that women who get higher education take decisions by their own of choosing a life partner and deciding for the job and the head of household take this kind of attitude as rebellious attitude and suggest limiting the education of girls.

On the basis of the above discussion, it is concluded that parental attitude towards girls' higher education is needed to be further discussed and studied especially in the context of Pakistani society. Therefore, the present study is designed to investigate the positive or negative attitude of parents through girls' perception with the help of a closed ended questionnaire. It is anticipated that this study would be helpful to pinpoint issues related to girls' higher

education and to develop interventions to handle the problem effectively in the higher education system of a developing country like Pakistan.

Research Questions

The purpose of the research study was to investigate the parental attitude towards their daughters' higher education. In order to get the conception of attitude of rural parents toward their daughters' higher education, the research study attempted to give answers to the following research questions:

1. What is the importance of girls' education according to their parents?
2. What type of contribution, rural parents have in their daughters' higher education?
3. Do parents take into consideration the gender, financial, cultural and religious based reservations while making decision for their daughters' education?
4. What kind of changes their parents expect to see in their daughters after getting higher education?

Methodology

This study was descriptive in nature, and quantitative approach was applied for the analysis of numerical data. In order to collect primary data, a locally developed questionnaire with the closed ended items was used. The scale which was utilized for the response of questionnaires was 5 Likert scale. The questionnaires addressed to following categories. (1) Importance of Women Education (2) Gender Specifications (3) Financial Resources (4) Cultural and Family Traditional Patterns (5) Religious Values (6) Women Education and Development

The population of this study consisted of the girls students enrolled in higher education from the area of District Chakwal. The sample comprised of 50 students from post higher secondary education. There was only one institution of higher education in the sample area that was selected as sample to collect data from students of post higher secondary level. Convenient sampling technique was applied in the research in order to collect primary data. In order to determine the content validity of the tool, three different experts' opinions were taken on its validity. The experts were from higher education and all three were holding PhD degree. Changes were made in the questionnaire while under taking their suggestions. In order to ensure the internal consistency of the tool, Pilot study was conducted and results were analyzed through the SPSS software. The results of the analysis showed **.890**AlphaCoefficientReliability for the questionnaire. This meant that tool was highly significant and reliable to collect data.

Data Analysis

Data collected through questionnaire was interpreted through tables in which percentages of the respondents were described. Through descriptive analysis percentages were further discussed. Some of the statements in the categories were negatively scored and reverse scoring was applied on them. The scores were reversed in negative statements as giving 1 Score to strongly agree, 2 agree, 3 uncertain, 4 disagree and 5 to strongly disagree.

Table 1: Importance of Women Education

Questions	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
1.Your parents allow you to be enrolled in higher education	50%	36%	2%	12%	0%
2.Your parents have a supportive attitude for higher education	68%	26%	0%	6%	0%
3.They give attention on your education	42%	42%	0%	16%	0%
4.Your parents are contributing important role for your education	64%	28%	0%	8%	0%
5. Your educational achievements are acknowledged by your parents.	66%	34%	0%	0%	0%
6.Your parents encourage you to go and get higher education at distant areas	42%	34%	2%	16%	6%
7.You have a right to decide about your education	54%	34%	0%	10%	2%
Average	**55%**	**33%**	**1%**	**10%**	**1%**

There are seven questions in Table 1 and out of 350 responses, 55% are in strongly agree and 33% are in agree while there are only 1% respondents are uncertain. Only 10% responses disagreed with the statements and meanwhile there are only 1% respondents who strongly disagreed. So the overall results of table 1 indicated that majority of the students agree that their parents understand the importance of education for girls.

Table 2: Gender Specifications

Questions	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
1.Your parents allow you to get higher education in co-educational institutions	20%	22%	2%	30%	26%
2.Your parents have equal educational preferences for you and for your brother	52%	28%	0%	20%	0%
3.Girls are provided same opportunities as boys to get higher education	52%	36%	2%	10%	0%
4.Your parents expect you to contribute more to the household work	26% 5	32% 4	16% 3	22%	2 4% 1
Reverse scoring of the above statement					
5.Your parents spent equal money on the education of yours and your brother	72%	18%	2%	8%	0%
Average	**40%**	**25%**	**4%**	**20%**	**11%**

Table 2 deals with gender based reservations which illustrate that gender based differences are also prevailing in our society as we are living in patriarchs set up, in which males are dominating while females are subordinating them. However the result of table 2 shows that out of 250 respondents 40% are strongly agreed and 25% agreed with the statements. This illustrates that students do not face any kind of gender based differences in the education. While, 30% responses disagreed and 26% strongly disagreed on the statement that their parents support them to gain education in co-educational institutions. This means that they consider only single sex institutions acceptable for their daughters. 20% respondents disagreed with the statements and 11% strongly disagree. Hence, overall results illustrated that the people who do not agree that males and females should get equal educational preferences and opportunities are very few in number and majority of people believe to give equal opportunities to their children to get education irrespective of their gender.

Table 3: Financial Resources

Questions	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
1.Your educational expenses are happily paid by your parents	74%	16%	0%	10%	0%
2.You are given enough money to fulfil your educational needs	56%	32%	0%	12%	0%
Average %	**65%**	**24%**	**0%**	**11%**	**0%**

Table 3 sited to another factor that can become a stumbling block in girls' education i.e. Financial Resources. Literature shows that inadequate availability of financial resources also effects parental decision to get their children enrolled in higher education. Results of Table 3 indicate that out of 100 responses 65% strongly agree and 24% agree that their educational expenses are happily paid by their parents. Only 11% responses disagreed with the statements. Majority of the students believe that their parents have a supportive attitude in terms of financial concerns related to their education.

Table 4: Cultural and Family Traditional Patterns

Questions	**Strongly Agree**	**Agree**	**Uncertain**	**Disagree**	**Strongly Disagree**
1.Your family has positive attitude for your higher education	38%	40%	0%	16%	6%
2.Your family traditions support girls' education	34%	30%	0%	34%	2%
3.Your parents believe that you will follow family traditions while getting higher education	30%	44%	4%	16%	6%
4.Educated women are encouraged to share their opinions and ideas in your family	40%	40%	4%	14%	2%
5.Your family gives importance to your suggestions and opinions	36%	44%	0%	16%	4%
Average %	**36%**	**40%**	**1%**	**19%**	**4%**

Table 4 deals with the statements related to the extended family attitude and culture of the area which are directly and indirectly affecting the attitude and decisions of the parents related to their daughters' education. Table 4 has5 questions and out of 250, 36% respondents are strongly agreed and 40% are agreed that means their culture and family traditions are in favour of women education and higher education is considered very important for women. 1% responses are doubtful while 19% responses disagreed and only 4% strongly disagreed. Majority of responses show high results related to the optimistic and encouraging attitude of family and culture about the higher education of the girls.

Table 5: Religious Values

Questions	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
1.Your parents believe that only religious education is necessary for girls **Reverse scoring of the above statement**	8% 5	16% 4	8% 3	64% 2	4% 1
2.Your parents consider that Islam support women participation at all levels of education	70%	30%	0%	0%	0%
3.Your family takes education for girls as religious obligation	46%	36%	0%	14%	4%
4.Your parents think that you can offer your religious duties more devotedly by getting higher education	38%	48%	6%	6%	2%
Average %	**40%**	**45%**	**3%**	**9%**	**3%**

The area of the study has a very diverse religious background and beliefs of the people are deeply rooted in the religion. Table 5 shows that out of 200 responses, 40% are strongly agreed and 45% are agreed with the statements this shows that their parents believed that Islam highly support girls' education at all level and higher education enables them to understand their religion with its full spirit. There are 3% responses that are unclear about the situation and 9% responses disagreed and 3% strongly disagreed. However majority of respondents answered that their parents believe that Islam support girls' education at all levels without any ambiguity and their parents also take their education as a religious obligation.

Table 6: Women Education and Development

Questions	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
1.Your parents believe that higher education of the girls can improve their social status	64%	36%	0%	0%	0%
2.They accept that higher education of the girls can make Positive effects on family's economic condition	34%	56%	0%	10%	0%
3.In opinion of your parents higher education can bring positive changes in your life	58%	42%	0%	0%	0%
4. Your parents think that higher education provides opportunities to utilize your abilities and potentials.	44%	54%	0%	2%	0%

5.Your parents consider that highly educated women have enough opportunities for employment	50%	44%	2%	4%	0%
Average%	**50%**	**46%**	**1%**	**3%**	**0%**

Table 6 is related to women education and development which is based on the concept that higher education makes possible women access to prosperity. Research studies shows that higher education can bring economic, social and moral development of women in all phases of life. In this perspective, findings in the table 6 shows that 50% respondents strongly agreed and 46% are agreed with the statements of the questionnaire. Only 3% responses are disagreed. In this way result obtained from students indicates that parents who think that higher education can bring development in their daughter's life are in majority.

Results and Discussions

The findings of this study showed positive result as students agreed that their parents give importance to their education. The results indicated that even in rural areas the stereotyped mind of people about the education of their daughters has been changed. This changing mind setup of the people is a positive step to eliminate gender discrimination from the educational system and through this it will gradually eliminate gender discrimination from every field of life. Results of the study are almost the same with the study done by Ali and Buzdar (2011) in tribal areas of Dera Ghazi khan. The major findings of the study were that parents had a positive attitude for their daughters' education.

Moreover, the results showed that parents think that higher education brings changes in social and economic status of women as majority of students (96%) agreed respectively, gives an evidence for their parents' highly positive attitude for their higher education. These results are also supported with the study conducted by Amin & Kenning (2000) on Bangladeshi villages and findings of their study were that mostly parents in the villages educate their daughters because girls' education is valued in marriage market and it also enhances their economic status.

The results are in contradiction with the results of Nelson (2006) survey on parents in and around Rawalpindi city as in his study he illustrated that parents mostly favour only religious education in contrast of liberal education and they are not ready to accept any education sector reforms.

However, these results are supported by the research study conducted by Yasmeen (2005) in which it was concluded that higher education has brought awareness in women about their rights and responsibilities, empowerment and leadership qualities. This study was done on students and female teachers of Pakistani universities.

Findings of this study also revealed gender differences in the educational matters of girls as 31% student respondents agreed that discrimination is being made with them in this regard. Overall majority of respondents showed that parents did not practice gender based discrimination in the education of their daughters. The results of the study are quite contradictory with the results of the study done by Sriparna Bose and Sunita Bose (2009) in

Indian rural areas. The findings of the study encompassed that in rural areas parents prefer to educate sons. The reason behind their particular experience is that in Indian traditions the son of the family is perceived as the one who will continue the family name and he will take care of parents in their old age as he is the bread winner for the family.

Overall results indicate that parents are willing to spend money on their daughter's education as 89% respondents agreed that parents happily meet the expenses of their daughters' education. The findings of this study illustrated that with the average of 76% student respondents strongly agreed that their family, culture and traditions support women education. The findings revealed that people in majority believe that their cultural, traditional and family norms support female education. Results also indicate that the majority of parents have a liberal attitude for their daughter's higher education.

The result of the study supports the research findings of the study conducted by Hashmi, Ali and Zafar (2010) in rural areas of Punjab (Pakistan). The results of the study showed that girls belonging to families where the head of the family has a conservative mind set up had lower level of educational achievements as compared to the girls who belonged to a liberal family background and therefore the educational attainments of the girls who belonged to these liberal families are higher.

The result of study showed that most of parents (85%) were in favour of liberal Islamic concept of education. This shows that parents believed that Islam highly supports female education at all levels and they take women education as religious obligation. Findings of the study were supported by Abbas (2003) study in which he discussed that educational attitude and experience of South Asian young women is affected by domestic, religious and cultural norms and values. The results showed that South Asian women had supportive parental attitude for their education and their religious values also hold up their education specifically Islam has a strong bond between education and religion. As Islam make it obligatory for every men and women to get all levels of education irrespective of their gender.

The present study provided significant findings regarding parental attitude towards girls' higher education. Further studies can be conducted on the correlation of parental literacy and their daughters' education.

References

Abbas, T. (2003). The impact of religion-cultural norms and values on the education of young South Asian women. *British Journal of Sociology of Education, 24* (4).

Ali, M. A. (2011). Parents' attitude toward daughters' education in tribal area of Dera Ghazi Khan (Pakistan). *Inquiry, Turkish Online Journal of Qualitative, 2* (1).

Amin, S., & Marry, K. A. (2001). Women's capabilities and the right to education in Bangladesh. *International Journal of Politics, Culture, and Society, 15* (1). Retrieved May 02, 2012, from http://www.jstor.org/stable/pdfplus/20000178.pdf?acceptTC=true

Berggren, C. (2006). Labour market influence on recruitment to higher education: Gender and class perspectives. *Higher Education, 52* (1).

Bose, S. B. (2009). The role of parental perceptions in the gender bias in education in West

Bengal, India: Results from a micro survey. Retrieved April 25, 2012, from http://paa2009.princeton.edu/download.aspx?submissionId=90847

Bradley, K. (2000). The incorporation of women into higher education: Paradoxical *Sociology of Education, 73* (1).

Cynthia B. Lloyd, C. M. (2005). The effect of gender differences in primary school access, type, and quality on the decision to enrol in rural Pakistan.

Economic Development and Cultural Change, 53 (3).

Education, G. C. (2005). Girls can't wait: Why girls' education matters and how to make it happen now: Briefing Paper for the UN Beijing +10 Review and Appraisal.

Reproductive Health Matters, 13 (25).

Government of Pakistan (2009). *National Education Policy.* Islamabad: Ministry of Education. Retrieved March 15, 2012, from http://www.moe.gov.pk/nepr/new.pdf

Hashmi, N., Zafar M. I., & Ali. T. (2010). Does traditional attitude matter? Female educational attainment in rural Pakistan. *Pakistan Journal of Science*, 62 (1).

Government of Pakistan (2009). *Higher Education Commission Report 2002-08*, Islamabad

Iqbal, H. M. (2011). *Education in Pakistan developmental milestones.* Karachi: Paramount publishing enterprise.

Nelson, M. J. (2006). Muslims, markets, and the meaning of a "GOOD" education in Pakistan. *.Asian Survey, 46* (5).

Qureshi, S. (2003-2004). *Pakistan: Education and gender policy girl's education: A lifeline to development.* C P S international policy fellow ship program, Open Society Institute.

Sharma, S. (2005). *Education of women in changing world* (1st ed.). (S.Sharma, Ed.) Delhi: S. S. publishers.

Stromquist, N. P. (2001). What poverty does to girls' education: The intersection of class, gender and policy in Latin America. *Compare, 31* (1).

UNESCO. (2005) EFA Global Monitoring Report 2005. Paris: UNESCO

Yasmeen, S. (2005). Impact of higher education in understanding of social recognition in women.

Classroom Bilingualism/Multilingualism: A Study on Students' Perspective at Intermediate Level

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Abstract

Classroom discourse plays an important role for conceptual understanding and learning performance of the students at any level. Pakistan is a multilingual country with Urdu as a lingua franca. When medium of instruction (MOI) is changed from Urdu to English, in most of the classroom discourses, code-switching takes place. This classroom bilingualism or multilingualism has certain impact on students' learning performance. This study was conducted to elaborate this phenomenon at intermediate level. A mixed method research strategy was applied in the study. Sample size was selected through a multi-layered sampling technique and data was collected through a questionnaire. After thorough data analysis, it was found that bilingual/multilingual classroom discourse resulting after change of MOI has negative impact on students' learning performance.

Keywords: classroom bilingualism/multilingualism, intermediate level, medium of instruction.

Introduction

Pakistan is the territory of bilingual/multilingual speakers. People from the Muslim community face the challenge of almost four languages (mother tongue: Punjabi, Pashto, Sindhi, Balochi, etc.; national language: Urdu; foreign languages: English, and Arabic) in their religious and social interaction. Urdu and English are used as Medium of Instruction (MOI) (Li & Shum, 2008) in the education system public or private sector. Mostly in the English medium schools and colleges, code switching takes place almost at every level. This study is limited to intermediate level only. There might be different reasons for it. One of the reasons is bilingualism/multilingualism: Every student or teacher knows at least two or three languages (one is mother tongue, second national language Urdu and third foreign language or language of instruction (LOI) i.e. English in this case (Nisar & Ahmed, 2011).

Psycholinguists all over the world agree that the best option of language for academic purposes is mother tongue: students get clearer academic concepts (related to natural sciences, social sciences, humanities etc.) in their mother tongue (Tsui et al., 1999). Due to this reason bilingualism/multilingualism is resorted to even at graduation and post-graduation level. In Pakistani context at intermediate level science subjects are taught in English as MOI which results into code switching or code mixing in the classroom discourse (Gulzar, 2010). This practice of bilingualism/multilingualism in the classroom discourse has a definite impact on the learning performance of the students. The researcher has consulted the intermediate level students' opinion in this regard for due consideration by the educationists in public or private sector in policy on MOI in general and at intermediate level in particular.

Rationale

The main objective behind the choice of this study was to probe the consequences of bilingualism/multilingualism at intermediate level for the learning performance of the students. Classroom discourse plays a very significant role for developing conceptual understanding among the students at any level. Present study is a step forward for illuminating this phenomenon which may result into assistance for teachers, educationists and language policy makers, for understanding the case of the students by their own assessment in this regard.

Hypothesis

The following null hypothesis was meant to be tested in the present study:-

H_0: There will be no significant difference of opinion among male and female students in respect of the impact of bilingualism/multilingualism in classroom discourse on their learning performance at intermediate level after change of MOI.

Literature Review

Pakistan is a multilingual country, where people speak multiple languages minor (Hindco, Saraiki, Gujrati, Kashmiri, Pothohari etc.) and major (Urdu, English, Punjabi, Pashto, Sindhi, Balochi etc.). In the present state of affairs, education system in Pakistan may be divided into three categories: monolingual education (pure English medium or Urdu medium all over Pakistan), bilingual education (both English and Urdu medium all over Pakistan) and multilingual education (Sindhi, Urdu and English as in the province of Sindh or Pashto, Urdu and English as in Khyber Pakhton Khawah or KPK) system. These are discussed in details in the following:

Monolingual Education System

An education system or program that is based on only one language as a medium of instruction is termed as monolingual education system. For example English medium, Urdu medium and Sindhi medium institutions in Pakistan. Due to multi-cultural, ethnic and linguistic groups in the population of a state or country sociolinguists and educationists favour bilingual and multilingual education. Svensson (2005) has presented the case of Helsinki University with respect to MOI from monolingual to bilingual and multilingual. It is evident from his presentation that the more people get closer to each other the more they become multilingual. There is no doubt that some languages especially English take favourable space being lingua franca but multilingualism is being favoured because of political, cultural, academic and social interaction at international level. Whereas Duenas (2004) asserts that high level of proficiency can be achieved in classrooms where the target language is medium of communication rather than an entity of study.

Walter (2000) has reported the result of a seminar on multilingual education in 1999 held at University of North Dakota Session which summarizes the investigative work of the seminar participants from ten countries, which suggests that countries where mother tongue is not developed and implemented, education programs will result into long-term disadvantage outweighing any short-term benefits that are achieved from using only one language of education or monolingual education.

Bilingual Education System

Bilingual education is defined as the use of two languages. The combination may be:

- foreign language and second or national language for example English and Urdu,
- foreign language and mother tongue for example English and Sindhi or Pashto,
- second language or national language and mother tongue for example Urdu and Sindhi or Pashto,
- mother tongue of one population and mother tongue of another population for example Urdu and Sindhi in the province of Sindh for Urdu speaking Mohajirs and Sindhis especially in the city of Karachi

Both the languages can be used as MOI for the same pupil population in a well-organized program with suitable proportion in accordance with the priorities of educational objectives. There is remarkable evidence in developing and developed countries showing the effectiveness of bilingual education. In Zambia, for example between English-language reading and writing scores of children under the bilingual education program comprising mother tongue(L1) and second language(L2) showed a surprising improvement over the scores of children in non-bilingual programs (L2 only).The reading and writing scores in the Zambian languages was also improved (Williams, 1998).

According to August & Hakuta, (1997) and Dutcher, (2004), studies recommend that bilingualism has great cognitive benefits. Instead of replacing one language with another, good bilingual education promotes harmonizing relationship between languages, and consequently proficiency in one language improves proficiency in another. Dutcher, (2004) further asserts that students in bilingual classrooms may perform better in subjects other than the language. For instance, a number of United States studies conclude that children in bilingual programs in upper elementary grades performed better in both reading and mathematics than children who are being taught in programs that demand immediate switch to English. More broadly, first-language study gives children and parents a sense of pride and accomplishment.

There are two ways of implementing bilingual education: two-way bilingual education and one-way bilingual education (UNESCO, 2005).

Two-way bilingual education

All students develop dual language proficiency by receiving instruction in both the languages; generally half of the students are native speakers of one language and half of the students are native speakers of the other language. All curricula may be taught in both languages (but in limited topics).

One-way Bilingual Education

Only one group learns bilingually. Bilingualism can be termed as having knowledge of two different languages. It does not mean that the person should be flawless in a given language; the point is to have reasonable knowledge of a language other than the mother tongue, Rasul (2006).

Models of Bilingual Education

In a debate on bilingual education held by University of Massachusetts in 2002 following models are discussed:

Transitional Bilingual Education

This model encompasses all Bilingual Education programs which aim to shift students to the majority language, help students assimilate to mainstream cultural norms, and incorporate students into the national society. This is the most commonly used model in the United States.

Developmental or Maintenance Bilingual Education

This model encourages students to maintain their native language, strengthen their cultural identity, and affirm their civil rights in the national society.

Enrichment or Two-way Bilingual Education

This model supports the development of minority languages on the individual and collective levels, cultural pluralism at school and in the community, and an integrated national society based on the autonomy of cultural groups. This model is becoming increasingly common in Canada and the United States.

Multilingual Education System

Pakistan is a multilingual country. Its national language, Urdu, is the mother tongue of only 7.57 percent of the population though it is very widely used in the urban areas of the country. Pakistan's official language is still English as it was when the British ruled the country as part of British India. In addition to this, the country has five major indigenous languages (Rahman, 2003).

Apart from programming the use of several languages, MLE also involves the following:

- The development of good curriculum.
- The training of good teachers in the required languages, content and methodology.
- The production of good teaching materials (error-free and culturally relevant).
- The empowerment of the community (school-based management) (Walter, 2000).

MLE will not work when one simply changes the language by translating existing materials into the local languages (UNESCO, 2005). According to Nolasco (2009) MLE is recommended and preferred in comparison to other education systems due to following reasons:

Active participation

Use of the mother tongue or the first language (L1) in class enables the students to express themselves easily, as there is no fear of making mistakes. MLE encourages active input by children in the learning process because they comprehend what is being discussed and what is being asked from them. They can instantaneously use the L1 to build and explain their world, communicate their thoughts and add new concepts to what they previously discern (Schulter, 2006).MLE empowers the teachers as well, particularly when they are more fluent and proficient in the indigenous language than in the languages of MOI. Because the students can express themselves, the teachers can more precisely assess what has been learned, and discover areas where students need additional support (UNESCO, 2005).MLE creates the environment for the assimilation of the people's community knowledge, the knowledge that informs their lives and gives them meaning into the school system. According to Walter (2000) MLEmakes it possible for the community to produce its own ethnically applicable reading materials and teaching aids, together with the local writers, illustrators, cultural groups and other stakeholders in the community. MLE also empowers the parents who can take an active part in the education of their children because the school's and the community's language are also their language. MLE brings the community closer to the school and its programs.

Multi-dimensional Approach

MLE aims to produce learners who are:

- Multi-literate—they can read and write competently in the local language, the national language, and one or more languages of wider communication, such as English.
- Multi-lingual—they can use these languages in various situations.
- Multi-cultural—they can live and work harmoniously with people of different cultural backgrounds (Nolasco, 2009).

Change over from Informal to Academic Language

What we and our children know is the informal language or the everyday variety used for daily communication. Achievement in school depends on the academic and intellectualized language needed to discuss more intangible concepts. According to studies, it takes one to three years to learn the conversational language, but four to seven years to master the educational language under well-resourced environment. It also takes time to develop higher order thinking skills and this depends largely on cognitively demanding curriculum particularly from Grade 4 onwards (UNESCO, 2003).

Purgation of Inferiority Complex

According to Kangas (2000) if the indigenous languages are denied access in education, people lose their interest in local and regional languages. The resourceful population gradually joins the affluent and elite class by achieving proficiency in national and official languages. But those who do not have access to imperialist language and only know their indigenous language feel themselves handicapped in the walk of life as it is the case in Pakistan. People who do not know Urdu and English are failed to survive an honourable position in the society. MLE is solution for this kind of situation.

The use of the local and indigenous languages in education is not disadvantageous to building one nation. It suppresses the sentiments that may lead to vicious conflicts, disunity, and rebellion due to the refusal of regional and indigenous languages in the education system (UNESCO, 2005). In the early 1970s, the Bangladeshis fought and won a war against Pakistan over the issue of language. The Lithuanians protested the compulsory use of Russian in schools and later seceded from the former Soviet Union in the early 1990s (Nolasco, 2009). The sovereign government of Catalonia enacted the 1983 Catalonian Linguistic Normalization Law, which made Spanish and Catalan co-official languages in the region. This was an act made by the Catalonians against what they perceived to be the Spanish government's attempt at practicing linguistic imperialism in their region (Hall, 2001 cited in Rahman, 2006).

Affordable and Economical

It is a popular belief worldwide that MLE is an unaffordable system of education. Contrary to this popular conviction, L1-based education may actually cost less than a system that is based on L2. If we reflect on the capital washed out on drop-outs, repeaters, and failures, as well as other added costs, studies show that L2-based education systems are more costly than L1 systems. A Guatemalan study, for example, showed that it is more expensive to turn out a grade level passer (in Grades 1 to 6) in a Spanish medium school ($6,013) than in a Mayan school ($4,496) (Nolasco, 2009). In Mali, a World Bank study found that French-only programs cost about 8% less per year than mother-tongue schooling, but the total cost of educating a student through the six-year primary succession is about 27% more, largely because of the distinction in repetition and dropout rates (Patrinos, 1996). One problem

often raised in discussions about MLE is that it is too expensive to produce instructional materials in so many languages. This may be true if materials are produced in full colour, silky pages. The successful MLE experiences in Papua New Guinea, Indonesia, Kenya, Ethiopia, Cameroon, and the Philippines specify that teacher-made cardboard covered books, with simple black-and-white drawings on plain paper, are acceptable and just as effective in early primary education. In Papua New Guinea, the national government moved the materials development process from expensive urban contexts to the communities themselves. Because of this, the communities were able to produce instructional materials in about half of the 800 local languages in the country. The main concern should therefore be on building the capability of communities to construct their own materials in their own languages. This way we can make the MLE quite affordable (UNESCO, 2007). According to Walter (2000) critics of the idea of bilingual or multilingual education have continuously promulgated that the paramount cost required in the process of developing a mother tongue or multilingual education program is, by itself, an adequate rationale for not taking into account this option. Others have suggested that higher arrangement costs are less than compensation by resultant achievements in academic competence (Patrinos, 1996 & Thomas, 1997).

Methodology

This study is a quantitative research. A quantitative research instrument (questionnaire attached as appendix "A") was developed to collect the data. The data was analyzed statistically through SPSS (quantitatively) and qualitatively. The study was conducted in the city of Karachi that is the most thickly populated multi-ethnic city of Pakistan. The population of Karachi reflects the representation of all major areas of Pakistan. It is known as economic hub, therefore, people from all walks of life rich or poor from all over Pakistan visit and reside the city for their economic gains (business) or employments. The study was conducted in the public sector colleges. These colleges own a good reputation and cost affordable fee, therefore, students from multiple backgrounds (rich or poor) get their education in these colleges. The study was limited to intermediate level students. Due the big size of the target population, it was not feasible to collect the data form all students. A multi-layered sampling technique was used for selection of the respondents.

There were almost 132 male and female colleges in total. Almost 50% colleges were selected though random sampling for data collection including 36 male and 31 female (67) colleges. There were 264 respondents including 144 male and 120 female in the sample size who were selected through stratified random and purposive sampling. A pilot study was conducted before formal data collection. The questionnaire (attached as appendix 'A') developed for the data collection was close ended and it comprised eight questions in total which were finalized after detailed literature review on the topic and thorough consultations with experts in the field who were holding PhD degrees in social sciences particularly in the disciplines of education and linguistics. The Likert Scale which is widely used in survey research was also used in the present study for each question. It included following five attributes:

(a) strongly agree
(b) agree
(c) undecided
(d) disagree

(e) strongly disagree

Along with the pilot study as mentioned earlier, Cronbach's Alpha was also applied to research instrument though SPSS and data was collected through personal visits by the researcher himself to ensure the reliability and validity of the research respectively. The queries of the respondents were answered by the researcher then and there. It is also worthy to mentioned over here that the questionnaire return response was 100%.

Data Analysis

Data was analyzed through SPSS as per following details:

1. Major Hypotheses Testing
2. Item-by-Item Analysis

Testing of the Major Hypothesis

One null hypothesis was made for the study, which was tested by applying t-test as mentioned in the following:

Null Hypothesis

H_0: There will be no significant difference of opinion among male and female students in respect of the impact of bilingualism/multilingualism in classroom discourse on their learning performance at intermediate level after change of MOI.

Analysis of the Problem

1. $H_0 : \mu_1 = \mu_2$
2. $H_1 : \mu_1 \neq \mu_2$
3. $\alpha = 0.05$
4. Test Statistics : t-test

t-test

Table (1) Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Response	Male	144	4.2240	.78986	.06582
	Female	120	3.9115	.87723	.08008

Table (2)

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Smaller	Upper
Response	Equal variances assumed	.173	.678	3.044	262	.003	.31250	.10268	.11033	.51467
	Equal variances not assumed			3.015	242.137	.003	.31250	.10366	.10831	.51669

Decision Rule: Reject H_0 if computed $t \geq 1.9768$

Conclusion

Referring to the table of critical t values, it is found that at alpha = 0.05 with degree of freedom (df) = 262 the tabulated value of t= 1.9768, which is smaller than the computed value t= 3.044. Therefore, the H_0 is rejected and it is established that there is significant difference of opinion among male and female students in respect of the impact of bilingualism/multilingualism in classroom discourse on their learning performance at intermediate level after change of MOI. The difference of opinion among male and female respondents is further obvious from their mean difference as tabulated above.

Item-by-Item Analysis of the Questionnaire

In this section of the study, the data would be analyzed item-by-item. Following points should be kept in view while reading the reports:

(i) Chi-Square One-Variable test is applied through SPSS for analysis.

(ii) Level of Significance Alpha (α) = 0.05

(iii) Degree of Freedom (df) = k – 1 = 5-1 = 4

(iv) Decision Rule: Reject H_0 if computed value of $X^2 \geq 9.49$

Following is the item-by-tem data analysis of Questionnaire:

Analysis of the Problem

The problem for each item was analyzed in the same pattern as mentioned below:

1. H_0 : $f_1 = f_2 = f_3$
2. H_1 : $f_1 \neq f_2 \neq f_3$
3. $\alpha = 0.05$
4. Test Statistics : X^2

Item No. 1

I understand better in Urdu than English during classroom discussion.

There is no significant difference in the opinion of students in respect of item no.1.

Computation Results of X^2

Table (3) Chi-Square Test

Test Statistics	
	Qu1
Chi-Square	3.072E2[a]
Df	4
Asymp. Sig.	.000

Table (4) Frequencies

Qu1			
	Observed N	Expected N	Residual
Strongly Disagree	6	52.8	-46.8
Disagree	14	52.8	-38.8
Undecided	6	52.8	-46.8
Agree	91	52.8	38.2
Strongly Agree	147	52.8	94.2
Total	264		

Conclusion

Referring to the table of Chi-Square, it is found that at Alpha = 0.05 with degree of freedom (df) = 4 tabulated value of Chi X^2= 9.49, which is smaller than the computed value Chi X^2 = 3.072E2 = 307.2. Therefore, the $H_0$is rejected. The frequency table further shows that out of 264 respondents 147 strongly agree and 91 agree with the statement, which confirms that, there is overwhelming majority (90%) of the students who understand better in Urdu than English during classroom discussion.

Item No. 2

I understand well when classroom discussion is in both Urdu and English.

There is no significant difference in the opinion of students in respect of item no.2.

Computation Results of X^2

Table (5) Chi-Square Test

Test Statistics	
	Qu2
Chi-Square	4.213E2[a]
Df	4
Asymp. Sig.	.000

Table (6) Frequencies

Qu2			
	Observed N	Expected N	Residual
Strongly Disagree	2	52.8	-50.8
Disagree	1	52.8	-51.8
Undecided	7	52.8	-45.8
Agree	83	52.8	30.2
Strongly Agree	171	52.8	118.2
Total	264		

Conclusion

Referring to the table of Chi-Square, it is found that at Alpha = 0.05 with degree of freedom (df) = 4 tabulated value of Chi X^2 = 9.49, which is smaller than the computed value Chi X^2= 4.213E2 = 421.3. Therefore, the $H_0$is rejected. The frequency table further shows that out of 264 respondents 171 strongly agree and 83 agree with the statement, which confirms that, there is overwhelming majority (96%) of the students who understand well when classroom discussion is in both Urdu and English.

Item No. 3

I use Urdu in the classroom to ask questions.

There is no significant difference in the opinion of students in respect of item no.3.

Computation Results of X^2

Table (7) Chi-Square Test

Test Statistics	
	Qu3
Chi-Square	3.975E2[a]
Df	4
Asymp. Sig.	.000

Table (8) Frequencies

Qu3			
	Observed N	Expected N	Residual
Strongly Disagree	3	52.8	-49.8
Disagree	14	52.8	-38.8
Undecided	2	52.8	-50.8
Agree	74	52.8	21.2
Strongly Agree	171	52.8	118.2
Total	264		

Conclusion

Referring to the table of Chi-Square, it is found that at Alpha = 0.05 with degree of freedom (df) = 4 tabulated value of Chi X^2= 9.49, which is smaller than the computed value Chi X^2 = 3.975E2 = 397.5. Therefore, the $H_0$is rejected. The frequency table further shows that out of 264 respondents 171 strongly agree and 74 agree with the statement, which confirms that, there is overwhelming majority (93%) of the students who use Urdu in the classroom to ask questions.

Item No. 4

Science/commerce teachers facilitate the students by using their mother tongue.

There is no significant difference in the opinion of students in respect of item no.4.

Computation Results of X^2

Table (9) Chi-Square Test

Test Statistics	
	Qu4
Chi-Square	1.943E2[a]
Df	4
Asymp. Sig.	.000

Table (10) Frequencies

Qu4			
	Observed N	Expected N	Residual
Strongly Disagree	13	52.8	-39.8
Disagree	24	52.8	-28.8
Undecided	19	52.8	-33.8
Agree	77	52.8	24.2
Strongly Agree	131	52.8	78.2
Total	264		

Conclusion

Referring to the table of Chi-Square, it is found that at Alpha = 0.05 with degree of freedom (df) = 4 tabulated value of Chi X^2 = 9.49, which is smaller than the computed value Chi X^2= 1.943E2 = 194.3. Therefore, the $H_0$is rejected. The frequency table further shows that out of 264 respondents 131 strongly agree and 77 agree with the statement, which confirms that, there is overwhelming majority (79%) of the students who confirm that science/commerce teachers facilitate the students by using their mother tongue.

.**Item No. 5**

I am unable to express myself well in English.

There is no significant difference in the opinion of students in respect of item no.5.

Computation Results of X^2

Table (11) Chi-Square Test

Test Statistics	
	Qu5
Chi-Square	1.903E2[a]
Df	5
Asymp. Sig.	.000

Table (12) Frequencies

Qu5			
	Observed N	Expected N	Residual
Strongly Disagree	15	44.0	-29.0
Disagree	41	44.0	-3.0
Undecided	19	44.0	-25.0
Agree	99	44.0	55.0
Strongly Agree	89	44.0	45.0
45	1	44.0	-43.0
Total	264		

Conclusion

Referring to the table of Chi-Square, it is found that at Alpha = 0.05 with degree of freedom (df) = 4 tabulated value of Chi X^2= 9.49, which is smaller than the computed value Chi X^2 = 1.903E2 = 190.3. Therefore, the $H_0$is rejected. The frequency table further shows that out of 264 respondents 89 strongly agree and 99 agree with the statement, which confirms that, there is overwhelming majority (71%) of the students who confirm that they are unable to express themselves well in English.

Item No. 6

I can perform better in Urdu-medium exam than English-medium exam.

There is no significant difference in the opinion of students in respect of item no.6.

Computation Results of X^2

Table (13) Chi-Square Test

Test Statistics	
	Qu6
Chi-Square	76.341[a]
Df	4
Asymp. Sig.	.000

Table (14) Frequencies

Qu6			
	Observed N	Expected N	Residual
Strongly Disagree	28	52.8	-24.8
Disagree	43	52.8	-9.8
Undecided	24	52.8	-28.8
Agree	69	52.8	16.2
Strongly Agree	100	52.8	47.2
Total	264		

Conclusion

Referring to the table of Chi-Square, it is found that at Alpha = 0.05 with degree of freedom (df) = 4 tabulated value of Chi X^2= 9.49, which is smaller than the computed value Chi X^2= 76.341. Therefore, the $H_0$is rejected. The frequency table further shows that out of 264 respondents 100 strongly agree and 69 agree with the statement, which confirms that, there are 64% students who claim that they can perform better in Urdu-medium exam than English-medium.

Item No. 7

Change of medium of instruction decreases my learning performance at intermediate level.

There is no significant difference in the opinion of students in respect of item no.7.

Computation Results of X^2

Table (15) Chi-Square Test

Test Statistics	
	Qu7
Chi-Square	86.947[a]
Df	4
Asymp. Sig.	.000

Test Statistics	
	Qu7
Chi-Square	86.947[a]
Df	4
Asymp. Sig.	.000

Table (16) Frequencies

Qu7			
	Observed N	Expected N	Residual
Strongly Disagree	26	52.8	-26.8
Disagree	48	52.8	-4.8
Undecided	15	52.8	-37.8
Agree	85	52.8	32.2
Strongly Agree	90	52.8	37.2
Total	264		

Conclusion

Referring to the table of Chi-Square, it is found that at Alpha = 0.05 with degree of freedom (df) = 4 tabulated value of Chi X^2= 9.49, which is smaller than the computed value Chi X^2= 86.947. Therefore, the Ho is rejected. The frequency table further shows that out of 264 respondents 90 strongly agree and 85 agree with the statement, which confirms that, there are 66% students who accepted that change of MOI decreases their learning performance at intermediate level.

Item No. 8

I adopt rote learning (cramming) to achieve high grades in the exam due to the change of medium of instruction at intermediate level.

There is no significant difference in the opinion of students in respect of item no.8.

Computation Results of X^2

Table (17) Chi-Square Test

Test Statistics	
	Qu8
Chi-Square	98.917[a]
Df	4
Asymp. Sig.	.000

Test Statistics	
	Qu8
Chi-Square	98.917[a]
Df	4
Asymp. Sig.	.000

Table (18) Frequencies

Qu8			
	Observed N	Expected N	Residual
Strongly Disagree	20	52.8	-32.8
Disagree	39	52.8	-13.8
Undecided	22	52.8	-30.8
Agree	89	52.8	36.2
Strongly Agree	94	52.8	41.2
Total	264		

Conclusion

Referring to the table of Chi-Square, it is found that at Alpha = 0.05 with degree of freedom (df) = 4 the tabulated value of Chi X^2= 9.49, which is smaller than the computed value Chi X^2= 98.917. Therefore, the Ho is rejected. The frequency table further shows that out of 264 respondents 94 strongly agree and 89 agree with the statement, which confirms that, there are 69% students who accepted that they adopt rote learning (cramming) to achieve high grades in the exam due to the change of medium of instruction at intermediate level.

Conclusion and Findings

The major rationale of this study was to explore the phenomenon of bilingualism/multilingualism in classroom discourse resulting from change of MOI at higher secondary level in the perspective of its impact on students' learning performance and make recommendations for effective learning in the light of opinions of the students of intermediate level. A null hypothesis was formulated for the study: *There will be no significant difference of opinion among male and female students in respect of the impact of bilingualism/multilingualism in classroom discourse on their learning performance at intermediate level after change of MOI.* The hypothesis is rejected and it is established that there is significant difference of opinion among male and female students in respect of the impact of bilingualism/multilingualism in classroom discourse on their learning performance at intermediate level after change of MOI in public sector colleges especially for science subjects. In accordance with the findings of the study, the students confirmed through their highly positively response that they understood better in Urdu than English during classroom discussion, understood well when classroom discussion was in both Urdu and English, used Urdu in the classroom to ask questions, and teachers facilitated the students while teaching

science/commerce subjects by using mother tongue of the students. However, they accepted through moderately positive response that they were unable to express themselves well in English, could not perform better in Urdu-medium exam than English-medium exam, adopted rote learning (cramming) to achieve high grades in the exam due to the change of medium of instruction at intermediate level and Change of MOI decreased their learning performance at intermediate level. It is therefore, concluded that bilingual or multilingual education is beneficial for the students if managed properly at appropriate levels in accordance with the needs of the students.

References

August, D. & Hakuta, K. (Eds.) (1997).Improving schooling for language-minority children, a research agenda, Washington, DC: National Academy Press, USA.

Dutcher, N. (2004).Expanding educational opportunity in linguistically diverse Societies, Washington, DC: Centre for Applied Linguistics, USA.

Dueñas, M. (2004). The whats, whys, hows and whos of content-based instruction in second/foreign language education, *International Journal of English Studies* Vol. 4 (1), 2004, pp. 73-96, University of Murcia.

Gulzar, A. M. (2010). Code-switching: awareness about its utility in bilingual classroom, *Bulletin of Education and Research*, December 2010, Vol. 32, No. 2 pp. 23-44.

Kangas, S. T. (2000).Linguistic Genocide in Education—or Worldwide Diversity and *Human* Rights?, MahwahNJ: Lawrence Erlbaum.

Li, B. & Shum, A.O.N. (2008). A discussion on using English as medium of instruction in Hong Kong and the sociolinguistic impacts, LCOM Papers 1 (2008), 37 – 51

Nisar, S. & Ahmad, S. I. (2011). Performance of secondary school certificate (ssc) graduates of English and Urdu medium schools: a comparative study. *Language in India www.languageinindia.com*, 11: 4 April 2011.

Nolasco, R.M.D. (2009). 21 reasons why Filipino children learn better while using their mother tongue: a primer on mother tongue-based multilingual education (MLE) and other issues on language and learning in the Philippines, University of the Philippines, 2009. http://catalogue.nla.gov.au/Record/4739741

Patrinos, H. & Eduardo, V. (1996). Costs and benefits of bilingual education in Guatemala: a partial analysis. (Unpublished research report). Washington D.C: The World Bank, USA.

Rasul, S. (2006). Language hybridization in Pakistan as socio-cultural phenomenon, an analysis of -mixed linguistic patterns, *PhD Thesis, National University of Modern Languages*; Islamabad Pakistan.

Svensson, P. F. (2005). From monolingual to bi- and multilingual instruction at the university of Helsinki: bi-and multilingual universities- challenges and future prospects, a paper presented at University of Helsinki, Language Centre, 1-3 September, 2005.

Schulter, B. (2006). Language learning and multilingual education from the point of view of the child - linguistic, cognitive and personal development in education forms with various linguistic settings, Conference Proceedings 7 on Language Policies and Education in Multilingual Societies: Tbilisi, Georgia, March 2, 2006.

Thomas, W.P. & Virginia C. (1997). School effectiveness for language minority students: Washington D.C.: National Clearinghouse for Bilingual Education, USA.

Tsui, A.B.M., Shum, M.S.K., Wong, C.K., Tse, K.S. & Ki,W.W., (1999). Which agenda? medium of instruction policy in post-1997 Hong Kong, *Language Culture and Curriculum*: Vol. 12, No.3

UNESCO, (2005). The importance of mother tongue-based schooling for educational quality: background paper prepared for the Education for All Global Monitoring Report 2005: The Quality Imperative, UNESCO 2005/ED/EFA/MRT/PI/9.

UNESCO, (2007). Advocacy kit for promoting multilingual education: including the excluded language in education policy and practice in Asia and the Pacific. UNESCO Bankok. ISBN 92-9223-110-3.

Walter, S.L. (2000). Explaining multilingual education: information on some tough questions: Work Papers of the Summer Institute of Linguistics, University of North Dakota Session 2000 Vol. 44.
Online: URL: http://www.und.edu/dept/linguistics/wp/2000Walter.PDF

Williams, E. (1998). Investigating bilingual literacy: evidence from Malawi and Zambia, Serial No. 24. London: DFID.

Language anxiety in learners of English (A case study of Bachelor students in Islamia College University)

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Abstract

Researcher had investigated various kinds of anxiety students faced in presentation at BS level in English in Islamia College Peshawar and it was the main objective of this study. Most of the time at BS level when students are required to give presentations in English; they were unable to give an appropriate oral presentation due to various anxiety factors. The data was collected through observation sheet during student's presentation and through pre-designed interview questions after presentation. Anxiety factors like fear of public speaking, fear of negative evaluation, peers and teacher pressure and fear of speaking sentences wrong in English were such factors which hindered their oral presentation. The study recommended that teachers need to be patient and sympathetic in their interaction with students and need to use such appealing and pleasant communicational strategies in teaching English which have the ability to invite student attention, and they might feel comfortable in the classroom.

Key words: Anxiety, presentation, pleasant communicational strategies, bachelor students, public speaking

Introduction

The development of oral skills in English is the aim of every university course because monolinguals are the demand of the 21th century world, without it the plethora of needs could not be achieved. Hence for every community bilingualism has become a practical concern. Due to some psycho-social factors English has become an international auxiliary language for the whole non English speaking countries as well as south Asian states. English has become so "deeply in their soil and in their consciousness that the choice of English or one's vernacular is no longer advisable" (Canangarajah, 1999, p.1). In order to improve students oral skills teachers have adopted presentations as a strategy in the class. But most of the times students become stressful due to the public nature of this strategy. The same problem is faced by the weak speakers as well as by the confident speakers. To know about feelings of learners, the researcher most of the time uses presentations in teaching, the main objective of this study is that the researcher is always interested to deeper his information about those factors which are the causes of anxiety in his learners when they are asked for presentation in English class.

Research Question

1. During oral presentation in English what are the anxiety signs which are evident in learners in the class room?
2. According to students, while speaking in English how does anxiety hinder their performance?

Literature Review

Horvitz & et. al, (1986, p125) define language anxiety "a subjective experience", so it varies from person to person, and most of the time it also depends on the context of performance, learners may feel easy when they are speaking in English with friends but if they are asked to present something in front of the class an obvious difference is observed in their performance. Language anxiety is defined in various ways by different researchers, chain(2012) suggests that when one is stressed he will not be in a position to make proper decisions and it would be the reason of negative performance in result with special reference to learning language. Clement, (1980) argues about language anxiety that it is a difficult concept which is related to learner's psychology in terms of their self-confidence, feelings and self-esteem. Young, (1992) says that language anxiety is a "complicated psychological phenomenon peculiar to language learning" (P.157). Different researchers have suggested that intense language anxiety most of the time adversely affects learner self-confidence, self-esteem which in result automatically hinders fluency in language acquisition (crook all & oxford, 1991 von word, 2003: Tanveer, 2007).

Hassan, (2004) Pakistani English analysis focuses on psychological barriers made by imperialism. He says that the myth of Standard English pronunciation and overemphasis on it has stopped Pakistani learners from using English because they are always evaluated not on what they said, but they are judged how they said it. They are always in fear of being on trial, ridiculed or corrected every time when they open their lips. Being a non-native speaker of English such mistakes are natural. Pakistani English is not British language. Pakistani English "is a reassembled form of communication loosely based on British English collared by several Pakistani frames of perceptions and some recent imports of America. It's the product of certain organic features of this society" (Hassan, 2004).

Factors causing language anxiety

Hurwitz & et. al, (1986) mentioned related to learning of foreign language three anxieties: First one is test anxiety, second is apprehension of communication and third is the fear of negative evaluation. Ayres and hope (1993) identified the most important foreign language anxiety type and named it public speaking fear. McCrockery (1984) view of communication apprehension "a broadly based anxiety related to oral communication" (P.B).The lack of confidence is the result of communication apprehension which mostly lead to an unwilling desire to speak in a foreign language (Woodrow, 2006). In Hurwitz et al, (1986) view, negative evaluation fear is enhanced by the idea of being observed and assessed by the friends and teacher. Young, (1992) suggested that student most of the time fear that they might make verbal errors, therefore they do not speak in English. In addition Kitano (2001) argues that due to the learners comparison made between own speaking skills and other leaners, who are competent speaker also promote language anxiety. Public speaking fear refers to anxiety of public speaking and stage fear (Ayres &Hop, 1993). In class room Presentation it refers to target language speaking fear in front of teacher and students, where he is the centre of attention for everyone which causes anxiety, and it results in making the presenter mind blank (Macintyre &Gardner 1994).

Methodology

Researcher conducted case study research in order to note leaner's personal experiences. As language anxiety, according to Hurwitz et at, (1986) "a subjective experience" Therefore it varies person to person. This research is qualitative as well as quantitative because this "begins with individual and sets out to understand and interpret their experience of a particular phenomenon" (When et. al, 2000). Research Questions were investigated to know symptoms of language anxiety and to judge the participants reported experiences.

Participants and context

The participants were BS students of English at Islamia College Peshawar. Most of the students belong to such a social back ground where English is not considered even second language, there were 20 students in class, 5 among them voluntarily took part in study (three female and two male). As a part of their routine course all students have to give presentation.

Date collection

As a part of their routine course, learners were required to take part in presentation on "my school life" and their presentation time was maximum 5 minutes, in all of them no one spoke for more than 2 minutes.

Observation sheet

During presentation in the class, the researcher noted certain language anxiety symptoms which were observable; such symptoms of anxiety were identified by the researcher from literature, for example quivering voice, nervous gesture, and incomplete pronounced words, dryness of throat and avoidance of eye contact. By using Observation sheet (Appendix 1), the researcher assessed these on a frequency scale occurrence which was ranging from always to never. A quantitative measure was provided by the checklist during each presentation of the anxiety degree which was observed.

Interviews

Semi structured interview was used by the researcher in English in order to investigate the learner own understandings of language anxiety in English speaking. As a one researcher tool this semi structured interview was considered because it was understandable to analyse the learner views, ideas, thoughts, opinion, beliefs or intentions of the participants as reported by them (Ohata, 2005). The interview also gave opportunity to the participants to report on the basis of their own experience and also to select and reconstruct (Ohata, 2005)

Ethical consideration

Researcher ensured that the learners participated on voluntary basis with informed consent. They were informed about the nature and purpose of the study at the outset, and anonymity and confidentiality were observed. In advance written permission was also obtained from the chairman of institution.

Data analysis and findings

In this section, presentation, observation and semi structured interviews and findings are presented.

Evidence of anxiety

As mentioned earlier, 5 students were observed while giving presentation, for the assessment of the frequency of various anxiety symptoms, researcher used a checklist. F1 from the female participants, she kept properly the eye contact with the students and teacher but she most of the time lost concentration and forgot what she was required to say. Trembling legs, stammering, breathlessness, nervous expressions and excessive sweating were observed. F2 the second presenter, her voice was quivering and avoided eye contact throughout presentation, she was nervous and her hands were shaking, her breathing was normal. However, she lost concentration frequently. Signs like, shyness and forgetting, avoidance of eye contact, breathlessness, lack of concentration, looking nervous and shivering hands were the signs observed in F3 presenter too. In male participants M1 presenter kept no eye contact, no concentration, forgot his ideas and were stammered while presenting, his hands and legs were observed trembling in front of the classmates and teacher. However, symptoms of sweating and breathlessness were not shown by him. The last presenter M2 also forgot his ideas, had no concentration and eye contact was also avoided by him. He looked uneasy, trembled and frequently stammered.

Student's perspectives

Soon after presentation researcher interviewed participants individually to share their feelings about their experience. The following analysis focuses on anxiety, four areas that were observed in our conversation.

Fear of public speaking

It was reported by the learners that public speaking fear is the root cause of anxiety, when they were asked to speak English in front of others. One of the male participants M1 reported that he gets nervous and forget what to say. I worry about other people who look at me when I speak English [….] when I come in front my mind get blank I forget most of words and things. The second participant (F2) also recorded the same public speaking fear which most of the time let her mind blank, she reported:

[…] i get confuse and become nervous when i try to come in front to present, I am unable to remember the vocabulary, I don't know what to say.

Fear of negative evaluation

M1 participant said that he become nervous and stressed whenever he is required to give presentation in English in front of his friends in class room, he reported:

My friend will consider me illiterate, this is the reason that I feel my friend will get me uneducated therefore I cannot speak in English. Moreover, they may also argue that I am speaking wrong sentences.

F2 female participant reported that the fear of teacher's evaluation discourages her to speak flawless English. She reported:

I feel uneasy […] I use to look at my teacher […] how is my teacher's observation about me when I am unable to speak English.

Inability to express themselves

M2 a male participant was of the view that he felt anxious when he was unable to find appropriate words while expressing in English, he said:

While speaking English I am thinking of suitable words and this problem make me nervous.

A female participant F2 were of the opinion that she cannot speak fluently because she forgets words, and feels it is difficult to keep on speaking in English. Most of the time she compares herself with other fellows who are good than her in English speaking, it makes her more nervous:

When I cannot express fluently I feel difficulty and am unable to recall English words, when I observe other students who are better in speaking than me it makes me more nervous, I am unable to use right words to make other understand.

Oral communication apprehension

Most of the students were of the opinion that they were feeling easy or good in writing as compared to speaking, one of the male respondents M1 reported that "I can write well but speaking English is difficult for me" moreover, the similar anxiety was reported by F 1 She said:

I am able to write on any topic but I cannot say [speak] what I am writing, sometimes I also face difficulty while writing as well but when I compare both I can write on any topic but unable to speak.

Discussions

When the researcher was observing students so it occurred to him as if he was observing his own case when he himself was a degree level student. This study confirmed that speaking in English publically is an anxiety-inducing experience which was my previous observation. This study results showed that there were a number of L2 Speaking anxiety symptoms in participants and the same anxiety symptoms make the students unconfident to speak in English in front of others. Most of the participants believed that they feared speaking English because their friends and teachers were constantly observing their mistakes. They also deemed that this will result is low marks and peer criticism. The mentioned problem was discussed already in literature review. A prominent impact of anxiety was observed on students memory, most of them reported that they forget the English words when they have to speak English in presentations and it is due to the formal situation pressure and negative comparison with other, in contrast the same pressure and comparison is absent in writing ,so they are able to write. Overall, this study shown that language anxiety is a psychological problem or barrier that results in lack of self-confidence and self-efficiency in students. Kinds of insights emerged from this research can help educationist and teachers to understand students experiences and problems which will help them to eradicate those hurdle which hinders the students oral skills in a most cooperative and attractive manner.

Conclusion

This small scale study points out the anxiety that BS students of university may face in Pakistan especially in KPK when they are supposed to appear in oral presentation in English in classroom. In our country, further such sort of study is needed to highlight different kinds of language anxiety in different universities context, which will help in solving the problems. Being a teacher the insights researcher have obtained from this research study make him to empathize more with his student and to find out ways to make this difficult process easy for them.

References

Chiang, M.-C. (2012). *The relationship between foreign language anxiety and foreign language speaking proficiency among elementary level school students in Taiwan. Master's thesis*. Ming Chuan University. Retrieved 20 May 2014, from http://ethesys.lib.mcu.edu.tw/ETD-db/ETD-search/view_etd?URN=etd-0702112-122957

Clement, R. (1980). Ethnicity, contact and communicative competence in a second language. In H. Giles, W.R. Robinson & P.M. Smith (Eds). Language: Social psychological perspectives (pp. 147-154). Oxford: Pergamon.

Canagarajah, A. S. (1999). Resisting linguistic imperialism in English teaching. OUP Oxford.

Hassan, R. (2004). Remaking English in Pakistan, NUML, Islamabad.

Cohen, L., Manion, L., & Morrison, K. (2000). Research methods in education (5th Ed.). London: Routledge.

Crookall, D., & Oxford, R. (1991). *Dealing with anxiety: Some practical activities 2for language learners and teacher trainees*. In E.K .Horwitz& D.J. Young (Eds.). Language anxiety: From theory and research to classroom implications (pp. 141-150) New Jersey: Prentice Hall.

Howitz, E. K., Horwitz, M. B., & Cope, J. A. (1986). Foreign language classroom anxiety. *Modern Language Journal*, 70(2), 125-132.

Kitano, K. (2001). Anxiety in the college Japanese language classroom. *The Modern Language Journal*, 85(4), 549-566.

Maclntyre, P. D., & Gardner, R. C. (1994). The subtle effects of language anxiety on cognitive processing in the second language. Language Learning, 44(2), 283-305.

McCrosky, J. C (1984). *The communication apprehension perspective*. In J.A. Daly & J. C McCrosky (Eds.). Avoiding communication: Shyness, reticence, and communication comprehension (pp. 13-38). Beverly Hills: Sage.

Ohata, K. (2005). Language anxiety from the teacher's perspective: Interviews with seven experienced ESL/EFL. Teachers. *Journal of Language and learning*, 3(1), 133-155.

Tanveer, M. (2007). *Investigation of the factors that cause language anxiety for ESL. Master's thesis.* Asian EFL Journal theses. Retrieved 12 August 2014, from http://asian – journal.com/thesis_M_Tanveer.pdf.

Von Worder, R. (2003). *Students' perspectives on foreign language anxiety. Inquiry*, 8(1), 21-40. Retrieved 18 August 2014, from htt://www.vccaedu.org/inquiry/inquiry-spring2003/i-81 –worde.html

Wilson, J. T. (2006). *Anxiety in learning English as foreign language*. Associations with students' variables with overall proficiency and with performance on an oral test. Doctoral thesis. University of Granada. Retrieved 18 August 2014, from http://O-hera.urg.es/tesisugr/16235290.pdf

Woodrow, L. (2006). Anxiety and speaking English as a second language. *RELC Journal*, 37(3), 308-328.

Young, D. J. (1992). Language anxiety from the foreign language specialist's perspective: Interview with Krashan, Omaggio, Hadley, Terrell and Rardin. *Foreign Language Annals*, 25(2), 157-172.

This Isle is Mute without Me
A Study of the Metaphor of Translation in Shakespeare's The Tempest

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Abstract

This paper is an attempt to analyse the idea of translation as it operates at various levels in Shakespeare's The Tempest. The word 'translation' literally means 'to carry across' or 'to bear across'. The metaphor of translation, or bearing across, is present at various planes in The Tempest. Not only is it present in the plot of the play which deals with a physical transfer of the characters from one place to the other, but is also at work in many less tangible domains. Foremost among these domains is that of language. Language occupies a central place in any translational activity, especially if this activity is carried out as part of the civilizing mission of a foreign colonizer, a theme upon which I have dwelt at length in my paper. The idea of translation is also present in the metaphors of dress or clothes in the play. Clothes become the physical analogy for language as both serve to give a specific representation to the otherwise nameless muteness lying underneath. Dress, like name, becomes the code of a translated identity, one that is assigned to the naked barbarity of the slave by his master. I have explored these aspects of the metaphor of translation in Shakespeare's The Tempest, along with passing references to similar themes in other plays.

Key Words: Translation, Metaphor, Language.

The metaphor of translation runs throughout the action of Shakespeare's *The Tempest*. The word 'translate' is derived from the Latin word 'transfero', which is composed of the prefix 'trans' which means 'beyond' or 'through' and 'latus' which means 'bear' or 'carry'; the word 'transfero' thus means 'to carry across' or 'to bear across'. The idea of 'carrying across' is seen at work in *The Tempest* in both its literal and figurative connotations. At a more literal level, the characters, as well as the audience, are carried from their familiar surroundings and placed in an enchanted world, while at a figurative plane this carrying across is being done in various social, linguistic, even aesthetic spheres. The codes of language, dress and names become the means of eschewing the well-defined markers of a familiar society and to enter the unvisited territory of an estranged world. My attempt in this paper is to explore the trope of translation as it operates in these various spheres in Shakespeare's *The Tempest*.

The theme of translation comes into play from the very outset of the action. The play opens in the midst of a raging tempest, with the ship and its passengers tossing on the turbulent sea.

A tempestuous noise of thunder and lightning heard; enter a Shipmaster *and a* Boatswain.

Interestingly, the very opening lines are given to the Boatswain and the Master of the ship. A boatswain is the officer who is in charge of the ship's sails, rigging and anchors, and who directs other mariners in such matters. As Mahood explains, the Boatswain dominates the play's opening scene 'by his professionalism in translating the

Master's signals into commands and ensuring these are carried out rapidly'. Thus, we see the Boatswain acting as an oral bridge between command and its enactment, bearing in himself the capacity to turn thought into action, word into deed, and, perhaps, even the 'thousand furlongs of sea' into an 'acre of barren land' (I 65). Yet, regardless of what the Boatswain might stand for at this time, the royal passengers aboard the ship still view him in his social colouring, clinging to that smug superstition which sees his hanging as sufficient assurance for their safe passage. Superstition becomes the last remnant of blind faith which remains precariously poised between the euphemism of a providential order and the whimsicality of the ungovernable sea. So little respect does the tempestuous storm have for traditional hierarchies that the Boatswain chides the courtiers for their constant interruptions with the wry reminder, 'What cares these roarers for the name of the king?' Roaring connotes misrule and rebellion, and becomes the defiant voice of the elements that topple the prescribed code of a hierarchical order. It is in direct reversal to Gonzalo's later sample of decorous compliment to Alonso: 'It is foul weather in us all, good sir, / When you are cloudy' (II i 143-44). For Gonzalo, the very name of the king controls the roaring elements, but the world of *The Tempest* is one which, like the heath in *King Lear*, has escaped from the confines of birth and rank. Braving the storm on the deserted heath with the Fool and Poor Tom, Lear is translated from his royal self to enter the 'houseless poverty' of his humble partners.

> Take physic, pomp,
> Expose thyself to feel what wretches feel,
> That thou mayst shake the super flux to them,
> And show the heavens more just.
>
> (III iv 33-36)

` While Lear experiences the translation that leads him to feel 'what wretches feel', Gonzalo and the royal party still fail to recognize that they have been transported to an island in which all hallmarks of civilized society are suspended to give way to a metamorphosed condition.

The island's capacity to both translate and to be translated becomes visible from the moment the marooned seafarers start viewing themselves in their unfamiliar surroundings. In spite of their rough sea-voyage, their clothes are still as bright and new as when they had first put them on at Claribel's wedding. The freshness of their garments, like Faustus' students 'all bravely clad' in silk, sketch the dimensions of a fairyland, where the sharpness of the visual effects stands for the 'vouched rarity' of this surrealistic world. While the aesthete of Faustus' Germany, all walled with brass, requires the magic of Mephistophilis for its realization, Shakespeare's wonderland is created within the very precincts of the theatre. Shakespeare's theatre, appropriately called the Globe, gave its spectators that freedom of translation that allowed them to traverse the length and breadth of the newly discovered world. Thus when Miranda says after watching the shipwreck, 'I have suffered / with those I saw suffer' (I ii 6), she is hinting at the very process of individual identification upon which the magic of the theatre stands. The same individual acts of translation are visible in the way in which the island is deciphered by the characters in widely varying ways. On the one hand, the 'island seem[s] to be desert' (II i 37), while on the other, it is of 'subtle, tender and delicate temperance' (II i 44).

> Adrian: The air breathes upon us here most sweetly.

Sebastian: As if it had lungs, and rotten ones.
Antonio: Or, as 'twere perfumed by a fen.
Gonzalo: Here is everything advantageous to life.
Antonio: True, save means to live.
Sebastian: Of that there's none, or little.
Gonzalo: How lush and lusty the grass looks! How green!
Antonio: The ground indeed is tawny.

(II i 49-56)

These diametrically opposed descriptions of the same island show that the same image can evoke widely differing responses, combining within itself the attributes of both a Utopian haven and a Dystopian elsewhere. This duality is more concretely spelled out by Fletcher in *The Sea Voyage*, where the Island is actually divided into two parts, the one fertile and green, while the other desert-like and barren. It shows the amorphous quality of the process of translation within the aesthetic framework, where the willing suspension is not only of disbelief but also of all those corporal barriers that chain the spirit to its mundane terrestriality. Something of the rich ambivalence of these processes of translation is also illustrated in Montaigne's essay 'Of the Cannibals', which provides a subtext for Shakespeare's play: 'What truth is that which these Mountains bound, and is a lie in the World beyond them?' It is this 'world beyond' to which Shakespeare and his contemporaries would return time and again, both in the subject matter of their plays and in the very experience of the theatre. Whether this world beyond is 'a wood near Athens' or 'the stately tents of war', the brassed walls of Germany, or simply 'an island', it is always conceived as a kind of epistemological or moral antipodes, in which the supposed absolutes of European civilization are exposed as mere accidents of language and location (Neill, 402).

If the physical interpretations of the island show the individual transport to a world of complete suspension, the same goes for the more sophisticated translations to which the denizens of the island are subjected by Prospero's language. Foremost among these translated beings is the figure of Caliban, who, like the island, needs to be linguistically redefined in order to merit a semantic credibility. Before the arrival of Prospero and Marinda, the island was said to have been language-less. Like those Arawaks who, Columbus proclaimed, must learn to speak under Spanish tutelage, Caliban, whose brutish gabble supposedly barred him from knowledge of his own meaning, has been 'made to speak' by Miranda.

I pitied thee,
Took pains to make thee speak, taught thee each hour
One thing or other. When thou didst not, savage,
Know thine own meaning, but wouldst gabble like
A thing most brutish, I endowed thy purposes
With words that made them known.

(I ii 354-59)

It is as if Caliban needed the intervention of his enslavers to translate him to himself; as if it is not they who are out of place, but he; not they who have been 'carried across' to this strange world, but he who has needed rescue from the isolation of his primitive self-estrangement. This linguistic translatability shows the colonizer's belief that the colonized only requires the transforming touch of his master's language to spring into meaning: 'This isle is mute without me', as Prospero disdainfully puts it in Aime Cesaire's satiric postcolonial reworking of *The Tempest.*

The physical translation that brings the European colonizer to foreign shores entails a further translation through which the savage Caliban is brought into the civil fold of Prospero's language. Caliban's identity is always presented to us in its translated version, a transition that contains the metaphor of his constant crossing over to the space of the Other. As Eric Cheyfitz comments, 'The imperialist mission', he writes, 'is [essentially] one of translation: the translation of the 'other' into the terms of the empire'.Not only is the attempt at linguistic communication a way to translate the Other in terms of the imperial code, but also to gain inroads into the knowledge map of this indigenous entity. By making Caliban communicate with him, Prospero has made him reveal the secrets of the island, the very knowledge that Caliban promises to impart to Stephano and Trinculo in exchange for his freedom from Prospero's thralldom. Thus, it is in the linguistic sphere that the colonizer first conducts his exploitation of the indigenous population, which gradually extends to the complete usurpation of the natural resources of the land, as Caliban laments:

> This island's mine by Sycorax, my mother,
> Which thou tak'st from me. When thou cam'st first
> Thou strok'st me and made much of me; wouldst give me
> Water with berries in't, and teach me how
> To name the bigger light and how the less
> That burn by day and night. And then I loved thee
> And showed thee all the qualities o'th' isle:
> The fresh springs, brine pits, barren place and fertile.
> Cursed be I that did so!
>
> (I ii 333-40)

After losing all he had to offer, Caliban is left with only the capacity to curse: 'You taught me language, and my profit on't / Is I know how to curse'. The very language that Prospero had used to translate Caliban, and through him the island, to his own linguistic sphere, now serves to voice Caliban's exploitation at his hands. Cursing not only becomes a verbal invective, but defines the very ends towards which the 'civilizing process' of the European colonizer had been paradoxically directed. The language lessons that prelude all colonial designs contain seeds of a linguistic consciousness which flowers forth in the form of the verbal dissent to which Caliban gives vent. Cursing becomes the only form of speech into which the experience of colonial exploitation can amply be translated, as when Shylock asserts: 'If a Christian wrong a Jew, what should his sufferance be by Christian example? – why revenge! The villainy you teach me I will execute, and it shall go hard but I will better the instruction' (III. i. 63-66), or when Barabus laments: 'Vex'd and tormented runs poor Barabus / With fatal curses towards these Christians' (II. i. 5-6). The invective that is used both for and by the figures of Shylock and Barabus leads them to a defiant

acceptance, even affirmation, of the monstrosity to which their colonial exploiters had consigned them: 'Thou call'dst me dog before thou hadst a cause, / But since I am a dog, beware my fangs' (III 6-7). Cursing becomes not just the ends but the very medium of translation, the code for recording the ultimate harvest of the imperial enterprise. Like Shylock and Barabus, Caliban too has reaped a 'profit' that can only be translated in a series of curses.

The metaphor of translation is not only present in the language that is taught to Caliban, but is also visible in his very character. As a subject who has been usurped of his rightful land, as a savage who has been exploited of its innocence, and as a barbarian poised between monstrosity and humanity, Caliban represents the colonized Other, whose identity is distorted in the translating vision of the colonizer's gaze. Perhaps the most poignant moment of translation comes in the scene in which Stephano sees Trinculo shivering under Caliban's gabardine, and construes Caliban's identity by the impression of the gabardine's folds. The visual image here is of a mutated animality which owes its effect to merely an optical illusion: 'This is some monster of the isle, with four legs, who hath got, as I take it, an ague' (II 64-5). Thus the gabardine here literally serves as a mask which not only effaces the body underneath but also creates an entirely new image for it. For Stephano and Trinculo, the meaninglessness of Caliban's biological dimensions is deciphered from the senselessness of his accoutrement. They, thus, assign to Caliban an intensely rudimentary form existence, where the contents of his identity are determined merely by the contours of his form. The same difficulty to translate is faced by Bottom in *A Midsummer Night's Dream* as he tries to describe his dream in the linguistic medium:

> I have had a most rare vision. I have had a dream, past the wit of man to say what dream it was. Man is but an ass, if he go about to expound his dream. Methought it was—there is no man can tell what. Methought I was—and methought I had—but man is but a patched fool, if he will offer to say what methought I had. The eye of man hath not heard, the ear of man hath not seen, man's hand is not able to taste, his tongue to conceive, nor his heart to report, what my dream was.
>
> (IV i 203-12)

Like Caliban's misrepresenting clothes that fail to voice the reality of his body, Bottom's insufficient language falls short of describing an experience that does not readily yield itself to translation. In fact Bottom is here attempting to translate a 'translation', the term Quince uses upon encountering his metamorphosed friend: 'Bless thee, Bottom, bless thee! Thou art translated' (III i 113). For Bottom, it is easier to be translated than to translate, especially when the matter he seeks to describe is one that does not lend itself to any form of articulation. In a less comic context, this inability to articulate becomes the matter of discussion between Hamlet and his mother, when she tells him to 'cast thy nighted colour off', and asks why his father's death 'seems' so particular to him.

> Hamlet. Seems, madam? Nay, it is. I know not 'seems'.
> 'Tis not alone my inky cloak, good mother,
> Nor customary suits of solemn black,
> Nor windy suspiration of forc'd breath,
> No, nor the fruitful river in the eye,

Nor the dejected haviour of the visage,
Together with all forms, moods, shapes of grief,
That can denote me truly. These indeed seem,
For they are actions that a man might play;
But I have that within which passes show,
These but the trappings and suits of woe.

(I. ii. 76-86)

Hamlet's 'inky cloak' only highlights its incapacity to translate the anguish of his bereavement. So insignificant do clothes become for him that he literally casts aside all the prescribed codes of appearance when he comes to meet Ophelia in his disheveled manner: "Lord Hamlet, with his doublet all unbrac'd, / No hat upon his head, his stockings foul'd, / Ungarter'd and down-gyved to his ankle, / Pale as his shirt" (II. i. 78-81). Unable to fathom the depth of Hamlet's passion, Ophelia falls prey to the misleading impression of his garments and frankly admits: 'My lord, I do not know'. It is this very encroachment of costume upon the wearer that Hamlet rejects, since his is a state that defies all description. Thus, it is not the body that is denuded by the insufficient clothing, but the dress itself which falls short of capturing the reality underneath. What Hamlet rejects is not only the misleading drapery that literally 'folds' the reality of his form, but the fact that dress itself acquires a representative power which stifles the intensity of the passion 'within'. Like Lear's discovery that 'robes and furr'd gowns hide *all*' [italics mine], Hamlet's inky cloak can only stand as an obstruction to every aspect of his inner reality.

The lack of representation that is present in dressing is also found in the insufficiency of the naming code. Names, the signifiers that are arbitrarily joined to the signified, stand as a paradigm for costume which fabricates a new meaning for the wearer. It is through his own scope of nomenclature that Prospero assigns to both the island and its inhabitants a code of names that apparently translates them from their earlier anonymity. By Prospero's act of naming, Caliban has not only been assigned an active identity, but has also been tailored out to fit his name, just as the newly mapped Irish landscape of Brian Friel's *Translations* is altered by the surveyor's Name-Book. Even after his oppressor's departure, Caliban will have to live in a translated world, like Friel's Hugh Mor O'Donnell: 'We must learn those new names…. We must learn where we live. We must learn to make them our own. We must make them our new home'. For Caliban, it seems that the trappings of Prospero's nomenclature might never amount to anything more than the borrowed frippery, the 'glistering apparel' that hangs seductively on Prospero's 'line'.

The resentment that Caliban feels in being addressed in such pejorative terms is spelled out more explicitly in Aime Cesaire's *A Tempest,* where Caliban simply refuses to answer to his name: 'I've decided I don't want to be called Caliban any longer…. Because Caliban isn't my name … It's the name given me by hatred, and every time it's spoken it's an insult'. He further declares that the very absence of a rightful name has made him accept an empty signifier for his title: 'Call me X. That would be best. Like a man without a name. Or, to be more precise, a man whose name has been *stolen*' (p. 18). Thus, like Juliet's desire for Romeo to 'doff thy name' (II 47), Caliban too wants to slip out of his allotted label that constantly acts as a reminder of his denigration. With its close phonetic resemblance with 'cannibal' and its similarity to 'Kali', the Hindu goddess of destructive and preservative forces, the name 'Caliban' clearly resonates with primordial undercurrents. Name, whether it is of the ill-defined Caliban,

or of the well-placed Prince of Denmark, fails to translate the truth of its bearer. It is for this reason that, in the graveyard scene, Hamlet announces himself as: 'This is I, / Hamlet the Dane', a direct reversal of Caliban's attempt to minimize his title: 'Ban' ban' Ca-caliban, / Has a new master, get a new man' (II. ii. 179-80). Where Hamlet needs to cement his personal identity with his Danish lineage, Caliban deconstructs his name in the notes of a self-referential jingle. The element of self-referential translation comes clearly to the fore towards the close of the play, especially in the final return of Prospero and his European party from the exile of the foreign shores back to their familiar abode. It is in Prospero's magic that both the characters and the audience had translated themselves from their familiar surroundings, and now it is in the ultimate desire to overthrow all charms that both have to be returned to their original selves. Like most of Shakespeare's romantic comedies, the close of *The Tempest* too shows a return to the normal state of affairs, just as the fall of the curtain retrieves the audience back to its everyday affairs.

Only in the case of *The Tempest*, Shakespeare's last play, the return is manifold, showing the return not only of Prospero to his Milanese dukedom, and of the audience to their theatre, but also of the author to a life of retirement from active playwriting. The analogy between corporeal transformations and the translations wrought by the theatre that runs throughout the play is foregrounded in the epilogue that makes Prospero's crossing back to Italy a paradigm for the actor's return from his 'translated' condition, and a metaphor for the dramatist's own retreat to the bourgeois solidities of his Stratford life. In George C. Wolfe's production for the New York Shakespeare Festival, Patrick Stewart gave up the microphone he had used throughout the outdoor performance and addressed the audience without the aid of amplification (Vaughan, p. 285). It shows the relinquishing of the ducal trappings and a return to a state where, without the aid of his magical garments and the enchantment of the theatre, the speaker emerges as a common human being, dependent upon the clapping hands of the audience to free him from the estrangement of his exile: 'But release me from my bands / With the help of your good hands'. The sound of the clapping hands, traditionally associated with the breaking of a magical spell, now serves to end the charm from which Prospero, and by extension, Shakespeare, seeks release.

Work Cited

Cesaire, Aime. *A Tempest*, trans. Richard Miller, Ubu Repertory Theatre Publications, USA. 1969

Friel, Brian. *Translations*, Faber, London. 1981

Marlowe, Christopher. *Dr. Faustus, The Complete Plays*, Penguin Books Ltd. Harmondsworth. England, 1972

Marlowe, Christopher. *The Jew of Malta, The Complete Plays*, Penguin Books Ltd. Harmondsworth. England, 1972

Shakespeare, William. *A Midsummer Night's Dream*, ed. Peter Holland, Clarendon Press, Oxford. 1994

Shakespeare, William. *Hamlet*, The Arden Shakespeare, Methuen, London and New York. 1982

Shakespeare, William. *King Lear*, The Annotated Shakespeare, Yale University Press, New Haven and London, 2007

Shakespeare, William. *Macbeth*, Cambridge University Press, UK. 1967

Shakespeare, William. *Romeo and Juliet*, Cambridge University Press, 1961

Shakespeare, William. *The Merchant of Venice*. The Arden Shakespeare, edited by John Russel Brown. Methuen and Co. Ltd. London, 1955

Shakespeare, William. *The Tempest*, The Arden Shakespeare, ed. Virginia Mason Vaughan and Alden T. Vaughan. ITP, England. 1999

References

Cheyfitz, Eric. *The Poetics of Imperialism: Translation and Colonization from The Tempest to Tarzan*, Oxford University Press, 1991

Greenblatt, Stephen. *Learning to Curse: Essays in Early Modern Culture*, Routledge, New York. 1990

Lamming, George. *The Pleasures of Exile*, Michael Joseph Ltd. London, 1960

Loomba, Ania. *Shakespeare, Race and Colonialism*, Oxford University Press, 2002

Mahood, M. M. *Bit parts in Shakespeare's Plays*, Cambridge, 1992

Neill, Michael. *Putting History to the Question*, Columbia University Press, New York, 2000

Ngugi, Wa Thiongo. *Decolonizing the Mind: The Politics of Language in African Literature*. Zimbabwe Publishing House, Harare, 1986

Vaughan, Mason and Alden T. Vaughan, Introduction to Shakespeare's *The Tempest*, The Arden Shakespeare. ITP, England. 1999

Developments in Distance Education at Higher Level

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Abstract

The developments in the fast growing technological industry have influenced nearly all areas of life. Distance education has also been influenced by such developments. At one side it has provided increased opportunities to the distance learners while on the other side the challenges for the educationists have also been increased. The developments of distance education have been also done due to rapidly changing market conditions and trends. There are many developments occurred at higher education level all over the world. These developments include FM radio transmissions, pre- produced video programs, movie clips, video conferencing, computer assisted instruction, computer instructional design, computer managed instruction, and computer mediated education, learning management systems and online education. Due to such developments, the provision of learning opportunities has been increased without increasing the budget. The quality of distance education at higher level has also been improved with the help of such developments.

Key words: Distance Education, Developments, Higher level, technology, instructional design

Introduction

Distance education is a "structured learning "wherein the teachers and students are separated by time and space. Few years back, it was considered as "nontraditional". But now in the current century, it is becoming as important to traditional and formal education. It is also being included in the mainstream education. The conventional definition of distance learning is "any educational or learning process or system in which the teacher and instructor are separated geographically or in time from his or her students; or in which students are separated from other students or educational resources". The California Distance Learning Project (1997) developed the following definition:

> "Distance Learning (DL) is an instructional delivery system that connects learners with educational resources. DL provides educational access to learners not enrolled in educational institutions and can augment the learning opportunities of current students. The implementation of DL is a process that uses available resources and will evolve to incorporate emerging technologies."

The initial mode of communication process has been modified to a great extent from postal correspondence to wide variety of advanced tools such as internet. Especially in the last decade there has been tremendous expansion of distance education all over the world. Due to drastic expansion, the interest of individuals in this specific type of teaching and learning has been increased. Several experiments have been conducted in this mode of learning. For a long period, the formal universities did not pay attention to this specific form of teaching and learning but now the traditional formal universities have started offerings of many educational programs through distance education mode (Peters, 2010).

Distance education is providing education to the masses at larger scale. Due to the attraction of this mode of education, several universities have been developed in many countries around the globe. Millions of students

have been attracted and accommodated in the universities of such countries and increased higher education considerably. According to Bates (1997,p. 93) as quoted by Peters (2010), "While the establishment of the Open University initially made little impact upon established universities and colleges, most of whom were quite happy to ignore it, this time technological change is striking at the very heart of conventional schools, colleges and universities. Indeed, many find it reasonable not only to develop electronic forms of distance learning, but also to establish new divisions for distance education". Bates, (2001) emphasized, "These divisions also have the potential to become e-universities" (p. 32). There is increase in the publications related to the innovations, trends, issues, and problems of distance education are increasing day by day. Open universities have set a trend of distance education and are now progressing "from the margins to the center stage of higher education (Guri-Rosenblit, 1999a, p. 281)". Now a days, distance learning is being used in many contexts such as blended learning, hybrid learning etc. in blended learning the learners participate in a distance class and regular class parallel. Similarly in hybrid learning, distance learning enhances classroom instruction.

Developments in Distance Education

According to Moore, Deane, Galyen (2011), as quoted by Spector, Merrill, Merrienboer& Driscoll (2008) stated that the history of distance education is spread almost up to two centuries. However, during the last four decades, the concept of distance education has emerged to a great extent. During this time, significant developments have been done regarding learning and communication. McIsaac and Gunawardena (1996) have described several forms of theoretical developments which have influenced distance education such as the Industrial Model of Distance Education, Guided Didactic Conversation, Independence and Autonomy, Transactional Distance, Control, Interaction, Socio cultural Context and Social Presence. In the field of education, "distance education" is the first "radical pedagogical change". According to peters "this is not a singular and isolated occurrence caused simply by the employment of new technology, but the continuation of a revolutionary process, which started as early as at the first half of the nineteenth century" (Peters, P.43). By that time, the industrial production model of distance education was presented by Otto Peters (1971, 1983). He stated that "the teaching-learning was combined with the strategies and technical devices of the industrial production". It was the "first radical pedagogical change" and the beginning of the "correspondence education".

The correspondence education was developed gradually during 1850 to 1970. In many countries, public and private sector made gradual developments on the different educational levels and disciplines ranging from primary to tertiary and even on continuing education level. It has not only replaced but also enhanced the learning of individuals learned in traditional schools. The individual learners were provided the postal tuition and the printed material. The industrial methods such as purposeful thinking, organizing, producing, distributing and communicating were applied to the correspondence education. The printed or written paper was duplicated mechanically; mass-produced, posted and two-way communication for correspondence was organized. It has replaced oral communication by providing asynchronous mediated communication. The objectives were to increase enrolment rate to a large extent and to generate profit by selling learning material. The early correspondence education was a different kind of radical conceptual change as compared to the traditional teaching and learning. The new pedagogical methods of correspondence education were an alternative to the conventional face-to-face

teaching and learning. This new pedagogical concept has eliminated space-time boundaries for learning by providing education to dispersed students. Modesto and Tau has described the characteristics of corresponding education:

"Correspondence education is normally organized through the post

• Correspondence education does not have the benefits of audio, video, and computer-based

Technologies

• There is limited scope for meetings between tutors and students in correspondence education"

New teaching and learning approaches were established as a result of these changes. The founders of correspondence education wanted to design and implement a new system of learning at higher education. This novice concept of distance education has provided a stable foundation for further new forms of distance education.

The correspondence education continuously developed during 1970s and 1980s. There was a significant change and transformation in the organization of correspondence education due to media in several ways. The new powerful media and new philosophy played a major role in its development. Distance education was boosted and its status was improved with the growth of commercial distance teaching institutions. The also brought a radical change in the teaching at a distance. That is the reason that during this period, this form of education was renamed as "distance education". It was the second main conceptual change. The formal universities had started establishing new units for distance education at their campuses. Such universities are known as 'dual mode universities'. There is other kind of university known as 'single-mode distance teaching university', an exclusively new concept of great significance.

According to UNESCO "The success and expansion of single mode open universities on the one hand, and the transformation of traditional universities to dual mode universities on the other, are important contributions to the diversification and development of higher education systems"(UNESCO,p-36). From the mid of the 1990s, there was a third fundamental change in the distance education. According to Gunawardena and McIsaac (1996), "the field of distance education has changed dramatically in the past ten years." Universities are becoming vital important and need for more universities is increasing. The "culture of real virtual reality" changed the communication process (Castells, 2001, p. 375). It was also attributed to innovative developments of "advanced industrialization" mainly the emergence of information and communication technology (ICTs). Digital information and communication technology (ICT) has influenced everything including distance education in this era. The advents of the Internet and the World Wide Web have not merely transformed our ways of living and working, but also the ways in which we teach and learn. The nature of distance education has been changed whereas its scope has been enlarged by certain concepts such as hybrid learning, networked learning, flexible earning, and connected learning spaces. In this era several innovative and unique concepts of online learning are being framed.

The pedagogical possibilities, values and quality of distance education have been improved by integrating these technologies. This third phase is named as "digitalized education" because in this third phase, the virtual education becomes a trend all over the world.

According to UNESCO (2002), "The emergence of new forms of distance learning based on new information and communication technologies; in particular those supported by the Internet and using the World Wide Web, have significant pedagogical, economic and organizational implications." (P-10)

Bates (2008) as quoted by Peters, "One rationale for e-learning is that it is not only a product of a knowledge-based economy, but also a means by which to develop appropriately skilled workers for a knowledge based economy (p. 230)." The availability and variety of new technical media such as multiple media, audio-video cassettes, radio and television broadcasting, self-teaching courses, satellite and video conferencing have influenced the distance education. According to Stevens (2010), the structures, organization and process of teaching and learning have been revolutionized by the Internet, personal computers, information and communication technology (ICT), e-learning, virtual learning networks and the media. These changes have led to a conceptual shift from the traditional perspective of schools as closed, autonomous organizations that served specific communities to open, collaborative sites within teaching and learning networks that cross political and geographical boundaries as well as time zones".

In order to enhance traditional correspondence education, the several media such as print, radio, video and television were jointed as essential components of teaching and learning. Multimedia teaching and learning is being utilized along with audio, video cassettes, telephone computers, experimental kits and facsimile. Student's support has high priority and is organized centrally. Other developed strategies such as system approach and goal oriented systematic action are adopted. It is obvious that digitalized education has provided a bold reformatory approach and influential innovations.

These three phases brought conceptual changes in the development of distance education at higher level. For more than hundred years-e till 1960s, the correspondence education was remained unknown and ignored. Whereas, due to mass media television and radio, distance education became more popular among numerous educational experts. In the third phase, digitalized education was acknowledged by majority of the specialists coming from cooperate sectors and different academic disciplines.

According to UNESCO (2002),

> "There are more distance learning courses offered at the tertiary level than at any other. This has been the case since the invention of the distance education method near the end of the nineteenth century when the use of new technology made it possible to deliver higher education beyond the boundaries of the campus, especially in such new and large nations as the United States, Canada, Australia, South Africa, and Russia. In turn these countries led the way in the use of radio for university level teaching, then television, and today the Internet. In these nations the preferred organizational form was, and remains, the dual mode university" (p-35).

According to the Institute of Higher Education Policy (2000), a survey was conducted in United Nations during 1997-98 and it estimated that the enrolled students in distance education courses were more than1.6 million. The findings of the study revealed that:

> "This was an extraordinary growth of technology-mediated distance learning in higher education which had prompted several different organizations to develop principles, guidelines, or benchmarks to ensure quality distance education. The quality assurance benchmarks promoted by these organizations are designed to apply to a wide variety of institutional contexts and consist of fairly broad statements. Virtually all of the strategies include such topics as course development, faculty training, student services, learning resources,

infrastructure, and outcomes assessment. These benchmarks, which were developed initially for all types of distance learning, have existed in various forms for a number of years".

Several open universities have turned into mega-universities without increasing much budged and hence increased enrolment more than 100,000 students. Due to distance education, new groups of students have been emerged. According to Evan (1997), this group of students is "diverse, heterogeneous and changing body of people (p. 123)".They belong to number of different social, regional and ethnic cultures. Hence it is challenging to distinguish them in general terms. As distance education is flexible and conducive and has attained a first noteworthy revolution in the reform of higher education therefore it is fulfilling the educational needs of distance education learners. E- Textbooks (electronic textbooks) and open education resources have reduce the costs students' fee. With the growth of online instruction, use of hybrid, blended, Web-based (web-assisted, web-facilitated and Web-enhanced) classes also continues. The learning management systems (LMS) are also in practice now a days in distance education. Distance education greatly depends on communications technologies as medium of delivery. These are helpful to facilitate the distance learning students by increasing student–teacher interaction and providing necessary feedback to the students. Researches reflect that for the growth of distance education, the technologies have become very essential for delivery systems.

According to Heeger (2007),

> "Technology has always driven change in distance learning. If "distance learning" is broadly defined as a process in which teaching transcends geography, it stands to reason that the medium by which content is communicated to the student would shape the organization of the content and define the interactions with the student (p-5)".

Open learning model, group study model, interactive radio instruction, instructional television are also examples of the developments of distance education at higher level. With the technological advancements, communication with students becomes very easy. Alford and Lawson (2009), has described two kinds of communication in online courses i-e synchronous or asynchronous. The "synchronous communication" takes place in "real-time," or at the same time. The student will be online at the same time as his/her peer/s and interact and communicate with them synchronously such as instant messages and chat. Whereas, "asynchronous communication" takes place over time. It does not require group members to be online simultaneously. For example, Email, discussion forums, and bulletin boards and blogs are frequently used in online courses. Asynchronous communication tools help to browse, read, and respond at learner's own pace.

According to Moore as quoted by Heeger (2007), in distance education, the pedagogical emphasis is on the structured lessons in order to guide the demographically distributed students in each mode of communication used such as radio , television, newspaper, e-mail, conferencing (audio, video, satellite) and other web–based systems. Although, distance learning students may be studying at different locations, even then they are not isolated. They can contact frequently to their "study groups" and "learning communities". Gunawardena and Mcisaac have described some evaluations in distance education. some of them are: print media, Broadcast Television and Radio, Cable Television, Interactive Instructional Television, Recorded Audio and Video Media, Teleconferencing, Audio graphics Conferencing, Teleconferencing (Audio, Video, Full-Motion, desktop) and Integrated Services Digital

Network (ISDN). Most of the distance learning universities heavily relay on the above mentioned technologies. Moreover, mostly other universities are using newer technologies such as Computers and Learning, Laptop Computers, Personal Digital Assistants (PDAs), CD-ROM, Computer-Mediated Communication (CMC), Electronic Networks, Wireless Networks, Computer Conferencing, Virtual Reality

Conclusion

Distance education has improved a lot due to three major phase changes-e correspondence education, distance education and digitalized education. It has a great potential for providing solution of the educational problems in all times. With the creation of correspondence education, distance education and digitalized learning, there has been a radical change in the social and cultural practice of face-to face teaching and learning. These new formats of distance education also demand a basic change over from traditional pedagogical strategies, approaches and patterns. These formats of teaching and learning are "radically different" not merely with regard to its mode, media and methods but also to their general educational goals along with their specific clientele. As a result of such changes, an extraordinary change of concept of knowledge, curricula, values, and attitudes has been occurred. Therefore it can be inferred that distance education is certainly the triumph of a significant revolutionary process.

References

Alford P., Lawson. A. (September 2009), Distance Education Student Primer: Skills for Being a Successful Online Learner

Anzalone S. (2002), Distance Education: An Option for Increasing Access and Improving Quality in Secondary Education, American Institutes for Research in collaboration with The Academy for Educational Development Education Development Center, Inc. Juárez and Associates, Inc. The University of Pittsburgh

Bates, A. W. (1997). Restructuring the University for Technological Change. Conference Paper. The Carnegie Foundation for the Advancement of Teaching. London, 18–20June 1997.

Bates, A. W. (2001). The continuing evolution of ICT capacity: Its implications for education. In G. Farrell (Ed.) the changing faces of virtual education (pp. 29–45).Vancouver: The Commonwealth of Learning. Retrieved March 12, 2002 fromhttp://www.col.org/virtualed/

Castells, M. (2000). The rise of the network society, second edition. Hoboken, U.S.: Blackwell Publishing.

Distance Education Survey Results, Trends in E-Learning: Tracking the Impact of E- Learning at Community Colleges (2013), Instructional Technology Council

Heeger G.A (2007). A Close Look at Distance Learning, U.S. Distance Learning Association, Vol: 1, Issue 1

Guri-Rosenblit, S. (1999). Distance and Campus Universities: Tensions and Interactions. A Comparative Study of Five Countries. Oxford, UK: Pergamon.

Kogan Page. Modesto .S. T &Tau D.R, v i r t u a l u n i v e r s i t y for the Small States of the Commonwealth, Introducing Distance Education

Moore J.L, Deane C.D, and Galyen .K (2011), e-Learning, online learning, and distance learning environments: Are they the same? Internet and Higher Education 14 (2011) 129–135, Elsevier Inc.

Peters O., (2010), Distance Education in Transition Developments and Issues 5th edition, Carl von Ossietzky University of Oldenburg, Center for Lifelong Learning (C3L). Publisher: BIS, ISBN 978-3-8142-2201-1

Quality on the line benchmarks for success in internet-based distance education (2000), prepared by The Institute for Higher Education Policy, National Education Association Washington DC.

Spector, J. M., Merrill, M. D., Merrienboer, J. V., & Driscoll, M. P. (2008). Handbook of research on educational Communications and technology (3rd ed.). New York, London: Lawrence Erlbaum Associates

Stevens K. (2010). The Use of Media in Teacher Education through Open and Distance Learning by, Teacher Education through Open and Distance Learning Patrick Alan Danaher and Abdurrahman Umar, Editors, common wealth of learning, perspectives on distance education

UNESCO (2002), Open and Distance Learning: Trends, Policy and Strategy Considerations

What is distance education (2014), California distance learning Project (CDLP) retrieved from: http://www.cdlponline.org/index.cfm?fuseaction=whatis&pg=2

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