Print ISSN: 2790-4563
Online ISSN:2790-4571

Archives of Educational Studies

VoL 2, No. 1, 2022

ARES

A Bi-annual International Research Journal

Department of Educational Studies
University of Okara, Pakistan

Archives of Educational Studies (ARES) is published by:
Department of Educational Studies
University of Okara, 2-km Multan Road, Renala Khurd Bypass, Okara, Pakistan
E-mail: editor@ares.pk, Website: https://ares.pk/, Phone: +92 335 7570 450

Online ISSN: 2790-4571
Print ISSN: 2790-4563

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(ARES)

Vol. 2, No. 1, June 2022

A Bi-annual HEC Recognized International Research Journal

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2-Km Multlan Road, Renala Bypass, Okara, 56300

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Preface

Department of Educational Studies was established under the Faculty of Education with the approval of the Academic Council of the University of Okara in its 7th meeting held on June 18, 2020. More than 350 students are currently enrolled in the department, which has national, international visiting, and regular faculty committed to expanding students' capacity through quality education, research, and training.

The department provides students with the opportunities to learn about a broad range of courses in the discipline of education in relevance to the national and international trends that may promote critical thinking among the students allowing them to produce innovative knowledge and gain skills in teaching, researching, and educating the people so that they can become a responsible, valuable and productive citizen. The students are encouraged to draw on interdisciplinary methods of critical analysis to bring a positive change in society.

Aligned with the vision of the department, the bi-annual research journal ***Archives of Educational Studies (ARES)*** aims to provide research findings and promote scholarship in various fields of educational studies such as educational practices, examinations of new procedures, cross-cultural education, education development, education policy, educational evaluation, educational leadership, educational psychology, educational technology, gender and education, urban education, literacy, research methodology, sociology of education, and other areas of education. It is the first HEC-recognized international journal of the University of Okara published in print and online versions.

I would highly appreciate the efforts of the Vice Chancellor of the University of Okara, Prof. Dr. Muhammad Wajid, who always appreciated generating innovative ideas and providing various forums to execute and disseminate research. The production of this journal was not possible without their support and appreciation. We look forward to our readers for their feedback to further improve and increase the circulation of this journal among the national and international scholarly communities.

Editor

Contents

Archives of Educational Studies
Volume 2, No. 1, 2022, 01-18
https://ares.pk/

Slaying Corruption for Effective Educational Management: A Clinical Insight

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Abstract

The major challenge confronting educational management is the problem of maladministration and mismanagement of the education sector. Specifically, this study investigated the extent corruption affected the management of education in Enugu State at the secondary level. The study adopted systems theory as its theoretical construct. Adopting survey research method; structured questionnaire was used to gather primary data needed for this research and textbooks, journals, unpublished works were incorporated and referenced as secondary sources. Out of a population of 362 tutorial staff of selected public secondary schools in Enugu State, 155 participants were data producing sample. Finding was that corruption affected the management of education in Enugu State at the secondary level to a great extent. The implication of this study is that if the Commissioner for Education in the State does not consider exterminating critical corrupt practices that have hampered effective educational management and administration in the State by motivating and supporting the educators and learners to pursue quality educational service delivery and academic excellence through effective management devoid all forms of corruption, the state's education sector will remain impotent in the area of human capital development. The study concluded that educational renaissance should be manifestly conceived and carried out within the state.

Keywords: *Corruption, Education, Educational Management, Human Capital, Systems Theory, Virus*

Introduction

This research titled, "Slaying corruption for effective educational management: A clinical insight," is a critical study of challenges surrounding the management of education in Enugu State, Nigeria at the secondary level through a quantitative method in search of clinical (practical) measures that would enhance effective educational management in the state's education sector and that of the general system, Nigeria. In the words of Arthur Miller, "It is wrong to remain in a situation you know is a mismatch for you." So, in order not to remain in the current human capital development mismatch occasioned by academic corruption, this study attempts to project a road map regarding the repositioning of the ailing educational system by unveiling current challenges and proffering appropriate remedial measures through the study's recommendations. This symbolizes the empirical significance of this research. Regarding the theoretical importance of this paper, it is the expectation of the author that this study will be an additional literature from the existing literatures that focused on academic fraud and educational management. Also, this study provides quintessential framework for navigating through the conceptual overview of terminologies under study.

Corruption is the major challenge/virus confronting Nigeria's education system and Enugu State in particular. This study examines the problem of corruption in educational management in Enugu State from a bureaucratic lens. Bureaucracy is, "an organization where rules are observed or followed rigidly and where there is hierarchical arrangement of authority (Chioke, 2012, p.83)." There is no doubt that education sector is a bureaucratic setting and as such; policy makers, policy implementers, and all stakeholders are required to follow rules rigidly in the discharge of their routine functions in a way that enhances the efficacy of the sector. Regrettably, corruption in almost all the states in Nigeria is ethnicised and thus, rules are frequently manoeuvred to favour relatives and cronies of the ruling and non-ruling elites. In short, "Bureaucratic organizations in Nigeria are largely and grossly inefficient (Chioke, 2017, p.11)." Given this trend, Arowolo (2022) believes that, the major challenge which the persistence of corruption poses to all Nigerian of integrity and conscience is on how to de-ethnicise corruption.

Emphatically, the gross bureaucratic inefficiency within the educational system is a result of corruption and it therefore calls for concerted efforts at salvaging education sector through empirical studies and solutions thereof. Collaboratively, Paul & Ofuebe (2020) in their study observed that those political and public office holders across administrations in Nigeria perceived corruption as a worthwhile venture despite the campaign against corruption. Thus, this must have given impetus to the problem of corruption in educational management within the scope of this current study. Pertinently, bureaucratic coordination devoid of corruption is among the distinctive marks of modern educational sector. Ethics demands that while following laid down rules, stakeholders in this sector are supposed to act in a detached rational manner and not in a biased manner by making academic policies, implementing them and conducting oneself in keeping with impersonal demands. Hence, formal rules and regulations as well as impersonal relationships encourage rational, effective and unbiased policies and attendant actions in all sectors and the educational sector inclusive. At this juncture, a look at the position of Kofi Annan is imperative. To him:

> Literacy is a bride from misery to hope. It is a tool for daily life in modern society. It is a bulwark against poverty, and a building block of development, an essential complement to investments in roads, dams, clinics and factories. Literacy is a platform for democratization, and a vehicle for the promotion of cultural and national identity.

Examining our educational sector, there appears to be absence of the foregoing features of development. Some scholars have attributed the absence of these indicators to alleged corruption in the system. Corroboratively, corruption in academic settings weakens economic development and perpetuates poverty levels and social inequalities (Stefan, 2017). A clear observation shows that Nigerian system of education has become bookish with the quest for paper qualification given undue, prominence with little or no attention paid to the development of attitude and behaviour of the learners (Nnamani & Oyibe, 2016). This is another factor that has contributed in paving the way for corruption in the management of education.

Statement of the Problem

Over the years, there seems to be noticeable prominence of maladministration and mismanagement of education in the state. Academic resources meant for the development of the society have been diverted for private purposes. Consequently, the problem of mismanagement of fund, diversion of fund for staff training, and inadequate release of running costs for education sector are perceived worrisome cankerworms affecting the administration and management of education in the country, especially Enugu state. In another parallax, there is manifest corruption in the procurement of teaching materials and thus, educators are forced to improvise. Using the above stated variables, the problem of this investigation is to study how corruption hampers the management of education in Enugu State public secondary schools. The question thrown up to guide the research was to what extent has corruption affected the management of education in Enugu State at the secondary level?

Conceptual Analysis

Corruption in the context of this study is a virus that has consumed the fabrics and rubrics of education system and other areas of human endeavor. Why? This is because corruption in the education sector has all the trappings of a virus in a living organism. It (virus) is hard to exterminate, because it is an intracellular obligate organism. As virus destroys the body system, corruption does same to an organisation. Corruption emanated from the Latin word, '*corruptus'* meaning 'to **destroy**.' Appropriately, "a practice or an action is labeled as corruption because of the destruction it causes to the moral, political or socio-economic being of the society (Tikumah, 2009)." Tambawal (2017) argues that, "corruption is also a behavior which deviates from the normal moral role that one is expected to display as a result of undue influence." Corruption has been observed to have:

> …in-built devastating and disabling potentials to infest and reconfigure the psyche of the individuals, the state and those entrusted with the day to day affairs of the state at its social, political, economic, religious, moral, educational and general development levels with **terrible viruses** that in addition

> undermining the advancement and sustainable development of the country, corruption impairs and cripples the zeal for honesty, hard work and merit students admission in tertiary institutions (Nwaokugha and Ezeugwu, 2017).

It is imperative to add that, poverty is a serious enigma that must be curtailed by the government as it triggers corruption. Therefore, any attempted fight against corruption must strategically and simultaneously imbibe anti-poverty strategies. At this point, we accept the following perspective as a working definition in this study:

> Academic corruption is corruption perpetrated by corrupt stakeholders in the education sector. This occurs in form of ghost teaching, maladministration, property tort such as conversion of teaching aids, sexual abuse of teenage/adult learners, favouritism in the allotment of grades/marks, misappropriation of fund, embezzlement, mismanagement of education funds and associated practices (Chioke, Agbodike and Nnaji, 2021, p.111).

Conclusively, corruption in this study encompasses all forms of malpractices in the managerial aspect of education. Thus, academic misconduct, academic fraud and academic dishonesty are corruptions evident in the management of education sector that inhibits the sector's development. Accordingly, quality education management must be one devoid of these nomenclatures.

Etymologically; the term, 'education' comes from a Latin word *'educare,'* meaning 'to lead out.' However, education has no generally acclaimed definition and as such researchers and writers approach the task of conceptualizing it from their different cultural inclinations cum individual perspective. Herein, education is the generic processes involved in instilling the societal values, assimilation of values and the resultant use of such values/knowledge to move from one social class to another and the use of the acquired knowledge to usher in sustainable development in the learner's society and other societies where such values have been assimilated and practiced. Therefore, education in the above sense is an agent of social mobility and social engineering.

Education is the aggregate of all the processes by which a child or adult develops the abilities, the attitudes and other forms of behaviour which are of positive value to the society in which he lives (Tambawal, 2013). From the foregoing perspective, it is clear that education is meant to create characters, abilities, attitudes and other **positive values** in man and the globe at large. However, it is pitiable to note that virtually all societies in this side of the globe are heavily fraught with the reverse, which is negative value. The education system here has done nothing or little to positively influence the nation's value system. It is important to note that, "Education in the broadest sense of the term is meant to aid the human being in his/her pursuit of wholeness. Wholeness here implies the harmonious development of all the potentialities God has given to a human person (Nwankwo and Nweke, 2016)." Parankimailil (2012) notes that, "education is a systematic process through which a child or an adult acquires knowledge, experience and relevant skills from one generation to another." In conclusion, education is the training of an individual whether young or old to become a better person that is humble, honest, skilled and cooperative for the general good of the society. Therefore, the goal of education is to usher in sustainable national development.

Related Studies

For clarity, a review of available few studies surface below in tabular form:

Author(s)	Year	Title	Objective(s)	Methodology	Results
Chioke, Agbodike & Nnaji	2021	Breaking the jinx of academic corruption for educational development in Enugu State: A focus on the covid-19 ordeal	To empirically determine appropriate ways of complying with the administrative and financial regulations guiding education sector in Enugu State.	Descriptive survey research design.	Compliance with the administrative and financial regulations guiding education sector in Enugu State will break the jinx of academic corruption for educational development in Enugu State.
Abdullahi	2018	Corruption in educational system and Management of primary school in Nigeria	Examining the nexus between provision of adequate fund and management of primary schools; determining the relationship between provision of adequate facilities and infrastructures and management of primary schools.	Proportional random sampling technique	It found that adequate provision of fund is necessary for effective management of primary education in North-Central; and provision of adequate facilities and infrastructures enhance the effective management of primary education in North-Central, Nigeria.

Author(s)	Year	Title	Objective(s)	Methodology	Results
Nwankwo and Nweke	2016	Effects of Corruption on Educational System: A Focus on Private Secondary Schools in Nsukka Zone	To examine the level of corruption in educational system of private secondary schools in Nigeria.	Qualitative research method	It found that corruption such as frauds; embezzlement, bribery, nepotism, examination malpractice and so on are not just in private secondary schools but also in public schools and even in higher institutions of the higher learning in Nigeria.

Gap in literature

Some critical indicators of corruption in education sector such as faulty recruitment, godfatherism, favouritism in staff recruitment and selection and so on were not analytically addressed in the reviewed empirical literatures. Moreover, a gap exists in the literature in analytically demonstrating the effects of these indicators on the administration and management of education in Enugu State at the secondary level. Also; inadequate attention was paid by the existing literatures to the extent to which corruption has affected the management of secondary schools in Enugu State. This present study is undertaken to fill the above identified gap in literature, because, there is no record of available study that was conducted in Enugu State with a view to examining the specific objective of this study.

Theoretical Framework

This study was rooted on postulations of systems theory. Systems theory is closely linked to Ludwig Von Bertalanffy. "In the systems approach, a system is defined as a set of inter-related and interdependent parts arranged in a manner that produces a unified whole (Sapru, 2013)." Nigeria is an embodiment of different organizations in the form of states, sectors, units, parts, arms, elements, forces, to mention but a few. The prevalent circumstance in the country's public administration ecology is wholly or partly associated with corruption. But then, we must bear in mind that the very impact of related anti-corruption policies exists in the form of and in fact is the output of the system. So, input ushers in output and how the people react or respond to the hand effects thereof is by no means inconsequential. Then, what are the specific inputs in the administrative system of the education sector? Specifically, mismanagement of fund and unethical standards, are amongst the inputs in the Education Management unit that are on the negative side.

To Ikelegbe (1996), "systems theory sees policy as an output of the political system." This therefore suggests that anti-corrupt policies and strategies in the educational sector and the entire system at large are output of the government geared towards making the system corrupt free and educational management is by no means an exception to this. Interestingly; in any bureaucratic organization, certain elements interplay and are manifestly involved. They are: input, output and feedback. Thus, in an organization like Nigeria, policies come in form of input. In this

dimension; corruption functions and thrives in a bureaucracy as an organizational input and resultantly leaves the organization with results which in turn receive demands in form of inputs from the public. Additionally; connecting the systems theory to the central theme, educational management, we bear in mind that the whole includes, the Board, the Management team, departmental heads of schools and other related parts of the sector. These parts function synergically to achieve the common objectives of establishing public schools in Enugu. Then, how does government respond to the inputs in form of demands directed to it with regard to corruption in public schools? Perhaps, you already know the answer. Then what are the indices of academic corruption and the extent to which they affect the management of public-school students within the scope of the study? This forms the basis for this research.

Tenets of the theory

- Subordination of the unit's will to the dictates of the general system. In other words, the rule is that every part is bound to obey the rules of the whole to which it is attached to.
- Superiority of the whole: The general system surpasses the component parts.
- Regulations: Since, the general system is greater than the part; it performs regulatory functions by determining what may pass between the units and the whole environment. Thus, the system determines how the units are affected by the convergence of forces in the part of the whole.

Application of the Theory to the Study

In applying the systems theory to this study, the researcher seeks to enquire the extent to which the state's educational sector as a unit of the general system is being affected by the interplay of corrupt indices in the study area. The corrupt indices in form of inputs that go into the educational system of Enugu State, which directly or indirectly affect the general system are: promotion based on unethical means, poor funding, misappropriation of funds by school authorities, diversion of funds for staff training and favouritism in the promotion of staff which aid and reinforces

breaking of rules and regulations by the stakeholders which the output of these inputs is maladministration of the public secondary schools. As a result of the interconnections that prevail in a system; the logic remains that whatever affects a subsystem, affects the whole. This being the truth, the study verified how corruption affects the general system in terms of educational management using Enugu State's public secondary education as the focus.

Research Method

Study Design and Instrumentation

The researcher adopted survey research design. The questionnaire was face and content validated by two research experts in the Department of Public Administration Nnamdi Azikiwe University.

With respect to internal consistency, the researcher administered the questionnaire on 20 persons. Using SPSS version 20, the Cronbach Alpha reliability index α result for this cluster showed that $\alpha = 0.8$. This result shows that the instrument passed the reliability test and thus considered reliable enough for attaining the research objective.

Scope and Participants

The study took place in Enugu State and two schools from each of the three Senatorial Zones were selected. The total staff strength of the schools selected from Post Primary School Management Board (PPSMB) Enugu record is 362. Out of the sample size of one hundred and ninety (190), one hundred and fifty-five (155) questionnaires were rightly filled and found useful. This indicates that the response rate was 86%. This is in line with Arowosogbe and Muhamed (2015) position that a 20 to 30% response rate is common in survey questionnaires.

Ethical Issues and Data Analyses

In collecting data, the researcher did ask for permission of the relevant authorities via a written letter of permission to head Research and Statistics Department of PPSMB Enugu. Significant procedures were followed by the researcher to address research ethics. In this regard, public schools tutorial staffs were given letters of consent stating the objective of the study. Confidentiality, withdrawal clauses and the convenience of the

research participants was duly considered. In addition, the privacy of the respondents was respected as personal detail like names of the respondents were not disclosed in the entire study. Descriptive and inferential statistics was adopted for data analysis. A mean value of 3.0 was taken as a criterion to ascertaining the position of the respondents on each item of the research question. Therefore, any item in the instrument which has a mean equal to or higher than 3.0 will be regarded as 'accepted' while items with less than 3.0 will be regarded as 'unaccepted.'

Data Presentation and Analyses

Research question 1: How would you rate the extent corruption affects the management of education in Enugu State at the secondary level?

A bench-mark of 3.0 was used for the study. Since, the mean value of all the questionnaire items for the variables was above 3.0, it depicts that all the questions were accepted for the study. Hence, all variables in this cluster were used for the study.

Discussion of findings

The study found that corruption affected the management of education sector of Enugu State to a great extent. This finding corresponds with the fact that, "No one can doubt that corruption as an immoral behaviour does not have negative implications on the management of education in Nigeria (Nwaokugha and Ezeugwu, 2017)." With this in the system, there is predominance of two categories of people namely irresponsive educators and irresponsible students and this is as a result of corruption in the administration and management of education in the state.

Table 1

Mean ratings of participants' responses on the extent corruption affects management of public secondary schools in Enugu State.

S/N	Items	SA (5)	A (4)	SD (3)	D (2)	N (1)	_ X	Std.	Variance	Decision
1	High rate of mismanagement of fund.	91	14	16	20	14	3.9548	1.42493	2.030	Accepted
2	Lack of prompt payment of salaries, gratuity and pension.	105	12	1	7	30	4.0000	1.61968	2.623	Accepted
3	Selection and promotion based on unethical means	98	14	13	28	2	4.1484	1.24208	1.543	Accepted
4	Inadequate release of running costs	71	7	7	38	32	3.3032	1.69558	2.875	Accepted
5	Inadequacy of teaching materials.	100	19	12	15	9	4.2000	1.26594	1.603	Accepted
6	Diversion of fund for staff training.	50	55	24	6	20	3.7032	1.31017	1.717	Accepted
	Grand Total						3.8849	1.4263	2.065	

Source: *Author's field work*

First, a look at the information on the above cluster shows that the majority of the respondents supported the idea that high rate of mismanagement of fund is an extent to which corruption in the educational sector affects administration and management of education in the state. This is consistent with Obasi (2003) below: "mismanagement of public funds and not paucity of funds that the federal government often claims, is the main cause of the inability of the government to adequately fund the nation's tertiary institutions in Nigeria (Obasi, 2003)." Indeed, funds designated for educational purposes are often mismanaged by corrupt politicians or their cronies in education sector. It follows then that the presence of corruption in education sector truncates the administration and management of education in the state to a high extent. This is consistent with the study conducted by Dridi (2014) which made it clear that, "The most obvious argument is that corruption is inimical for the development of an economic and institutional environment that enhances education expansion and high-quality human capital formation." With a mean score of 4.148, participants agreed that selection and promotion of tutorial staff is based on unethical means. In a related study, Ukeje, Ndukwe, Chukwuemeka, Ogbulu & Onele (2020, p.370) highlighted that, "in practice, directives are received from the highest echelon to employ certain people for certain position in certain places without recourse to laid down rules." This has a far reaching implication on the educational management, as selection and promotion based on unethical means brings in inefficiency into the system. Similarly, Ukeje et al (2020) found that in Ebonyi State Civil Service, those employed without recourse to ethical processes cannot run the machinery of government effectively and efficiently. Also; the study revealed the prevalence of: lack of prompt payment of salaries, gratuity and pension; inadequate release of running costs; inadequacy of teaching materials; diversion of fund for staff training. Corroborating these findings in a study, Abdullahi (2018) contextualized corruption as, "the inadequate provision of educational fund, facilities and infrastructure as well as political favouritism in appointing educational managers." Viewed from the theoretical framework of this study, it is obvious that these factors correlate and interplay to bring major decay to the well-being of the state. Most importantly, the area of human capital development is really the worst hit by the ebb and flow of these indices. Therefore, Ifedili and Ochuba (2009) were right to have maintained that appointment of

unqualified teachers based on ethnicity and parochialism, inadequate instructional facilities, mismanagement of fund, poor remuneration of teachers among others as the factors militating against the maintenance of standard education in Nigeria.

Conclusion

This study has revealed that corruption affected the management of education in Enugu State at the secondary level to a great extent. Obviously, corruption has balkanized the educational system into hostile units (irresponsive educators versus irresponsible students) and has left management of education in tatters. Academic corruption in school administration and management has therefore remained a causative agent that is responsible for illiteracy, unemployment, unemployability of school leavers/graduates and underemployment with their enigmatic outcome, seemingly insurmountable but actually surmountable on the application of right measures. A situation where there is selection and promotion based on unethical means and inadequacy of teaching materials helps in breeding unemployable human resources in the state. Corruption in school administration leads to unemployment – a situation where qualified persons are sidelined and the unqualified taken. Equally, the practice of selection and promotion based on unethical means fosters the underemployment of members of the teaching staff. This study thus raises an alarm over the increased rate of unemployability of school leavers as a result of acute corruption in the administration and management of secondary education in the state. With this, the study has created an understanding of the causal link that exists between corruption and unemployability of the poorly educated.

Therefore, this study has contributed to knowledge as the woes associated with education management which are directly orchestrated through academic fraud were brought to the fore. This study authenticates that these woes (high rate of mismanagement of fund; lack of prompt payment of salaries, gratuity and pension; promotion based on unethical means; inadequate release of running costs; and inadequacy of teaching materials) are problems that must be addressed if students are to receive

the high standards of education, they need in order to meet the demands of the ever dynamic local and global employment market.

However, further research should be conducted to ascertain the degree of the effects of these aforementioned variables in private schools. The study concludes that educational renaissance should be manifestly conceived and carried out within the state and Nigeria at large, because whatever affects a unit of the whole equally affects the whole as seen from the lens of systems theory. The following insights on slaying corruption are possible solutions to the issues that were empirically unveiled:

- Since there is there is significant relationship between corruption and management of education in Enugu State; selection and promotion should be strictly based on ethics. When teachers are ethically selected and promoted as and when due, better there would be better educational management of secondary schools and quality learning guaranteed.
- There should be adequate release of running costs, prompt payment of salaries, gratuity, pension and other benefits so as to make teachers to be focused while carrying out their functions effectively.
- Adequate teaching materials should be made available for the state's secondary schools. In this regard, the state library and school libraries should be thoroughly refurbished for effective teaching and learning.

Implication of the Study

The implication of this study is that if the Commissioner for Education in the State does not consider exterminating critical corrupt practices that have hampered effective educational management and administration in the State by motivating and supporting the educators and learners to pursue quality educational service delivery and academic excellence through effective management devoid all forms of corruption, the state's education sector will remain impotent in the area of human capital development.

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Archives of Educational Studies
Volume 2, No. 1, 2022, 19-25
https://ares.pk/

New Education Policy 2020 and the Contested Terrain of language: On Public Policy Education

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Abstract
The state of affairs in the educational sector has been causative for the evolution of various education policies at various points in time; in fact, there is no dearth of policies. Now our country is confronting NEP 2020 which provides for reforms at all levels of education from preschool to higher education. NEP 2020 proposes a balance between several binaries such as autonomy and decentralization, freedom and regulation, private and public, research and teaching, and curriculum and co-curriculum, to mention a few.

Keywords: *Education policy, India, public policy education, education reforms*

Introduction

All those who have concern for children's learning in our country are likely to get disheartened by the findings of these reports. Our education system needs fixing; it has been the case ever since independence. The state of affairs in the educational sector has been causative for the evolution of various education policies at various points in time; in fact, there is no dearth of policies. Now our country is confronting NEP 2020 which provides for reforms at all levels of education from preschool to higher education.

Education is a political phenomenon and as such its stakeholders would not be able to perceive a policy document delinking it from its political underpinning; nor are they expected to indulge in that futile exercise. Consequently, any policy document on education entails a proliferation of narratives and polemical counter-narratives. Each of these narratives has its own space in a democratic setup as a large sector of representative intelligentsia gets engaged in discussions and debates that are extremely important for the well-being of a futuristic society. It would not venture

to reflect on NEP 2020 vis-à-vis its clauses. Instead, I would like to confine my reflections to a few key areas and related issues.
The paper will be organized into three parts:
The first part will be dealing with the critical perspective on language policy. The second part will also try to look at the gap between public education policy and the people's needs through a critical lens. Finally, it will reflect on how the policy has taken pains to balance several binaries in the educational sector.

The critical perspective
The major features of the language policy discussed in the document are:

1. Introducing the three-language formula in the foundational stage and the preparatory stages; of these mother tongue and English are mandatory whereas the third language may vary from state to state
2. Acknowledging multilingualism as a boon to every learner and capitalizing on it in classroom transaction
3. Using bilingual materials in science and other subjects
4. Introduction of a course namely, Languages of India in classes 6 to 8
5. Making Sanskrit available as one of the optional languages at all levels of school and higher education.
6. Exposing the learners to literature in Sanskrit and other classical Indian languages

Children at an early stage can learn many languages as is evidenced by the ability of children living in border districts of two states where people speak different languages; this crucially depends on the input they receive. They acquire this ability without any explicit teaching. So, there is theoretical justification for introducing three languages at the foundational stage. My concern is, therefore, not about the three-language formula or the newly proposed fun course namely, Languages on India, but about the language pedagogy that will be needed for facilitating the process of learning languages. The suggestions available in the document are not in conformity with the current understanding of what language is and how it is acquired. See what the document says about the approach to language learning and teaching:

> "ECCE ideally consists of flexible, multi-faceted, multi-level, play-based, activity-based, and inquiry-based learning, comprising of alphabets, languages, numbers, counting, colors,

> shapes, indoor and outdoor play, puzzles and logical thinking, problem-solving, drawing, painting and other visual art, craft, drama and puppetry, music and movement". (p. 7)
>
> "Currently, with the lack of universal access to ECCE, a large proportion of children already fall behind within the first few weeks of Grade 1. Thus, to ensure that all students are school ready, an interim 3-month play-based 'school preparation module' for all Grade 1 students, consisting of activities and workbooks around the learning of alphabets, sounds, words, colors, shapes, and numbers, and involving collaborations with peers and parents, will be developed by NCERT and SCERTs". (p. 9)

This part of the document certainly does have a problem from the perspective of language pedagogy. Let me elaborate on this point: When we say the approach to language, it has basically to do with the conceptualization of language. The method suggested here assumes that language can be learned and taught in a linear way starting from the small linguistic units like letters /sounds and words. Ever since the emergence of the Chomskyan paradigm in linguistics, language is conceptualized as an innate system that gets unfolded in a conducive linguistic environment. According to this conceptualization, the input for the child is crucial but optimal.

The Change in the Perspective on Language

When language as a phenomenon becomes the object of inquiry, we have to choose between one of the two belief systems:

- The human mind is like an empty slate and everything related to language comes from outside.
- Man has an innate language system which gets unfolded in a natural linguistic environment.

The following theoretical assumptions on language and language can be proposed:

- Langue requires a conducive environment for its manifestation.
- Language exists only as connected speech, which I would like to call discourses. Conversations, descriptions, stories, songs, and debates are all different discourses, to name a few.
- Acquiring a language is an unconscious process.
- Language is learned in the context of discourse.

- Langue should not be considered a combination of four skills but it is a matter of how these skills can be performed.
- Langue is acquired through interacting with cultures.
- Langue learning is possible through engaging oneself in the occurrence of facts and discourse.

We cannot develop a language pedagogy overlooking these assumptions. Unfortunately, ELT as is practiced in our times confronted with serious conceptual problems which have not been properly addressed in the academic discussions in the ELT world. ELT does not have any academic credibility for the simple reason that it is not a serious discipline but an industry, perhaps an industry larger than the steel industry which has flourished globally by paving way for a market economy to decide academics. I would like to argue that "the crucial causative factor underlying the deplorable state of affairs prevailing in the English classrooms of our country is a natural consequence of certain belief systems created and sustained by institutions, agencies, and individuals through the intentional or sometimes unintentional propagation of linguistic imperialism. Unless this is prevented no matter whatever efforts we take to improve the quality of English education will have practically no effect at all".

The issue related to the materials suggested for the foundational and the preparatory stages

A lot of interesting activities have been suggested for the foundational and preparatory stages to make classroom learning as enjoyable as possible. The thrust is on activity-based and experiential pedagogy. Theatre and music are brought in at all stages to facilitate not only language learning but the learning of other subjects as well. The use of linguistic materials like songs/rhymes, riddles, and stories is also recommended. This is all good but a question pops up. How will we help the learners make sense of the rhymes and stories and the like inputs given to her? How will make the language inputs be comprehensible? In the absence of strong language pedagogy, teachers will make the learners memorize the texts probably in an enjoyable manner. However, that is not going to facilitate language acquisition. Children may learn the texts but that won't suffice. As Krashen puts it, learning does not become acquisition. Learning is a conscious process whereas, the acquisition is a non-conscious process. This is why Chomsky says language acquisition is not something the child does but something that happens in the child's mind.

A suggestion is made in the document to use the mother tongue as concepts are best learned in the mother tongue and therefore, a bilingual approach has been suggested. I think the suggestion needs to be closely examined. Bilingualism can be interpreted at least in three ways:
Translation: The same text is presented in the target language as well as in the mother tongue.
Code mixing: Using words in the target language wherever possible where the mixing of two languages happens keeping the syntax of the mother tongue intact.
Code-switching: As a part of the narration that is presented in the mother tongue; whole expressions are used as embedded in the narration so that comprehension of the idea takes place contextually.
Of these, code-switching has been found to be very effective. I have a case to mention. In the Ernakulum district of Kerala, there are several thousands of migrant families who have come from states like Bihar, Bengal, Orissa, and even Tamilnadu. The Government of Kerala took the responsibility of educating the children of these migrant families and enrolled them in nearby Govt. schools. So, in almost all schools we find children speaking different languages. They have to learn two languages: Malayalam, which is the official language, and English. Both of these languages are second languages for them. Communication between the learners and the teachers was a near impossibility. In order to address this crisis, a special project called Roshini was launched in 18 select schools initially and then in 40 schools. I suggested the resource team use narrations using code-switching as a pedagogical tool. Some of these learners were first-generation learners and were enrolled in classes 3, 4, and even middle classes as per the provisions of the RTE Act. Volunteers who can understand their language and speak to them were appointed. Within 3 months all these children were able to speak and write the target language without any support outside the class.

The gap between policy and people's needs

The formulation of public policy on education is entrusted with a body of academic experts constituted by MHRD. Once the draft is made ready it is kept in the public domain for open discussion, SCERT, an exercise which is undertaken by SCERT's DIETs.
Each education policy since independence has laid certain milestones in visioning education. At various points in time, policy designers have tried to define and sometimes redefine, or even create, nomenclatures that do not sync with the conceptual understanding of the stakeholders. This widens the inherent gap between the decision-makers policies and the

curriculum expectations on the one hand and the needs of the people on the other.

It leads to the perspective of National Policy on Education (NPE) 1986 as revised in 1992 and the Programme of Action 1992. These documents emphasized that the Minimum Levels of Learning (MLLs) should be laid down and children's learning should periodically be assessed to keep a track of their progress toward achieving the NPE goal. Eventually, MLLs were developed class-wise and subject-wise for the primary stage in 1992 in the form of competencies. A decade later it was observed that the MLLs were highly product-oriented and had limited scope for assessment of the overall development of children. This demanded a radical shift when the child's capacity to construct knowledge as a natural learner was recognized as central to the transaction of the curriculum. Knowledge was conceptualized as the outcome of the learner's engagement with the world around when she explores, responds, invents, and makes meaning out of that. This implied a shift in the focus from the product to the process of learning. Accordingly, the teacher's role was redefined primarily as a facilitator of the learning process.

This is all good from the designer's point of view. But to what extent did these ideas sync with the conceptual understanding of the functionaries of agencies like SCERTs DIETs, BRC's and more importantly, the teachers and the departmental officers? The teachers by and large continued to teach the way they had been doing since the beginning of their careers. For most of them, the shift from product to process did not make any sense; for them, the textbook was synonymous with the curriculum and syllabus. Market forces undertook the production of supportive materials that contained learning outcomes in capsular form; all the students had to do was memorize the contents. Examinations continued to be textbook-based and memory-based. States that undertook partial revamping of the examination system introduced formative and summative assessments, but the formative assessment was conceived and implemented as a summative assessment. This shows that there has been always a wide gap between what has been envisaged in a certain policy document and what happens at the implementation level. We have several examples of how ambitious policies get stagnated at the implementation level. NEP 2020 has the risk of falling in line with these unimplemented policies.

Why has this happened? Why do the policies not provide for the people's needs? A major problem with these policies is that they are of a top-to-down model. The apex body has formulated the draft policy document and discussions are carried out at the SCERT's Universities, NGOs who in turn will be giving their feedback on the document. However, at no

point, space is given to the people, not intellectuals at the bottom level. The LSG's have no role in formulating the document. They are systematically excluded from all discussions.

Instead of a top-to-bottom model, why can't we think about an evolutionary model for formulating public policy?

Balancing the binaries

NEP 2020 proposes a balance between several binaries such as autonomy and decentralization, freedom and regulation, private and public, research and teaching, and curriculum and co-curriculum, to mention a few. Alongside these binaries, there is also the binary of an educational system rooted in the Western tradition of one situated in the Indian tradition. Some critics have looked at this as a saffronisation of education, or as an attempt to rejuvenate the Vedic tradition and the brahminical system. In the context of neoliberalism, all these dissenting notes are important. At the same time, it will be disastrous to indulge in academic discourses without properly understanding what these nomenclatures mean. It seeks to view that we can no longer be ignorant of our rich academic and cultural legacy; we need not feel ashamed of talking about it. What is worth accepting should not get wiped out in one sweep is counter-intuitive from the neoliberal perspective. The implications of each of these are to be viewed through a critical lens.

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Archives of Educational Studies
Volume 2, No. 1, 2022, 26-46
https://ares.pk/

Impact of Use of Audio-Visual Aids on Knowledge and Comprehension of Low Achiever Science Students

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Abstract
Teaching of chemistry by use of educational technology has enhanced student's interest in chemistry. Cognitive learning plays vital role in conceptual development of students. In the present work audio-visual aids were used to find their effectiveness on knowledge and comprehension of low achiever students in chemistry. A sample 51 students was selected from 2 two different institutes. On the basis of previous year results of students, they were distributed into control and experimental groups. During this experiment 15 different topics of chemistry were taught to students for 73 days. The control group was taught with lecture method whereas experimental method was taught with the help of AV AIDS such as models, charts, animated videos, and power point presentations. Knowledge based and comprehension based pre and post tests were conducted to evaluate the effectiveness of audio-visual aids. The results showed that the experimental group performed better as compared to the control group marking significance of audio-visual aids on knowledge and comprehension of students in chemistry.it is recommended to use AV Aids to teach chemistry to the low achievers as it helps to conceptualize the abstract concepts.

Keywords: *Audio-visual resources, comprehension, knowledge, secondary school students; teaching learning process*

Introduction

Chemistry is a subject of concepts which is difficult to understand when presented only by theoretical ways. Mostly students of high schools consider chemistry as a nightmare. They either try to avoid chemistry periods or try to cram what have been taught and then throw it off as soon as possible. This is because of lack of effective or better communication between teacher and students while learning chemistry (Sanger, 2000). It has resulted in increased number of failure students at secondary school level and this number is approaching at the alarming level.

Visual aids are important in education system. It had been reported by the scientists and scholars that teaching chemistry through visual aids is effective and helpful rather than any other teaching method adopted for chemistry teaching (Ardac, 2004). These are the devices which invigorate teaching learning process by making it unchallenging and entrancing. These are the best impedimenta for effective teaching and promulgation of knowledge (Rasul, 2011). Learning with visualization in general is termed as a constructivist cognizance of learning. The uppermost bulletin is that students after getting directions through visual aids will be able to construct new ideas. Visual aid learning has been one of the paramount forces for the development of empirical research attitude in students.

Use of visual aids provides learners a visual stimulation and an opportunity to interact with the content from a vintage point. In this way each learner can grasp more swiftly. These aids not only arouse the inquisitiveness of learners but also help the teachers to make conceptions easier for the learners (Eilks, 2009). So, the focus of present study will be the analysis or measure of effect of visual aids on learning abilities of students at secondary school level.

Statement of the problem

Effective learning of chemistry is purely dependent upon methods adopted for teaching purposes. Theoretical methods of teaching so far have little effect on students learning in chemistry. Usage of visual aids in teaching chemistry can be valuable for improving learning of students in chemistry. There are hundreds of secondary schools in Azad Jammu and Kashmir. Their performance in 2017 and 2018 board examination is not satisfactory especially in chemistry. There might be different factors responsible for

poor results. Existing literature has visualized that learning aids have potential impact on the academic performance of students. Rasul (2011) reported that visual aids have played significant role in teaching and learning process. These materials not only improve the effectiveness of teaching and learning process but also provide core ideas of the subject with depth explanation. Mathew and Alidmat (2013)have inferred that these aids act as a source of inspiration and motivation for students and their effective usage substitutes tedious learning environments. Awasthi (2014) also concluded that visual aids make learning very effective by increasing interest of students in education. So, in general it is acknowledged that visual aids make learning process effective in such a way that student can easily get command in their subjects (Mohsen, 2016). There are many other problems faced by students in secondary schools making their performance weak in chemistry but lack of use of visual aids is the key problem in this regard. The objective of the present work was to examine the efficacy of visual aids in learning of chemistry at the secondary school level.

Objectives of the study

The leading purpose of the study was to observe the impact of visual aids on performance of chemistry students at secondary school level. Other objectives of the study include to explore the effect of audio-visual aids for learning chemistry among low achievers.

Hypotheses

H_{01} There is no effect of visual aids on students learning.

$H_{02.}$ There is no significant difference between mean scores of control group and experimental group regarding knowledge when taught with visual aids.

$H_{03.}$There is no significant difference between mean score of control group and experimental group regarding comprehension when taught with visual aids.

Literature Review

Education is indispensable for all and sundry. Its importance cannot be denied because a good life can never be enjoyed without it. Imperative constituents of education are teaching and learning. The teachers practise

diverse approaches and aid materials to make learning more effective. Resourceful teachers are always beloved by students because they encourage their involvement in different technology based learning activities thus creating a beautiful learning environment (Mohammed, 2017). This environment in turn is dependent upon planning of teachers for technology based lessons (Kausar, 2013). Such lessons trigger fear free attendance of students in the classroom (Halwani, 2017). Teaching aids not only trigger the interest of pupils but also clarify the concepts smoothly. Audio and visual materials are used to innovate and enhance teaching and learning process (Daniel, 2013). These are also used to make this process easier, effective and interesting (Awasthi, 2014). Audio visual tools, in learning process, concretize learning and help in improving mastery and understanding of students for different subjects (Almurashi, 2016). These tools also enhance and maintain student interest for science subjects (Ibe, 2019). They make a smooth, strong and faultless between the learning material and the learner (Richard, 2020). Positive influence of these tools was also reported by Al-Khayyat (2016). Improved understanding of school students for various subjects was also found by Tang (2018).

The material like film strip, models, maps, charts, projectors, television and radio etc. are called audio visual aids. Visual aids are operative tools that" invest the past with an air of reality." These aids have advantage of providing the learners the atmosphere of realistic experience by capturing their attention. They motivate the mind by involving the visual and the auditory senses. It is clear that all of us gain knowledge by using our senses. This makes clear that these aids are helpful in making teaching and learning process more easy and effective because these aids stimulate thinking and understanding approach (Jane, 2020). There has been manifold values use of these aids in teaching and learning process. A consistent and professional presentation can be made by the presenter by using these items.

The teaching profession is dressed with incalculable opportunities to improve the academic performance of students. Although some objectives and concepts being stress-freewill be easier to hold yet others will have need of creative thinking to achieve learning objectives. Teaching by visual aids is one way of boosting lesson plans and offering additional ways to have command in subject (Ehsan, 2019).They epitomize knowledge and

help in improving learning process. They furnish the work of the teacher with new ideas. It had been well stated by Comenius that the basis of all learning types involves clear representation to the senses along with sensible objects for their appraisal (Tang, 2017).

The process of teaching and learning has pivot role in educational development. If this is well organized and directed, it is a key to progress and success of an individual. Thus, finest methods must be used to enrich effectiveness of teaching and learning. Visual resources in addition to increasing the enthusiasm of the teachers and the learners also add clarity making the learning very exciting (Adamu, 2018). The goal of education is permanent learning so that the learners are able to retain with clear concept what is taught. This is achieved by using visual aids because these aids involve many senses. It is found that learners can retain maximum of knowledge by involving hearing, seeing, and feeling instead of involving only sense of hearing (Tang, 2017). This concept endures weight to the old Chinese wise saying according to which 'what I hear I forget what I see I remember and what I do, I know.

A visual coaching vitalizes the use of visual resources so that non-figurative ideas are more real to the students (Iqbal, 2020). Thus, the teacher's responsibility is to make learning living experience of education instead of making it just something to memorize. This objective may be achieved effectively by hiring the use of visual resources in teaching process while imparting knowledge (Gilakjani, 2012). Educators have found that the effectiveness of teaching and learning can only be achieved if a student has direct experience with his subject. It is observed that a learner can have best learning by doing and this activity is well offered only by use of visual resources because enrich motivation, concentration, attention and preservation of facts. However, there has been no harmony on usage of visual materials in teaching as referred by authors, researchers and intellectuals.

Usage of diagrammatic representations in popular magazines, newspapers professional, scientific journals and science textbooks is now a common practice. They have turned into an essential constituent in handing over scientific information from scientists to the general public and school students (Qaiser, 2011). Keeping in view their prominent place in scientific communication and science learning it is shocking that they have not been

addressed more amply and systematically in scholarly discussions. Pakistan is endlessly wrestling for an above board position in the circle of the scientific nations. So a muscular base of science and technology is needed by Pakistan to solve its problems of energy, health, food, education, poverty, shelter, security, overuse of natural assets. Hence, it is much needed to pay full attention towards scientific achievements to ensure the development of Pakistan.

Procedure of study

Research Design

This study marked the differences between lecture method and method based on use of visual aids while teaching chemistry. It was purely experimental in nature. Graphs, models, slides, animation videos were used. Pre-test and post-test were conducted.

Population

All chemistry students of class of 10^{th} class of the government institutes namely institute 1 and institute 2 of district Bhimber Azad Jammu and Kashmir constituted the population. Number of 10^{th} class chemistry students was 30 in institute 1 and 21 in institute 2.

Sample

There was random selection of students of chemistry of 10^{th} class and they were classified as "Control Group" and "Experimental Group" on the basis of their previous annual exam scores in chemistry. 15 students were in the experimental group and 15 students were in the control group of Institute 1. Similarly, 11 students were in the experimental group and 10 students were in the control group of Institute 2. Students for both the groups were selected according to bright, medium and dull levels of academic achievements.

Tool Development

Pre-test and post-test were conducted to evaluate the learning of students. These tests comprised of twenty knowledge based questions (K.B.Qs) and fifteen comprehension based questions (C.B.Qs).

Tool Administration

It was necessary to inspect whether the adeptness of both groups in chemistry was at the same or different level. There were ten K.B.Qs about the main idea and ten K.B.Qs about related terminologies in the pre-test. Similarly eight C.B.Qs were about pictorial representation of ideas and seven C.B.Qs were about definitions and short explanation of different ideas.

Intervention

Both groups of students were given same lecture about specific topics with the exception of the experimental group which was delivered lecture with the help of visual aids like animation videos, models, and slides. Since in experiment the visual aids were used thus less time was consumed for explanation in case of experimental group as compared to the time consumed in case of control group. Thus no extra time was given to any group. Post-test was also conducted on same pattern for evaluation purposes. This process was completed in 73 days. Total 15 different topics were taught. These concepts were taught using models, power point presentations, animated videos, and charts. Following topics were taught by models and animated videos;

a) Structure of an atom
b) Comparison of atom, element, compound, mixture and free radical.
c) Periodic functions of elements including atomic and ionic radius, ionization energy, electronegativity, electron affinity, and isotopes.
d) Environmental topics like greenhouse effect, acid rain, primary and secondary pollutants.
e) Analytical chemistry and organic chemistry topics including acid base titration, role of indicators, properties of acids, bases and salts, solutions, classification of organic compounds, geometries of different organic compounds, carbohydrates, nucleic acids, and vitamins.

Topics a, b and c were taught in 24 days while topics d and e were taught in 32 days.

Following topics were taught by using charts and power point presentations within 16 days;

f) Topics of industrial chemistry like Solvay's process, Haber's process, metal extraction and refining.
g) Laws about behaviour of gases like Boyle's law and Charles law.
h) Chemical kinetics

Results

Performance of Participants of Institute 1

The number of control group participants was equal to the participants of test group in this college i.e 15 participants per group. According to the data of initial assessment none of the participants of both the groups was able to score rights answers of M.C.Qs between 16-20 and S.Qs between 13 -15.

Section-I

Assessment of control group

Table 1

Overall results of knowledge based and comprehension base tests of control group

No. of students	Performance	Mean score K.B.Qs	Mean score C.B.Qs	T_{cal} for K.B.Qs	T_{cal} for C.B.Qs
15	Before lecture	6.6	4	2.83	1.23
	After lecture	9.7	7.33		

K.B.Qs = Knowledge based questions

C.B.Qs = Comprehension based questions

df = 14

T_{tab} at 0.05 level of significance = 1.761

Table 1 shows that there was a greater difference between mean scores of control group before and after lecture for the test of K.B.Qs and C.B.Qs. The T_{cal} value for K.B.Qs test was greater than T_{tab} while it was less than T_{tab} in case of C.B.Qs.

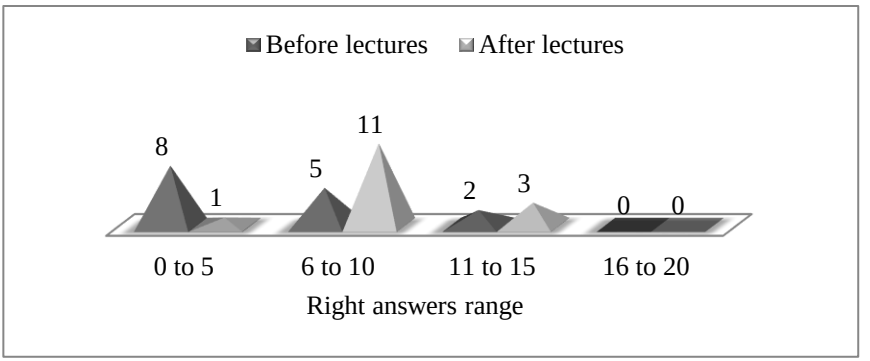

Figure 1: Comparative representation of K.B.Qs results of control group

The number of participants of the control group initially for giving right answers of K.B.Qs in range 0-5 was 8 which decreased to 1 after the lecture, for the range 6-10 initially the frequency was 5 which increased to 11 after the lecture, for the range 11-15 it was initially 2 which increased to 3 after the successful completion of the study.

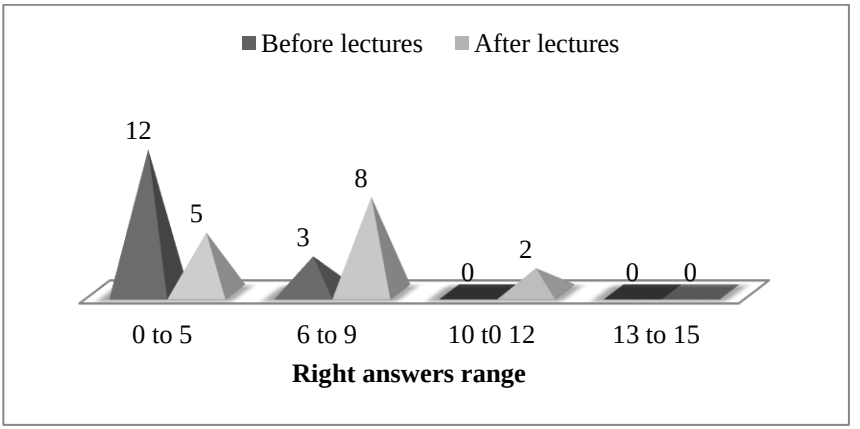

Figure 2: Comparative representation of C.B.Qs results of control group

The performance of these participants in answering C.B.Qs varied in such way that the frequency in the range group 0-5 initially was 12 which decreased to 5 after the lecture, for the range 6-9 it was 3 before lecture and after lecture it increased to 8, for the range 10-12 it was initially 0 but increased to 2 after the lecture.

Section – II

Assessment of experimental group

Table 2

Overall results of Knowledge based and comprehension based tests of experimental group

No.of students	**Performance**	Mean score K.B.Qs	Mean score C.B.Qs	T_{cal} for K.B.Qs	T_{cal} for C.B.Qs
15	Before lecture	6.73	5.4		
				1.85	1.86
	After lecture	17	11.53		

K.B.Qs = Knowledge based questions C.B.Qs= Comprehension based questions df = 14 T_{tab} at 0.05 level of significance = 1.761

Results of table 2 show that mean scores of this group before lecture for Comprehension based and knowledge based tests were 5.4 and 6.73 respectively. These were improved to 11.53 and 17 respectively after the lecture. T_{cal} values for C.B.Qs and K.B.Qs were 1.86 and 1.85 respectively which were greater than T_{tab}.

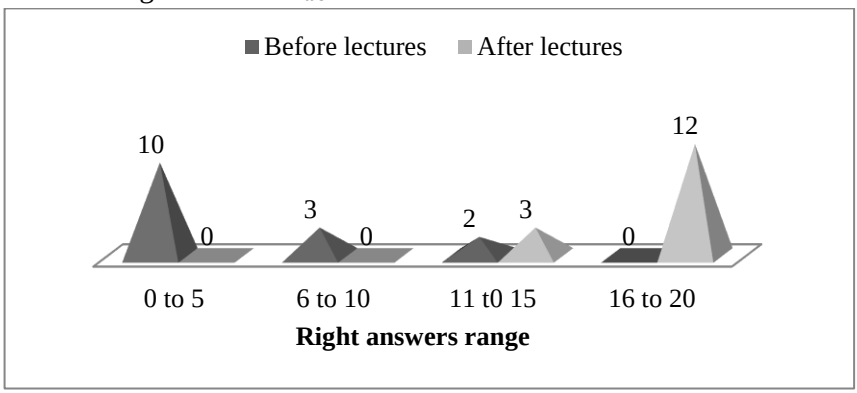

Figure 3: Comparative representation of K.B.Qs results of experimental group

The number of participants of the test group initially for giving right answers of K.B.Qs in range 0-5 was 10 which decreased to 0 after the lecture, for the range 6-10 initially the frequency was 3 which decreased to zero after the lecture, for the range 11-15 it was initially 2 which increased to 3 after the successful completion of the study. The initial assessment

showed that none of the participant was in range of 16-20 but it increased to 12 after the lectures.

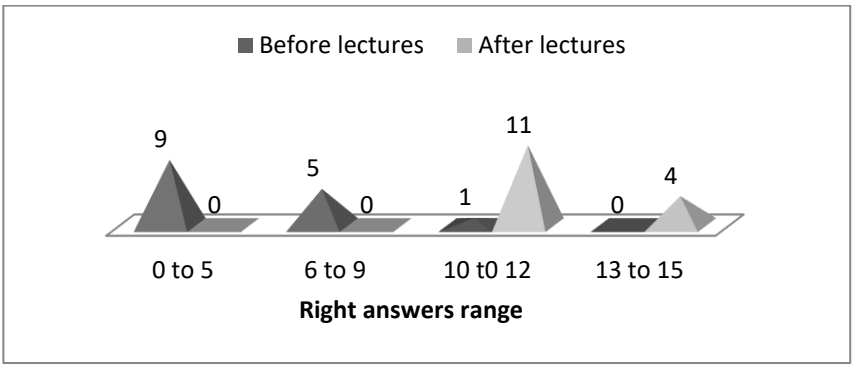

Figure 4: Comparative representation of C.B.Qs results of experimental group

The performance of these participants in answering C.B.Qs varied in such way that the frequency in the range group 0-5 initially was 9 which decreased to 0 after the lecture, for the range 6-9 it was 5 before lecture and after lecture it decreased to 0, for the range 10-12 it was initially 1 but increased to 11 after the lecture. Before the start of lectures the frequency of the range 13-15 was zero which increased to 4 after the lectures.

Performance of Participants of Institute 2

The control group comprised of only 10 participants while the experimental group was made by 11 participants of this institute. According to the data of initial assessment none of the participants of both the groups was able to score right answers of K.B.Qs between 16-20 and C.B.Qs between 13 -15.

Section-I

Performance of control group

Table 3

Overall results of knowledge based and comprehension based tests of control group

No.of students	**Performance**	Mean score K.B.Qs	Mean score C.B.Qs	T_{cal} for K.B.Qs	T_{cal} for C.B.Qs

10	Before lecture	7.6	5	3.54	2.86
	After lecture	12.4	7		

K.B.Qs= Knowledge based questions, C.B. Qs= Comprehension based questions df = 9 T_{tab} at 0.05 level of significance = 1.83

Table 3 shows that there was a greater difference between mean scores of control group before and after lecture for the test of K.B. Qs and C.B.Qs. The T_{cal} values for K.B. Qs and C.B.Qs tests were greater than T_{tab}.

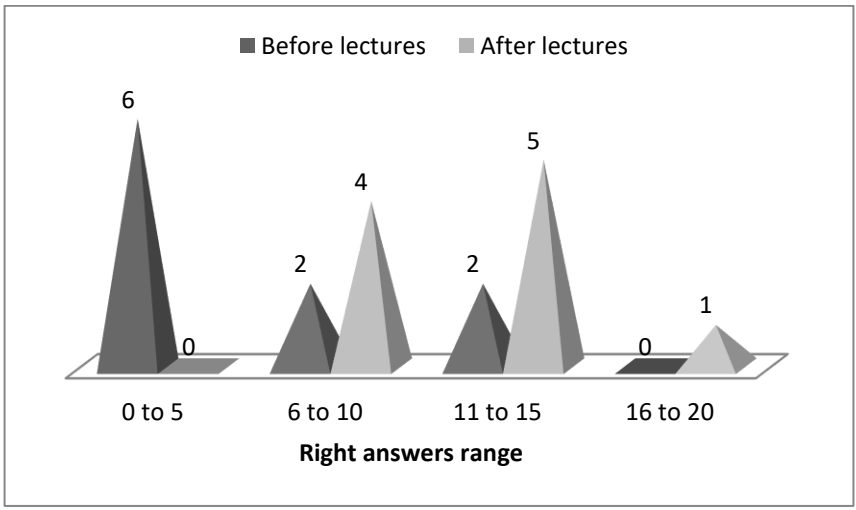

Figure 5: Comparative representation of K.B.Qs results of control group

The number of participants of the test group initially for giving right answers of K.B.Qs in range 0-5 was 6 which decreased to 0 after the lecture, for the range 6-10 initially the frequency was 2 which increased to 4 after the lecture, for the range 11-15 it was initially 2 which increased to 5 after the successful completion of the study.

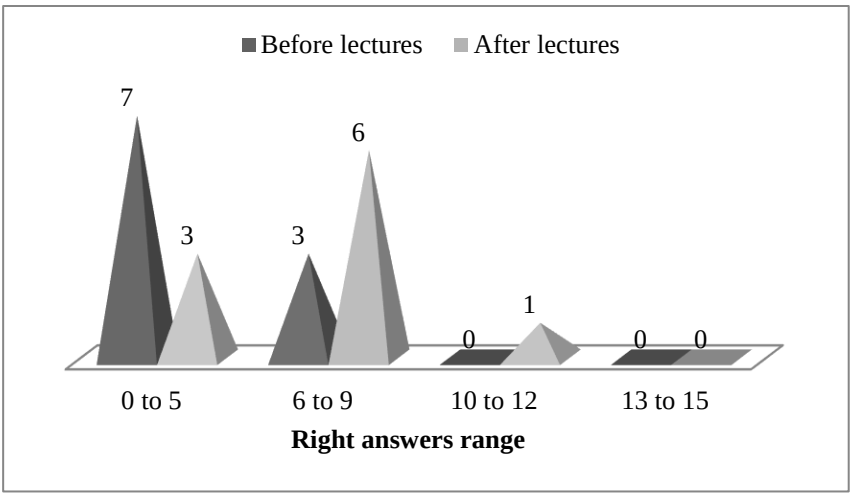

Figure 6: Comparative representation of C.B.Qs results of control group

The performance of these participants in answering C.B.Qs varied in such way that the frequency in the range group 0-5 initially was 7 which decreased to 3 after the lecture, for the range 6-9 it was 3 before lecture and after lecture it increased to 6, for the range 10-12 it was initially 0 but increased to 1 after the lecture.

Section-II

Performance of experimental group

Table 4

Overall results of knowledge based and comprehension based tests of experimental group

No.of students	**Performance**	Mean score K.B.Qs	Mean score C.B.Qs	T_{cal} for K.B.Qs	T_{cal} for C.B.Qs
11	Before lecture	8.4	5.9	1.63	1.25
	After lecture	17.7	12		

K.B.Qs = Knowledge based questions C.B.Qs= Comprehension based questions df = 10 T_{tab} at 0.05 level of significance = 1.812

Results of table 4 show that mean scores of this group before lecture for C.B.Qs and K.B.Qs were 5.9 and 8.4 respectively. These were improved

to 12 and 17.7 respectively after the lecture. T_{cal} values for C.B.Qs and K.B.Qs were 1.25 and 1.63 respectively which were lower than T_{tab}.

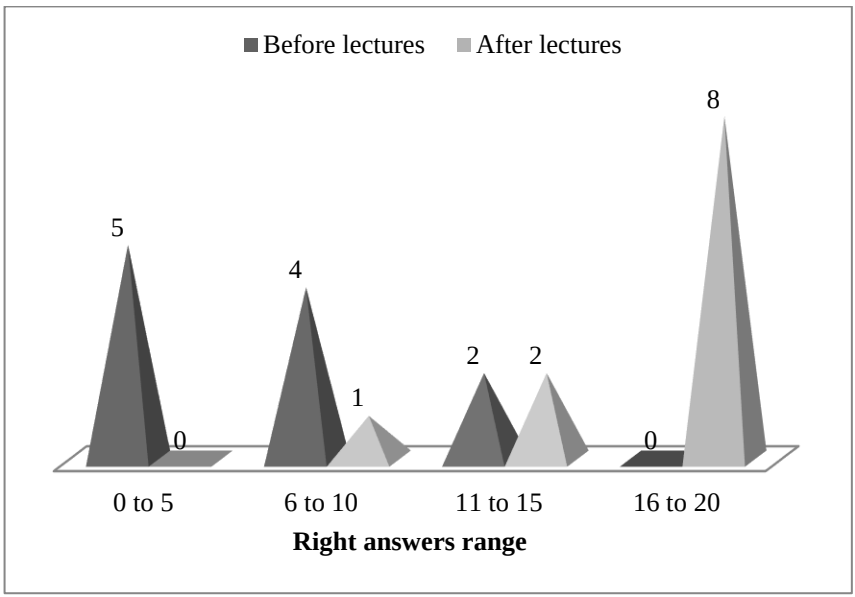

Figure 7: Comparative representation of K.B.Qs results of experimental group

The number of participants of the test group initially for giving right answers of K.B.Qs in range 0-5 was 5 which decreased to 0 after the lecture, for the range 6-10 initially the frequency was 4 which decreased to 1 after the lecture, for the range 11-15 it was initially 2 which remained unchanged after the successful completion of the study. The initial assessment showed that none of the participant was in range of 16-20 but it increased to 8 after the lectures.

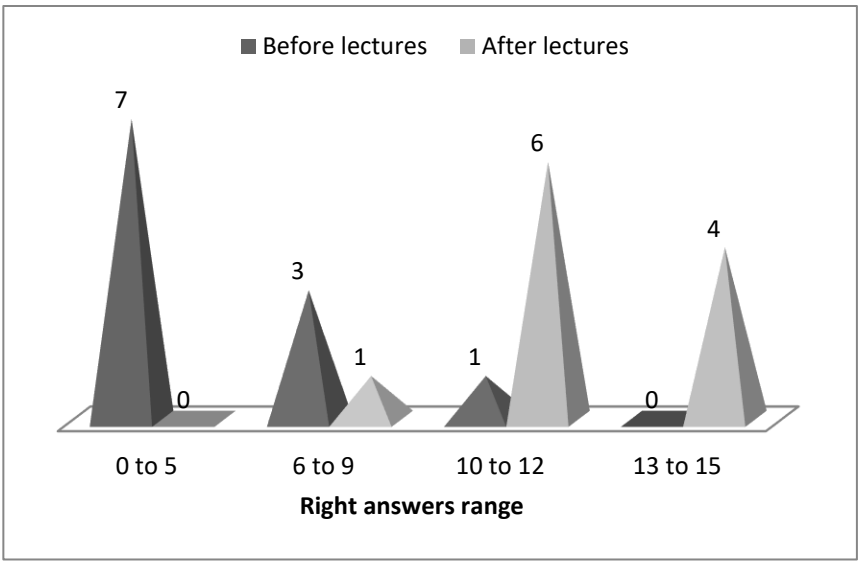

Figure 8 Comparative representation of C.B.Qs results of experimental group

The performance of these participants in answering C.B.Qs varied in such way that the frequency in the range group 0-5 initially was 7 which decreased to 0 after the lecture, for the range 6-9 it was 3 before lecture and after lecture it decreased to 1, for the range 10-12 it was initially 1 but increased to 6 after the lecture. Before the start of lectures the frequency of the range 13-15 was zero which increased to 4 after the lectures.

Table 5

Effect of visual aids on knowledge level of participants

Mean scores of knowledge based tests of experimental groups		
	Institute 2	Institute 1
Before Lectures	8.4	6.73
After Lectures	17.7	17

The mean scores of participants of Institute 2 and Institute 1 were 8.4 and 6.73 respectively before lectures which improved to 17.7 and 17 respectively. Improvement in mean scores of participants of both institutes confirmed that visual aids have improved knowledge level of the participants as shown in the table 5.

Table 6

Effect of visual aids on comprehension level of participants

Mean scores of comprehension based tests of experimental groups		
	Institute 2	Institute 1
Before Lectures	5.9	5.4
After Lectures	12	11.53

Mean score of participants of Institute 2 was 5.9 before lectures and improved to 12 after lectures. Similarly mean score of participants of Institute 1 was 5.4 before lectures and improved to 11.53 after lectures. These results confirmed that comprehension level of students can be improved to significant level by using visual aids as indicated in the table 6.

Discussion

The core scheme of this work was to find out the impact of visual aids on learning of chemistry. The data analysis shows the favourable attitude of students toward the use of visual aids to learn chemistry in diverse ways. Visual aids are not only beneficial for students but also for teachers because by the use of visual materials. In the classroom, they can teach making the class thought-provoking. Different visuals can bring different variations in chemistry teaching which may draw the devotion of the learners toward the lessons. For example, if a chemistry teacher uses different pictures the classes becomes stimulus for learners to understand the theme of the topic. Therefore, it will always be better having something visuals for the students for their better performance. Gardner's (1993)suggested that there is a problem of multiple intelligence levels which means that all the students cannot learn in the same way because some are able to learn by watching while others can learn better by listening. The role of pictures in making lessons appealing was also acknowledged by Harmer (2001). He cited the recent textbooks along with the design of different newspapers which were intentionally designed to grab readers' interest. In the present research students were given lecture about acid rain. Before this lecture they were having no idea of acid rain and its effects. Those students who were given lecture with the help of pictures were able to understand the concept of the topic much better than who were given lecture without pictures.

Moreover, videos provide the students more opportunities to get engaged with the lessons. They become more capable of predicting the topic of the lesson. In addition to this, teachers may ask various questions to elicit concepts from the students about the text. In this way better class discussion opportunities are created which are very important for chemistry learning. For example, the idea of generation of ions and free radicals is difficult for students to understand with its true meanings. The present study focused to use videos of generation of ions and free radicals for test group. Their interest touched the heights of keenness as compared to those students who were taught without videos.

During the study PowerPoint presentations were also used to make idea of an atom and its fundamental particles more explicit. A class can be mad live by using PowerPoint slides because the lecture can be visualised easily. In case any part of lecture is missed then students can take notes taking help from the slides. The advantages of use of PowerPoint presentations were also emphasized by (Mutar, 2009). He mentioned that the teachers can make their class more dynamic and interesting if PowerPoint slides are used.

The contextualization of the lessons by using visual aids was mentioned as a great advantage by the students during the present work. With the help of visual aids teachers can create contexts and make the lessons effective. Furthermore, correlation between visual aids and concepts of lessons can easily be made by the learners. Moreover, visual aids leave a long-lasting impact on minds of the learners. Mathew and Alidmat (2013) also found that visual materials can make lessons easy to comprehend. Images which students view on the screen can be easily understood and remembered as compared to descriptive reading materials.

Findings

- Performance of students in chemistry at secondary level was improved by using visual aids.
- Visual aids improved knowledge level of students to a significant level.
- Comprehension level was also improved by using visual aids.

Conclusions

Literature visited during the research work, without criticism, has supported the effectiveness of visual aids in the chemistry learning as compared to only verbal communication. Apart from these outcomes, the study has also showed that only few participants were cognizant of visual aid effects on chemistry learning. It was found that learning of students in chemistry was improved only because of use of these visual aids but the institutes were with mere availability of these important aids.

Recommendations

Keeping in view the importance of visual aids in achievements of students in chemistry along with overall development of the students, following are the recommendations of imperative need.

- Infusion of usage of visual aids as a central teaching strategy in chemistry taught at secondary school level.
- The ministry of education must give unambiguous strategy for making the use of visual aids compulsory in chemistry teaching.
- Training exercises for chemistry teachers at secondary school level to get familiar with the effective usage of visual aids must be organized by the concerned authorities.
- School management should contact the organizations which provide these visual aids free for poor and needy students.
- Chemistry teachers must visit the research journals for better understanding of chemistry concepts and new developments and innovations.

Ethical Approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institution and/ or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent

Informed consent was obtained from all individual participants included in the study.

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Archives of Educational Studies
Volume 2, No. 1, 2022, 47-64
https://ares.pk/

Activity-based Curriculum: How do Primary School Teachers Respond to it?

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Abstract
Activity based learning is a set of modern strategies which help learners as well as teachers to achieve learning outcomes accordingly. Observing modern techniques of curriculum, activity-based course components have been included in all level textbooks in Punjab by PTB (Punjab Textbook Board). The present research is a stance to investigate teachers' attitudes towards activity-based course components at the primary level in Punjab, Pakistan. Teachers' attitude related to their understandings, participations and perceptions about activity-based curriculum was investigated through this study. For this purpose, a quantitative survey has been conducted and a Likert scale questionnaire has been used as a tool for data collection. Through random sampling data for this research were collected from public primary schools of District Okara in the province of Panjab, Pakistan. The data were analyzed through different SPSS tests and percentage and it was found that majority of teachers practicing at primary level in Punjab were highly educated and experienced so they had a sufficient awareness about components of activity based curriculum and they participated actively in different activities while they perceive that there were some factors which effected the implementations of some activities consequently it has been suggested that paying attention to the issue these factors could be removed. Furthermore, this research could be helpful for curriculum developers, teachers, executive bodies, administrations and learners as well.

Keywords: *Activity-based curriculum, primary school, Pakistan, curriculum reforms, text-book board.*

Introduction

The most crucial and primary source of the education system is no doubt curriculum and it provides frameworks, directions, and materials for the teaching and learning process. In Pakistan, the curriculum is developed according to different levels of education i.e. primary, elementary, secondary, intermediate, and degree levels whereas, different boards and universities develop curriculums differently according to the needs of particular levels of education. Punjab Textbook Board is one of them and it develops a curriculum for primary, secondary and intermediate level education in Punjab, Pakistan. Observing modern techniques of curriculum, activity-based course components have been included in all level textbooks in Punjab by PTB (Punjab Textbook Board). The present research is a stance to investigate teachers' attitudes towards activity-based course components at the primary level in Punjab, Pakistan.

Jayalaxmi (2016) positions that schooling, teaching, coaching and education are processes through which knowledge, experiences, ideas, skills and other particular informative materials are installed in minds of learners through different approaches and methods by educationists, philosophers, teachers and instructors and they use multiple teaching equipment for this purpose. Jayalaxmi (2016) also declares that a number of syllabus designers, educationists, philosophers and psychologists take up all desired requirements of multiple approaches and teaching methodologies for the betterment of education system.

As for modern schooling is concerned, there is an essential need of highly experienced and skill-oriented teaching experts for schooling of young generation because an efficient and proficient teacher could fulfill pupils' educational desires in finest way (Namitha,2018). Educators are considered as nation developers in any particular social setting because they are engaged for fulfillment of traditions, customs, ethics and other social norms in a particular society, so, the basic responsibility of teachers is to develop generation according to worldwide requirements. In this scenario, teachers or instructors should have grip and command over subject matters and course components designed by national curriculum developers (Haq, 1990). It could be claimed that these are only teachers or coaches who contribute to develop national attitudes in learners' personalities through implementations of course components because only

teachers are expected to do this with devotion and positive behavior (Kassir, 2013).

Old or traditional methods of teaching are not considered as dominant methods of teaching in present educational scenario because traditional methods are teacher centered only and cannot provide better education, on the other hand self-learning or modern instructional technologies provides better education through different skill oriented course contents and activities and the knowledge gained through these skill oriented curriculums becomes a part of learner's memory for the long time (Bunatovich, Khidayevich & Abdurakhmonovich, 2020). In activity-based classroom, teachers should be well trained and competent; they should participate actively in activities and should follow all practical procedures in the classroom because without involvement of teachers, learners do not participate actively and the results would not be furnished according to needs of activity-based curriculum (Kostereliogl u & Yapici, 2016). Kostereliogl u, and Yapici (2016) suggests that in education system for quality of education, it is important for teachers to apply their knowledge, creative techniques and technical skills according to pupils' educational requirements.

Activity Based Learning (ABL) is considered as a technique or strategy which provides maximum opportunities to participate in classroom activities in a particular education system. At school level learning, ABL approach attracts young learners due to its physical involvement in learning process. In this approach, teachers who are involved in activities have to produce and arrange some particular activities for young learners in the classroom additionally, these activities transformed classroom environment into hubs of some particular activities and fruitful learning, furthermore, this approach is helpful in developing instructions, evaluation and reinforcement as well (Anwar, 2019). In activity-based process, students become active learners, they build their creative skills, they learn, what do they want to learn, they build self-confidence and build up their potential which increases self-motivation and self-esteem, so, this process provides effective learning and teaching to the school system (Kupcu, 2012).

In Pakistani education system, teachers and learners might face some challenges in the classroom when they use ABL approach due to non-

availability of instructional technology, whereas, if they are equipped with proper technology, they would produce better results adopting these technologies with their positive attitude towards activity-based curriculum (Younis, 2018). Anwar (2019) argues that approaching ABL, teachers facing some personal challenges related to beliefs about degree of balance whether activities are controlled by teachers or students and who would these activities be done effectively in the classroom.

Society and family of the learners expect moral and appropriate education by the teachers and education system and these expectations effect education system, so, curriculum is designed according to social needs and experienced teachers are appointed to fulfill course objectives. The social needs might vary society to society or culture to culture but during schooling these beliefs and expectations are observed by the educationists, philosophers and curriculum designers as well (Inelmen, 2011). Almost, in all societies, it is believed that female teachers show positive attitudes during teaching that male educators because it is observed that female teachers are more conscious towards their duties than male members (Shittu & Onaite, 2015). Shittu and Onaite (2015) also declared that in activities-based learning female teachers proved themselves active participants of the classroom and female teachers showed positive attitude engaging young learners in activities. Inelmen (2011) advocates that the poor outlook of teacher's personality, negative professional attitude and negative social imagery of teacher's profession effect teacher's status and low down the teaching learning process.

Primary level education in Pakistan occupies a significant place because it provides basic education to the learners. Progress in higher education depends upon the effective course components of primary level education (Haq, 1990). Though, the aim of primary education is not to teach critical thinking or philosophy but it could be claimed that the aim of primary education is to improve children's mental growth, so, in this way pupils are facilitated to grow actively (Fehintola, 2014).

Teachers and learners have parallel role in activity-based classroom because no activity would be done without participations of both. As per requirements of activity base course components, teacher should have active and positive attitude towards activities during class sessions. Teacher would have to encourage learners to participate in activities, he

would have to insist students toward critical thinking and finally he should motivate students towards creativity or self-learning (Kassir, 2013). In Pakistani scenario, in activity-based classroom, teachers have to face many challenges related to laziness, poor interests of students in activities and irregularities in classroom but through positive attitude he can overcome these challenges (Younis, 2018). Prakash (2016) declares that teachers are motivators, guides, mentors and friends of the students because pupils spend a lot of time with them in the school. They know well about likes, dislikes, qualities and behaviors of the students and could estimate appropriate activities according to their needs, so, they can easily find out solutions for problems of the learners. In active classroom, a teacher should be an open-minded person because if he thinks positively, he could respond positively and answer the inquiry of students and respond the needs of his students effectively (Hannafinet et. al., 2014).

In active classroom learning, student have no doubt, central role because he has to participate actively in small group discussion, pair discussion or self-learning to achieve the goals set be curriculum developers. In activity-based classroom students are expected by the course designers to participate actively and help other students by sharing and distributing ideas, experiences, problem solving methods and other activity-based techniques (Hamann, Pollock & Wilson 2012). Hamann, Pollock and Wilson (2012) also declare that using activity-based methods in classroom, the passive behavior of learners can be replaced with active behavior easily. Participants in an activity-based classroom participate actively, they complete assigned tasks, they reflect their interests and express their physical and emotional movements during learning process (Sandercocks 2013).

Statement of the Problem

The purpose of this research was to investigate teachers' attitudes towards activity-based curriculum at the primary level in Punjab, Pakistan. In this modern educational scenario, many reforms have been accorded due to an increased and rapid change in the educational system in the whole world. To observe the needs of this situation, modern technology and educational equipment have become a part and parcel of the curriculum. Today, without practical learning or without learning through activities, it seems

impossible to make students interested in the books though these books have best reading materials. Observing practical requirements of syllabus, PTB (Punjab Textbook Board) produced advanced and well reformed curriculum including activity-based course components at primary level. This study was an exploration of teachers' attitude towards these activities-based course components. This study investigated the interests, practices and perceptions of the teachers towards activity-based curriculum and also investigated the implementations of activities in the classroom at primary level.

Research Questions

1. What is teachers' understanding of activity-based curriculum at primary level?
2. How do teachers participate in activities during class at primary level?
3. How do teachers perceive about the implementation of activity-based curriculum at primary level?

Hypotheses

1. Teachers working in public primary schools have an understanding of activity-based curriculum.
2. Primary school teachers participate in activity-based classroom.
3. There are some factors which effect implementations of activity-based curriculum.

Research Design

The research in hand is a quantitative type of research whereas, results of the research were discussed qualitatively as well. The present research can be classified into survey research which is a type of research where researchers collect data through interviews, questionnaires or observations. To meet the objectives of the present study, this approach was selected by the researcher because it was a useful method to investigate teachers' behavior towards activity-based curriculum. Application of quantitative research with the help of qualitative explanations would enhance the validity of the findings of the research while on the other hand it is helpful to meet the demands of stakeholders, children, teachers, policy makers and

curriculum developers (Alasi, 2018). Rationale to select quantitative method of enquiry was due to a philosophical assumption that it provided perfect, accurate and valid outcomes because it was an objective way of investigation.

The quantitative method of investigation with the help of descriptive analysis is highly beneficial method in survey researches because it allows researchers to modify and signify their outcomes according to research objectives and research questions, furthermore the techniques which are being associated with quantitative methodology appealed perspectives related to postpositivist point of view (Kouta, 2011). Generally, quantitative type of research is applied on data collected in figures through interviews, Likert scale questionnaire, experimental procedures and many other phenomenological research methods (Mishra, 2016). Furthermore, in accordance with quantitative way of investigating, Dilshad and Latif (2013) states that qualitative way of interpretations makes possible to elaborate composed data according to emotions, behaviors, intentions, interpretations, feelings and suggestions of the participants by whom the data was collected through different techniques of interviews or questions.

Instruments for data collection

Quantitative researches generally focus on the data collected in the form of numbers and scores of the participants who are selected by the researchers and participate in a well-planned framework and then results or scores collected after procedure of that particular framework. Keeping in mind the requirements of quantitative research paradigm, the researcher prepared a Likert Scale questionnaire for primary school teachers to investigate their attitude towards activity-based curriculum during their professional practices.

Likert scale questionnaire

In order to investigate teachers' attitude, a Likert Scale questionnaire was developed to survey the practices and perceptions of primary school teachers towards activity-based curriculum at primary level in province of Punjab, Pakistan. All the items selected in this questionnaire were efficiently refined by the researcher to maintain effort and time because

respondents were hundreds in numbers and had to visit in specific time frame.

A researcher might collect data easily if he managed time and space effectively during preparations of questionnaire and interviews during different surveys because collecting data from thousands of respondents is no doubt, a time-consuming activity (Robson, 1994). To meet the requirements of a quantitative research surveys, a questionnaire might be properly designed because this practice provided accurate and precise insight to evaluate how respondents think and the way respondents look into a situation in a specific scenario (Reid, 2003). As for data collecting tools are concerned, a Likert Scale questionnaire had been considered the most useful, effective, and appropriate instrument for different surveys in quantitative research especially in surveys related to attitudes, behaviors, and opinions (Fraenkel & Wallen, 2000).

Questionnaire was chosen by the researcher because other instruments were not as convenient as questionnaire, furthermore, a well-formed questionnaire provided results which would be arranged easily. Besides questionnaire, documentary investigation was a difficult task because, a well-established documentary records were not available in Pakistani educational scenario prom Primary to University level education. Additionally, investigation through observational procedures was also a tough and difficult task due to time limitations and more importantly, to visit whole schools of District Okara could be impossible in connection with observational data collection.

The data was collected through cross sectional survey method by using a questionnaire consists of three parts. First part consists of the items based on the attitude of teachers that shows understanding and second and third parts shows participation and perception towards activity-based curriculum respectively.

The questionnaires were also consisted of demographical information of teachers (gender and locality; rural / urban), academic qualification, professional qualification, experience, and subject taught by them.

Table 1

Parts wise distribution of Questionnaire items.

Part	Attitude	Item Serial #
First	Understanding	1 to 12
Second	Participation	13 to 26
Third	Perception	27 to 38

Research Population

According to PESRP (Punjab Education Sector Reforms Program) school census report (2021) total number of primary schools (male & female) in province of Punjab, Pakistan was 32097, while total number of primary schools in District Okara were 884. So, in this regard, all primary school teachers of 884 Primary School (male and female) serving in District Okara were considered as representative of the whole province and selected as a target population for this study.

Sample of the Study

It is considered that study sample could be a full set of characters which usually, consists of similar components for specific subject matter and represents a standard sampling (Mertens, 2010). Sample was selected randomly from all 884 primary school of District Okara as per needs of present study. In present study, 250 teachers from different male and female public primary schools were selected randomly and they will be requested to fill up Likert scale questionnaire.

Data Analysis

In this study, quantitative technique was used to collect data. For this purpose, a questionnaire having5-point Likert scale were developed. Microsoft Excel was used to analyze the collected data. Details of statistical tools used for data analysis is given as followings:

Test for significance of proportion

Research hypotheses (i) to (iii) established in this work is tested through the procedure of testing of hypothesis about population percentage π_o. This procedure is outlined as follows

Step 1: Hypothesis $H_0;\pi \leq \pi_o$ and $H_1;\pi > \pi_o$

Step 2: Test statistics $Z = \frac{p-\pi o}{\sqrt{\frac{\pi o(1-\pi o)}{n}}}$;

Step 3: In this step critical value against a specific level of significance is calculated to form a critical region. For this purpose, online calculator and available statistical table may be used. Conclusion depends upon calculated value of test statistic given in step 2. If calculated value of test statistic is larger than the critical value, we may not accept hypothesis of insignificance.

***p*-value Calculation and its use**

Alternative procedure for conclusion for the testing of hypothesis discussed above is to use *p*-value. Online calculator may be used for its calculation. In this research p-value for comparison of two regression and correlation coefficients is calculated using the following link Free Statistics Calculator by Dr. Danial Soper.

Conclusion procedure based on *p*-value is as follows

(i) Accept null hypothesis if p-value is more than 0.05 or any pre decided other value.

(ii) Reject null hypothesis if p-value is less than 0.05 or any pre decided other value.

Results of the Study

Statistical analysis

In this part statistical analysis of the data collected about teacher's understanding about activity-based curriculum, participation in activities and perception for implementation of activities is presented. Basic descriptive measures for data are computed. Moreover, hypotheses are tested by using Z-test.

Testing of hypothesis about understanding of the teachers about activity-based curriculum

In this part hypotheses about understanding of the teachers about activity-based curriculum is tested.

Hypotheses

H_0; $\pi \leq 0.50$ (Percentage of the teachers who understand the activity-based curriculum is 50% or less)

H_1; $\pi > 0.50$ (Percentage of the teachers who understand the activity-based curriculum is more than 50%)

Variable	*n*	Percentage	Z value	α	Confidence Interval	*p*-value
Understanding	250	79	9.177	5%	(0.738, 0.842)	.00001*
				1%	(0.716, 0.864)	.00001**
				0.1%	(0.692, 0.888)	.00001***

Calculated value of Z-test and *p*-value = .00001, shows that percentage of teachers who understand the activity-based curriculum is more than 50%, it means majority of the teachers have understanding about the activity-based curriculum.

Testing of hypothesis about participation of the teachers in activities of the class

In this part hypotheses about participation of the teachers in activities of the classes.

Hypotheses:

H_0; $\pi \leq 0.50$ (Percentage of the teachers who participate in the activities of the class is 50% or less)

H_1; $\pi > 0.50$ (Percentage of the teachers who participate in the activities of the class is more than 50%)

Variable	*n*	Percentage	Z value	A	Confidence Interval	*p*-value
Participation	250	53	6.646	5%	(0.658, 0.762)	.00001*
				1%	(0.636, 0.784)	.00001**
				0.1%	(0.612, 0.808)	.00001***

Calculated value of Z-test and *p*-value = .00001, shows that percentage of teachers who understand the activity-based curriculum is more than 50%, it means majority of the teachers participate in the activities of the class

Testing of hypothesis about perception of the teachers to implement the activity-based curriculum

In this part hypotheses about the perception of the teachers to implement the activity-based curriculum is tested.

Hypotheses:

H_0; $\pi \geq 0.50$ (Percentage of the teachers who perceive to implement the activity-based curriculum is 50% or more)

H_1; $\pi < 0.50$ (Percentage of the teachers who perceive to implement thethe activity-based curriculum is less than 50%)

Variable	*n*	Percentage	Z value	A	Confidence Interval	*p*-value
Participation	250	47	-4.114	5%	(0.418, 0.522)	.00002*
				1%	(0.396, 0.544)	.00002**
				0.1%	(0.372, 0.568)	.00002***

Calculated value of Z-test and *p*-value = .00002, shows that percentage of teachers who perceive to implement the activity-based curriculum is not more than 50%, it means majority of the teachers do not perceive to implement the activity-based curriculum.

Discussion and Conclusion

In this thesis, As for behavioral statistics were concerned, responses of 237 teachers showed that they understand well about activity based curriculum while a little amount of teachers i.e 13 students showed little understanding about activity based curriculum whereas, a vast number of teacher i.e 211 participated actively in activities suggested in activity based curriculum

while only 39 teachers paid little amount of interest in activities, furthermore, there were average amount of teacher who perceive about implementations of activity based curriculum at primary level education in Punjab. Results of inferential analysis related to first hypothesis "understanding of the teachers about activity-based curriculum" indicate that majority of the teachers know well about activity-based curriculum as well as about activities designed in the suggested curriculum. Hypothesis related to participation of teachers was analyzed though Z-test indicates that percentage of the respondents who understand and participate in activities is more that 50% which significantly indicated that majority of the teachers participate actively in suggested activities. As for 3rd hypothesis is concerned, it was analyzed through Z-Test and found that majority of the participant was not more that 50% which indicated that majority of teacher did not perceive to implement the activity-based curriculum at primary level.

Findings and discussion of the present research throw light on the conclusion that activity-based learning and teaching in present era is most famous and applicable phenomenon at primary level schooling. It is concluded that curriculum having activity-based exercises have no doubt great impact on learning at primary level in Pakistan and significantly majority of primary teachers know all about activity-based learning and they also know how to implement activities in the classroom for betterment of learning. In the light of respondents' views related to implementations and understandings of activity-based curriculum, it was found that activities were most reliable, interesting and enjoyable way of teaching because primary level students especially students of lower grades liked to perform play like activities which were helpful to engage them in the classroom. Parveen and Mushtaq (2021) declared that the role of activity-based learning and teaching in present scenario of education is very active because it helps teachers to engage students in the classroom as well as it makes possible to apply multiple instructional instruments for teaching different subjects like science, math and languages at primary level.

First of all researcher gathered data related to respondents' area of practice, medium of schools, their professional and academic qualification and so on. After delimitation of research area researcher collected data through

random sampling and the results of the collected data significantly exposed that primary school teachers working in District Okara were highly qualified i.e the majority of the teachers had post graduate academic qualification and also equipped with at least bachelor or masters' professional qualifications which significantly indicated that the teachers practiced at primary level were well educated and well trained. Furthermore, it was explored that majority of schools preferred English as a medium of instruction which indicated that teachers, parents and administrations wished to equipped young learners with modern education because English was concerned a language of science and technology. There were another indicator which proved that public primary schools of Punjab province could provide better education at primary level was experienced teaching faculty. After analysis of items related to teaching experience of the respondents it was found that there were a vast number of experienced teachers because accept 39 teachers all teachers had more than five years teaching experience which significantly indicated that might know all about activity-based curriculum i.e understanding, participations and implementations.

Analysis of all the items related to first research question and first hypothesis "What are teachers' understandings of activity-based curriculum at primary level?" exposed those teachers working in public primary schools in Punjab had sufficient understanding about activity-based curriculum because after analysis of their qualifications 'academic and professional' it was found that majoring of the respondents were highly educated. After analysis of first research question and hypothesis through different SPSS and percentile tests it could be claim that first hypothesis has been approved because above 50% responses favour the hypothesis.

After analysis of research question, No,2 "How do teachers participate in activities during class at primary level? And hypothesis No. 2 "Primary school teachers participate in activity-based classroom" it was found that majority of primary school teachers participated in activities during class. After analysis of all items related to their responses about this research question it was found that calculated value of Z-test and *p*-value = .2354, declared that percentages of teachers who participate in the activities of the classes in rural and urban areas were same, it means attitude of both rural and urban teachers towards participating in the activities of the classes was

same and they participated actively in all activities during the session. Analysis of the items related to 2nd research question and hypothesis exposed that majority of respondents participate actively in activities during class, so, it could be claimed that second hypothesis had been approved because above 50% responses were in the favor of hypothesis.
Third research question "How do teachers perceive about the implementation of activity _ based curriculum at primary level? And "hypothesis "There are some factors which effect implementations of activity-based curriculum" were related to perceptions of the primary school teacher towards activity-based curriculum whether this type of curriculum could be applicable in Pakistani scenario or not. In this regard, it was explored that majority of respondents perceived that there were some factors which might be maintained to implement activity-based curriculum at primary level in Punjab Pakistan. These factors could be related to missing facilities e.g instructional technologies and could be related to external and internal control as well, so, the results significantly approved the third hypothesis.

Pedagogical implementations

It is pertinent to state the pedagogical implementations of the present study. The findings of the present research, clearly, exposed that there are a large number of well trained, educated and experienced teachers teaching in public primary schools in Punjab, Pakistan but unfortunately, the institutions are not equipped with proper instructional technologies like projectors, computers, gadgets or tools kits which support to implement activity-based curriculum. In this regard it could be suggested that providing proper equipment in the schools the activity-based curriculum may be implemented effectively. Furthermore, the present research would be helpful for curriculum designers, teachers, executive bodies and students because it provides a comparative analysis of teachers' attitude regarding understanding, participations and perceptions of teachers at primary level. This research suggests that teachers should be provided proper training and orientations about activity-based curriculum so that they would make lesson planning for implementations of activity-based curriculum at primary level.

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Archives of Educational Studies
Volume 2, No. 1, 2022, 65-79
https://ares.pk/

Perspectives of University Students about Pedagogical Aspects of Facebook

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Abstract
Facebook is the most popular and widely used social networking site because it comprises diverse features. This study sought to observe the practical grounds for using Facebook as a promising pedagogical tool in the light of opinions collected through a survey method with a sample of 800 students from the University of Okara, Punjab Pakistan. The structural Equation Model proposed by Premadasa et al., (2018) is used to find out the relationship between Facebook usage and educational needs. The findings of the study show that Mobility (MO) is the most substantial factor in Facebook adoption; students find it convenient to handle all of their work including educational tasks in an interactive way while they have access to a smartphone. The most significant purpose of Facebook usage is maintaining "Social Relations". Results also reveal that the adoption of Facebook has a positive and significant relationship with the purposes of using Facebook while the purposes of Facebook have a positive and significant relationship with the educational usage of Facebook. But adoption of Facebook shows an insignificant relationship with educational usage of Facebook.

Keywords: *Social networking sites, pedagogical aspects, educational needs, mobility*

Introduction

When it comes to the way we communicate, modern information technologies have brought speedy development and thanks to ICT what we did not know is possible now within few clicks. Several studies explain the way social networking tools backing the purpose of educational usage through interaction, collaboration, information and material sharing (Ajjan

& Hartshorne, 2008; Bicen & Cavus, 2011; Tapscott & Williams, 2010). Students today are living in the digital age and they feel more convenient to interact through online tools rather meeting in a formal way; they have been involved with popular social networking sites from their childhood (Prensky, 2010).

There are 2000 million Facebook users out of 3200 million users of internet (Nowak & Spiller, 2017). Now Facebook is growing more popular among the university students, the researcher focused on educational usage of Facebook in Pakistan. AlphaPro (2018) analyzed that there are 35 million Pakistani Facebook users which are increasing by 17% every year. Researcher aims to recognize the features that inspire the university students for educational usage of Facebook. The current study adapted the Structural Equation Model proposed by Premadasa et al., (2018).

Bullas (2015) stated that 47% of all internet users have Facebook accounts and they perform many activities freely. Abe & Jordan (2013) explain the usage of Facebook in which most of the account holders use it to make new friends, build social relations, bridging the cultural gaps and exchange views with strangers. Stutman (2006) indicated that Facebook provides a verity of features which no other social media site provides and almost 90% of students use these features in their educational activities. Ratliff (2011) explained that people, organizations and even classrooms use Facebook to communicate personal, business and learning connections.

However, Facebook provides facilities for information sharing by using features like immediate messaging, links, pictures and videos etc. Schwart (2009) elaborated that Facebook forum is open to communicate among students.

Rationale of the Study

Facebook through diverse features is considered an important educational strategy at higher education institutions. Unfortunately, in Pakistan, perceived Facebook usage's impact as a pedagogical tool is unclear, even it is owned by an increasing number of students. Despite all the persuasive features of Facebook in education, this tool is not formally incorporated as an educational instrument in the academic environment in Pakistan. Current study follows the Structural Equation Model modified by Premadasa et al., (2018) to find out the local students' perceptions towards their educational needs through Facebook.

Objectives

- To conclude perception of university students about Facebook adoption and its usage as a pedagogical tool for academic learning.
- To determine the key factors that may influence or stimulate university students in predicting Facebook adoption and its usage for educational activities.

Literature Review

By analyzing of previous studies provide an overview of current literature pertaining to adoption of Facebook, its uses in academic events, as a teaching tool for professors and perceptions of students to use it in their studies and course-related activities. With major focus to the Facebook; issues such as privacy, technological development, adoption and diffusion of new innovations, working memory and attentional skills were discussed in past by different scholars (Debatin, Lovejoy, Horn, & Hughes, 2009; Alloway & Alloway 2012; Mazman & Usluel, 2010; Fogel & Nehmad, 2009).

The new innovation always come up with positive and negative reactions, so as two schools of thoughts are present within the scholarly debate on the usage of Facebook and the results of the previously conducted studies can be mentioned here as evidence (Ellison, Steinfield, & Lampe, 2007; Sheldon, 2008). Tucciarone (2009), describes students' efforts to get updated with the important notices and urgent announcements about different academic deadlines; they utilized the University Facebook pages and groups during their research on Universities and Colleges. One in 12 people from all over the world have a Facebook account (Siegle, 2011). Heiberger & Harper (2008) conducted an empirical study and reported that Facebook has 85% of market shares of four-year colleges and universities in USA.

By using Facebook features, students can learn a great deal of collective knowledge and enhance critical learning by interacting with like-minded people (Moskaliuk, Kimmerle & Cress, 2009). Karimi and Khodabandelou (2013) stress upon the appropriate features of Facebook that would be supportive for students which can be helpful in their studies. Some of the departments at University of Florida as well as Stanford University in the USA were collaborating and sharing their research data, lectures and seminars with faculty and students by using diverse features of Facebook

(Fernàndez & Gil- Rodríguez, 2011). Bicen's and Uzunboylu's (2013) findings show a significant relationship between professors and students while communicating academic stuff through Facebook.

Significance of Study

After reviewing the literature, the researcher has found that there a lot of tasks required to explore the Facebook role in educational system of Pakistan. The researcher aims to explore the features that influence university students to adopt Facebook and fulfill educational purposes by applying Structural Equation Model developed by (Premadasa et al.) in 2018. The researcher hypotheses that Facebook adoption explicitly involved in predicting the purposes of using Facebook and purposes will determine the educational usage of Facebook. Current study will guide us to improve the way of use Facebook and can use it as a pedagogical tool under the light of opinions from the students collected through an adapted questionnaire.

Population of the Study

The population contains estimated 5000 students studying in 13 different departments at Okara University, Pakistan in the year 2021. This public sector university chooses to make contribution of students from all four provinces of Pakistan with diversity of social and economic backgrounds. Systematic sampling technique is used.

Research Instrument

The questionnaire proposed by Premadasa et al., (2018) is applied to include the answers from respondents to test the Structural Equation Model. The questionnaire is divided into four portions which contain demographic features, common information, and examination of Facebook adoption, usage for educational and other purposes. Second and third portion of the questionnaire is based on five points Likert-scale starts with "strongly disagree" to strongly agree".

Procedure

Cronbac's alpha test is used to measure the reliability of variables. If the reliability score is equal to or more than 0.7 then data might be greatly reliable and consistent. At the next phase of study, SEM (Structural

Equation Model) is used to check in the significant relations between observed and latent variables.

Results

Table 1

Demographics

Item	Frequency		%
Gender	Male	256	42.9
	Female	341	57.1
Age	18-20	208	34
	21-23	280	46
	24-26	83	13.9
	26+	26	4.4
Program of the Study	BSc. Honors	492	82.4
	MSc.	80	13.4
	PhD	25	4.2
Frequency of using Facebook	Once a day	30	5
	2-5 times daily	230	38.5
	6-10 times daily	240	40.2
	11-15 times daily	43	7.2
	16-20 times daily	45	7.5
	More than 20 times daily	9	1.5
Purposes of using Facebook	Socialization with friends	259	43.4
	Communicate with batch mates about education topics	111	18.6
	To let other people know about latest happing	40	6.7
	Connect with lost contact people	130	21.8
	Establish professional relationships	20	3.4

	To flirt	19	3.2
	Others	18	3.0
Network size (Friends on Facebook)	1-50	135	22.6
	51-100	98	16.4
	101-500	245	41.0
	More than 500	119	19.9
Number of academic related professionals (teachers, lectures) in your network	1-1011-20	449	75.2
	21-30	108	18.1
	31-40	15	2.5
	More than 40	10	1.7
		15	2.5
Opinion about using Facebook	It would be convenient	79	13.2
	It would be an opportunity to be in touch with classmates on SNSs	403	67.5
	Facebook is personal but not for Education	53	8.9
	Personal information would not be Protected Other	31	5.2

Above table 1 shows the frequency of total 597 (100%) students, highest frequency of friends was 245 (41%). Considering academic-related professionals in their Facebook friend list, out of total 597(100%), highest frequency of students counted as 449(75.2%) only 15(2.5%) students had more than 30 academic professionals in their friend list on Facebook. Last demographic question explained that 79() students had opinion about using Facebook because they feel it a convenient tool, 403(67.5%) students had found it as an

opportunity to connect with friends, 53(8.9%) students had an opinion that Facebook is a SNS and cannot be used as pedagogical tool, 31(5.2%) students had an opinion about privacy issues, and 31(5.2%) students were in another category.

Table 2

Reliability Analysis

Construct	Dimension	Reliability
	PU	0.729
	PEU	0.867
	SI	0.850
Adoption		
	FC	0.739
	CI	0.777
	MO	0.913
	SR	0.834
Purpose	WR	0.718
	DA	0.745
	CM	0.723
	C	0.799
Educational Usage	RMS	0.823
	IR	0.885

Above table 2 demonstrates the adoption of Facebook. Reliability scores of six used indicators are: Perceived Usefulness (PU) was 0.729, PEU (Perceived Ease of Use) was 0.867, SI (Social Influence) was 0.850, FC (Facilitating Conditions) was 0.739, CI (Community Identification) was 0.777 and MO (Mobility) factor was 0.913. Reliability score of three used indicators for purposes of using Facebook are: Work-Related (WR) was 0.718, Daily Activities (DA)

was 0.745 and Communication (CM) indicator was 0.723. The internal reliability scores three used indicators for Educational Usage are: C (Collaboration) was 0.799; RMS (Resource/Material Sharing) was 0.823 and 0.885 Interactivity factor. The scores of reliabilities of indicators were more than 0.7 which decides that all the observations were greatly reliable and consistent.

Table: 3

Matrix of Pearson Correlation

Variable	PU	PEU	SI	FC	CI	MO	SR	WR	DA	CM	C	RMS
PEU	0.758											
SI	0.351	0.898										
FC	0.347	0.362	0.724									
CI	0.536	0.601	0.274	0.823								
MO	0.324	0.555	0.268	0.325	0.767							
SR	0.408	0.423	0.355	0.384	0.591	0.831						
WR	0.315	0.281	0.258	0.395	0.467	0.349	0.752					
DA	0.288	0.464	0.440	0.337	0.569	0.494	0.571	0.888				
CM	0.329	0.153	0.251	0.461	0.308	0.310	0.433	0.586	0.773			
C	0.211	0.297	0.305	0.367	0.360	0.229	0.338	0.450	0.410	0.861		
RMS	0.207	0.377	0.237	0.388	0.474	0.268	0.439	0.497	0.477	0.478	0.701	
IR	0.415	0.422	0.261	0.394	0.470	0.462	0.514	0.494	0.545	0.435	0.462	0.788

Note. Perceived usefulness = PU; Perceived ease of use = PEU; Social influence = SI; Facilitating conditions = FC; Community identification = CI; Mobility = MO; Social relations = SR; Work-related = WR; Daily activity = DA; Communication = CM; Collaboration = C; Resource/Material sharing = RMS; Interactivity = IR.

Above table 3 shows the Pearson correlation matrix's results which applied to explore the relationships among variables. The values were PU and PEU ($r = 0.758$, $p < 0.05$), SI and PEU ($r = 0.898$, $p < 0.05$), FC and SI ($r = 0.724$, $p < 0.05$), CI and FC ($r = 0.823$, $p < 0.05$), MO and CI ($r = 0.767$, $p < 0.05$), SR and MO ($r = 0.831$, $p < 0.05$), WR and SR ($r = 0.752$, $p < 0.05$), DA and WR ($r = 0.888$, $p < 0.05$), CM and DA ($r = 0.773$, $p < 0.05$), C and CM ($r = 0.861$, $p < 0.05$), RMS and C ($r = 0.701$, $p < 0.05$), and interactivity and RMS ($r = 0.788$, $p < 0.05$). The values $r > 0.5$ and $p < 0.01$ show that all of the variables were significantly correlated with each other.

Table 4

Fit Indices for selected Model

Fit indices	fit Perfect	fit Accepted	fit Model results
	< 3	3 < < 5	1.432
RMSEA	0<RMSEA<0.05	0.05<RMSEA<0.08	0.451
IFI	0.95<IFI<1	0.09<IFI<0.95	0.874
TLI	0.95<TLI<1	0.90<TLI<0.95	0.814
CFI	0.97<CFI<1	0.95<CFI<0.97	0.969
GFI	0.95<GFI<1	0.90<GFI<0.95	0.883

Table 4 show that all the indices surpassed levels of acceptance and reached to perfect fit levels.

Table 5
Path Coefficient

Latent Variables	Observed Variables	Path Coefficients	p > |z|
Adoption	PU	0.71	0.000
	PEU	0.68	0.000
	SI	0.75	0.000
	FC	0.52	0.000
	CI	0.81	0.000
	MO	0.85	0.000
Benefits	SR	0.76	0.000
	WR	0.69	0.000
	DA	0.74	0.000
Educational Uses	CM	0.68	0.000
	C	0.67	0.000
	RMS	0.71	0.000
	I	0.82	0.000

Above table 5 shows the significance of observed variables in predicting latent variables. It shows that students feel more convenient in Facebook adoption when they have access to a smartphone. Community identification was the major element in predicting Facebook adoption. Results revealed that rest of the coefficients of selected variables like PU (0.71), PEU (0.68), SI (0.35), and FC (0.52), were positive and significant towards Facebook adoption. The results of observed variables like SR (0.76), WR (0.69) and DA (0.74) are in favor and impacted the aim of Facebook usage. The coefficients of selected variables such as CM (0.68), C (0.67), RMS (0.71) and I (0.82) revealed positive and highly significant relationships to predict educational usage.

Table 6

Path Coefficient and Model Fitted Values

Relation	**Path Coefficients**	**R^2-value (%)**
Adoption of Facebook vs. Purposes of Facebook Usage	0.902	0.813
Purpose of using Facebook vs. Facebook usage in Education Facebook	0.732	0.849
Adoption of Facebook vs. Facebook use in Education	0.333	0.386

Above table 6 shows that 0.902 was the standardized path coefficient of Adoption of Facebook vs. Purposes of Facebook Usage and determinants are 81% fitted approximately of variance to purpose for using Facebook. Result expressed the variable of adopting in favor and greatly influenced aim of Facebook usage. Result directed that 0.732 was the value of standardized path coefficient and Facebook usage purpose 85% fitted approximately with the model factors of variance to Facebook usage in Education. The relation between adoption of Facebook and use in education was different as 0.333 was the standardized path coefficient and 38% fitted variance of model determinants of model 38% fitted variance to Facebook usage for educational purpose which was a weak relationship.

Discussion

The international academic arena has been evolving into new patterns and internet technologies are the most important factors in this transformation. These freehand features of Facebook app provide more space and freedom to improve the learning experience through critical discussions on a certain topic. Facebook through its potential features and significant features can be utilized as a substantial pedagogical tool but so far this dimension has not been explored by Pakistani academia. The selection of topic is based on firstly its popularity especially among university students and secondly its potential features.

The differences based on culture may have an impact on the way a certain community thinks about different aspects of daily routine life. These differences really matter to understand the perceptions, behavior, learning styles, and attitudes of students. This study is an effort to bridge the gap by using digital technology in universities; to check in the students' opinion about Facebook usage as a pedagogical tool. The consequences of this study show that Mobility (MO) is the main indicator in foretelling the variable "Facebook adoption"; Pakistani university students are more convenient to accept it when they have access to a smartphone because they can quickly manage all of their formal/informal tasks. Students are more inclined to maintain social relations, interact and communicate with their friends, relatives, and colleagues by using Facebook. Ardent and vibrant response from students about use of Facebook in educational activities is a positive sign. The findings show a positive attitude among students' opinions towards Facebook usage as a pedagogical tool.

However, important point is that it was not originally designed to meet pedagogical demands but potential Facebook usage can enhance the learning outcomes. Educationists must need to plan the learning process in a well-structured way; this time demands to revisit the course objectives, learning strategies and students' expectations. Facebook can be useful tool along with potential features that can be used by professors as a part of their teaching methodologies to engage the young class for interactive participation and critical learning. These suggestions are important to get the full advantages of Facebook as a pedagogical tool.

Conclusion

In the current era of versatile technology, Facebook among other social networking forums is becoming more and more popular among masses and students because of its features diversity. Now users can easily get access to Facebook by smart phones. The basic purpose of using Facebook is to maintain social relations. But users also build new relationships and interact with other user globally by using Facebook. Students and faculty members fulfill their educational needs too from different Facebook features. Facebook also offer many amazing features like face to face conversations, messaging, calling, videos, memes and marketing platforms as well.

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University of Okara

Archives of Educational Studies (ARES) is published by:
Department of Educational Studies
University of Okara, 2-km Multan Road, Renala Khurd Bypass, Okara, Pakistan
E-mail: editor@ares.pk, Website: https://ares.pk/ , Phone: +92 335 7570 450