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Dr. S.K. Bhatia**



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Would like to appeal to the learned readers to send us their views, counter views, suggestions, comments, and observations etc. via “Letters to Editor” (which will be published in the next Issue) on the articles published in this Journal so that an academic discussion may start and our efforts may become more participative and thereby more meaningful and interesting.

Editor-in-Chief

The Themes for the next Issue Jan-2022

Section I.

1. Valuing professionalism and training in Teacher Education courses.
2. Changes in perspectives on areas of research in Teacher Education.
3. Perspectives on how learning in Curriculum and Pedagogy are demonstrated in Teacher Certification Programs.
4. Perspectives on effective Evaluation Practices in Teacher Education Programs.
5. Innovations and Innovative practices in Teacher Education Programs.
6. Diversity and Inclusion: Different International perspectives.
7. Ensuring access and equity in high quality Teacher Education programs.
8. ICT-related Innovations and practices in Teacher Education Programs.
9. Policy perspectives in Teacher Education.
10. Reports on related conferences, seminars and workshops, including International offerings.
11. The Prolonged Online Mode of Teaching-learning - Challenges, Innovative experiments, Findings.

Section II. Innovative Experiments in Schools:

- Teachers’ Professional Growth
- Optimising Students’ Achievement
- Students All-round Development
- Experiments in the area of Experiential Learning.
- Objective Evaluative Strategies During the Prolonged Closure of schools.

Editor-in-Chief
Dr. S.K. Bhatia

Editorial



I want to express my heart-felt pleasure in handing over the third issue of the International Journal of Teacher Education and Teaching (IJTET) to our esteemed readers. For the forthcoming July 2021 issue of IJTET, the Editorial Board had come across the sad feelings of the irreparable impact of the Covid 19. Our senior most member of the Advisory Board, Prof. S.P. Pathak became the victim of this deadly disease and left for his heavenly abode on April 29, 2021. All the members of the Advisory Board, the Editorial Board, all the contributors and the subscribers of IJTET pay their homage to the departed soul and pray that it rests in peace. The void, caused due to his death is a very big blow to the family members, IJTET family and to the professional discourses often shared by him, and it can never be filled.

The editorial views are shared biannually. Like, in the previous half year, during the first six months of the current year also, most of us, excepting the frontline workers, remained indoors, waiting for the pandemic to be controlled. The governments, all over the world, are doing their best and it is certain that the situation would not be that worse as it was during the 1918-20 pandemic, when around 500 million people worldwide were infected and about 20 to 50 million people lost their lives.

As is evident from the contributions of our authors, some of them completed their experiments before the intensity of the current epidemic and completed their respective reports during their forced stay at home and others did their innovative experiments online. However, the deadly Covid 19 could not dampen the spirits of our worthy authors and they, with their perpetual enthusiasm, continued producing the need-based research papers and articles. The broad areas of themes for the present issue, as streamlined by our Editorial Board, were well kept in mind by our well-informed contributors and a large number of articles were received for the present issue. Some authors concentrated on producing research papers in their respective fields, like managing online teaching effectively, subject-specific linkages with the technological developments, determining multimedia effectiveness in classroom teaching, a few Phenomenological Studies, Pedagogy of Experiential Learning and so on.

Many problems, generated by the pandemic, have been encountered for the first time by different sections of the society. One category of sufferers are the students, particularly, those who had to appear in the board or university final examinations and who were seeking admissions to join some higher level academic or professional courses or were hopeful of getting some job or absorption in some business or profession. In many cases such examinations were cancelled and the authorities had to rely on their past performance for declaring the results, not to the satisfaction of those who work very hard a few months before the examination and manage to score good marks/grades.

Volunteering services are common in many countries which are part of the eligibility to appear in board examinations. It became difficult for the students to earn such eligibilities optimally during the Corona 19 outbreak. Many of such students had to adapt and create opportunities for them to participate in service learning projects, community service acts, and volunteerism from home. Though they were able to earn their eligibility for appearing in the examinations, the satisfaction level was at the low ebb, as serving with hands can never be equivalent to the online services.

It was, at one stage, being thought that online teaching would never be comparable to face-to-face teaching. I happened to observe some online classes of the school teachers. Initially, the impression was that it was far inferior to classroom teaching. But the continuous feedback to the teachers had positive implications and the stage came when their classes started bubbling with interest and enthusiasm. The teachers started using white-boards, verbal interactions and the use of multimedia according to the nature of the content. Elsewhere, in many countries, such innovations in online teaching were tried out. The Editorial Board invites papers from teacher educators and school teachers on how they developed innovative online teaching techniques and what were the results.

A comprehensive list of themes for the next issue has been annexed before the editorial page and the same will also be released with the ‘Call for Papers’. The Editorial Board is of the view that authors should be given full freedom to work on any theme relating to teacher-education and innovative school practices. Though the themes given cover a vast area of teacher education and school teaching, the contributors are free to write according to their interests and aptitudes.

No doubt, Covid 19 has obstructed the scholars in doing the real time face-to-face educational experiments, it could not stop them in keeping their torch burning with their zeal of trying out their innovative ideas and adding to the treasure of knowledge. IJTET will never hesitate in publishing the scholars’ constructive contribution in the field of teacher and school education. With this, our Editorial Board extends the best wishes to all the stakeholders and requests all to observe the protocols of Covid 19.

Dr. S.K. Bhatia
Editor-in-Chief

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RESEARCH ARTICLES

Mentoring Practices of Cooperating Teachers of English in Selected Secondary Schools

Sherry Ann C. Medrano

Abstract

In the conduct of practice teaching in the Philippines, mentoring refers to a nurturing process in which a highly skilled or experienced teacher provides support and encouragement to a young Pre-Service teacher. A mentor or cooperating teacher refers to a teacher who is assigned to guide the student teacher in the development of professional competencies, attitudes, and behaviors. Mentoring plays a very significant role in the Pre-Service teachers' practicum journey as it enables them to be under the supervision of an experienced teacher in terms of classroom management, lesson planning, use of varied teaching strategies, and assessment. Traditional evaluation procedures usually entail downward movement which is the evaluation of cooperating teachers or mentors on the overall performance of the teacher trainees in the teaching-learning process during practicum. Pre-Service teachers are not often given the voice to assess the mentoring practices of cooperating teachers, rendering the student teachers silent in the process of assessment. This study aimed to challenge the tradition by allowing Pre-Service teachers to assess the mentoring practices of cooperating teachers through survey and focus group discussion. The study revealed that Pre-Service teachers of English find the mentoring practices of cooperating teachers to be very satisfactory. This research ends with recommendations for improvement of cooperating teachers in mentoring the 21st century Pre-Service teachers.

Key Words: Mentoring Practices, Cooperating Teachers, English, Secondary Schools

1. Introduction

Mentoring is generally described as the process whereby an expert provides wisdom and guidance to a less experienced one. This process usually involves advising, coaching, and counseling which aims to build good relationship between a mentor and mentee and focuses on the mentee's growth and development. In the context of teacher education, mentoring plays a vital role in developing teacher expertise. Fairbanks, Freedman and Kahn (2000) define mentoring in teacher education as complex social interactions that mentor teachers and student teachers' construct and negotiate for a variety of professional purposes. In addition, Maphalala (2013) says that mentor teachers are key players in launching student teachers into the teaching profession. Furthermore, mentors or cooperating teachers are recognized for their practical knowledge of the profession, which validates the theoretical knowledge learned by the Pre-Service teachers from school. Thus, the development of Pre-Service teachers in the field depends on the quality of mentoring provided by cooperating teachers.

Mentoring helps teachers improve classroom practices, deepen their knowledge, and learn professional responsibilities. Graham (2006) mentions that two components are crucial to the success of the practice teaching experience: First, the mentor teachers who guide and support the Pre-Service teachers and second, the location where the teaching experiences occur. According to the Teacher Induction and Mentoring Brief

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of the American Institute for Research, mentoring Pre-Service teachers, the role of the mentor is to regularly conduct classroom observations, reflection and collaboration and problem solving, in order to get things done very well.

Moreover, the Teacher Induction Mentoring Brief of the American Institute for Research in 2015 describes effective mentors as not only good in teaching, but also able to articulate the art of teaching—to convey what they do and why to achieve positive results. It further explains that mentors must have strong interpersonal skills, the ability to build a trusting rapport, and the capacity to respond to the challenges faced by teachers taking on new assignments so they can transfer that knowledge to beginning teachers. Moreover, effective mentors should be responsive to a wide range of communication styles, adept in problem solving, engaged in self-reflection, and active listeners.

A national nonprofit organization in the United States of America named New Teacher Center (NTC) is dedicated to strengthening the practice of beginning teachers and on improving student learning by accelerating the effectiveness of teachers and school leaders at all levels. In 1988, this organization was founded by teachers and built capacity within districts and district partners to drive student achievement, teacher effectiveness, and teacher and leadership development. Also, it conducts research, develops and administers induction and mentoring programs for new teachers and school administrators, and consults with organizations, educational leaders, and policymakers on issues related to new educator support.

In line with the implementation of Pre-Service teacher training in the Philippines, mentoring refers to a nurturing process in which a more-experienced teacher or cooperating teacher extends expertise to a teacher trainee, especially in the development of effective classroom competencies, professional attitudes and behaviors. Hence, mentoring plays a big role in preparing Pre-Service teachers in the actual world of teaching. Primarily, the aim of pairing a Pre-Service teacher with a skilled teacher or mentor during practice teaching is to establish good mentor-mentee relationship and deepen their understanding of classroom management, lesson planning, teaching methods and strategies, assessment, etc.

In the Philippines, the Commission on Higher Education (CHED) CMO No. 3, series of 2004, highlights experiential learning courses—field study and practice teaching as integral components of the New Teacher Curriculum. These experiential learning courses are intended to provide Pre-Service teachers with practical learning experiences in which they can observe, verify, reflect on, and actually experience different components of the teaching learning processes in actual school settings.

Practice teaching, according to Ulla (2016), is an integral part of any teacher education curriculum as it is a good avenue for practicing teachers to apply the theories, they learned in the real classroom setting. Thus, to make sure that Pre-Service teachers receive optimum teacher training, the Guidelines in the Deployment of Pre-Service Teachers on Experiential Learning also known as Department of Education (DepEd) Order No. 3, series of 2007 states that a student teacher from a Teacher Education Institution (TEI) must be assigned to a qualified cooperating teacher/mentor of the respective partner school. Also, it presents the specific duties and responsibilities of cooperating teachers in Pre-Service teacher training. According to Mangila (2018), the quality of education in the Philippines will be improved through producing teachers who are adequately prepared to perform their varied roles and functions.

Effective mentoring plays a significant role in a Pre-Service teacher's practice teaching experience. Hidayu Shafie, Ahmad-Sultani, Roselan, & Noori (2017) explain that mentoring styles of a supervisor will have effects towards the supervisee either in his work or his own personal growth. Moreover, Spencer (1996) adds that there are different mentoring approaches practiced by supervisors, namely: 1) The **letting go style** where the supervisor gives the supervisee enough time to accomplish things, thus avoiding rush and pressure; 2) The **active listening style** where the supervisor asks the mentee questions during their mentoring session and gives him the chance to summarize and assess his progress; 3) The **advisory style** where the supervisor provides suggestions to the supervisee on how to solve problems encountered and suggests alternatives to improve performance; 4) The **prescribing style** in which the supervisor provides specific instructions to the supervisee on how to deal with difficulties; and 5) The **cooperative style** where the supervisor involves the supervisee in identifying solutions to solve problems as they share opinions and ideas freely.

The cooperating teacher, according to Bell and Gilbert (1994) should have opportunities to share ideas, successes, and challenges as a way of developing their own professional practice. Also, Constantinescu (2015) concludes that mentoring represents an opportunity for experienced teachers to increase their professional status. Thus, in order to become teacher-mentors they should complete specific training courses. Also, the study found out that the main competencies necessary for a teacher-mentor are effective communication, practical activities than theoretical activities, social and relational competencies, and competencies in planning, organizing, and analyzing.

In addition, the study of Izadinia (2016) on mentor teacher and Pre-service Teacher relationship reveals that mentor teachers do create changes, however small, in aspects of Pre-Service teachers' identity such as confidence and voice. Moreover, it is through maintaining a supportive and positive relationship with Pre-Service teachers that they can develop a stronger sense of teacher identity. Furthermore, she also argues that teachers having their voice and confidence are associated with teacher retention. Hence, efficient mentor teachers are important in honing the teachers-to-be.

According to Sayesi and Paulsen (2012) identification of specific mentoring practices of cooperating teachers by the student teachers across a range of teaching areas shall be taken into consideration. This idea only suggests that it is one significant aspect of Pre-Service teacher training, thus, it is also important to assess the quality of mentoring practices provided by cooperating teachers to Pre-Service teachers during practice teaching. However, evaluation in Pre-Service teacher training in the Philippines commonly entails downward movement, that is, assessment of cooperating teachers on the overall performance of the student teacher in the Pre-Service teacher training. Hence, this study is a move to assess the mentoring practices and styles of cooperating teachers in practice teaching.

2. Statement of the Problem

The study primarily aimed to evaluate the mentoring practices of cooperating teachers as perceived by Pre-Service teachers of English.

Specifically, it sought to determine the : (a) level of satisfaction of Pre-Service teachers on the mentoring practices of their cooperating teachers; and (b) the mentoring style practiced by the cooperating teachers.

I. Methodology

A. Research Design

The study made use of the descriptive research design and mixed- method research designs. Quantitative method is applied in gathering data using survey, while qualitative method was done to enrich the study through focused group discussion with selected respondents.

B. Population, Sample Size, and Sampling Technique

This study involved the participation of thirty-seven (37) Pre-Service teachers from one of the sections of Bachelor of Secondary Education, major in English at the Polytechnic University of the Philippines, School Year 2017-2018. These Pre-Service teachers were deployed in different DepEd public secondary schools in Metro Manila during their practice teaching.

C. Research Instrument

The study utilized a modified-survey questionnaire to identify the level of satisfaction of Pre-Service teachers of English on the mentoring practices of their cooperating teachers or mentors during practice teaching, as well as the dominant mentoring style they practiced. Another instrument was a set of interview questions used in Focus Group Discussion.

In order to gather qualitative data as support to quantitative data, the researcher randomly selected 10 out of 37 students who participated in the Focus Group Discussion. This aimed to provide the participants' further insights and opinions to enrich the study. The Focus Group Discussion involved questions with emphasis on ways as to how the cooperating teachers mentor their student teachers.

D. Data-Gathering Procedure

The researcher sought permission from the Pre-Service teachers of English to conduct a short survey about the mentoring practices of their cooperating teachers during their practice teaching. First, the respondents were asked to assess their level of satisfaction on the mentoring practices of their cooperating teachers using a 10-item questionnaire. Then, they also answered a five-item questionnaire which asked about how often the Pre-Service teachers encounter certain mentoring styles of cooperating teachers.

After tabulating and analyzing the quantitative data, ten students were randomly selected who agreed to participate in the Focus Group Discussion. Each of the partner schools where the Pre-Service teachers of English had their practice teaching ,was represented. The purpose of the FGD was to gather qualitative data to further analyze the survey responses of the Pre-Service teachers on the mentoring practices of their cooperating teachers.

E. Statistical Treatment of Data

This study used weighted mean as statistical tool to analyze the collected data on the level of satisfaction of the Pre-Service teachers of English on the mentoring practices, was well as the mentoring style mostly practiced by the cooperating teachers.

II. Results and Discussion

Table 1 Level of Satisfaction of Pre-Service Teachers on the Mentoring Practices of Cooperating Teachers		
Mentoring Practices	Weighted Mean	Verbal Interpretation
1. My cooperating teacher and I meet on a regular basis.	4.81	Extremely Satisfied
2. My cooperating teacher introduces me to instructional approaches/strategies that I am not aware of.	4.08	Very Satisfied
3. My cooperating teacher and I collaborate to plan instruction for our students.	4.08	Very Satisfied
4. My cooperating teacher consistently anticipates the things I need to improve.	4.41	Very Satisfied
5. My cooperating teacher always expects me to bring up the topics/problems we discuss.	3.97	Very Satisfied
6. My cooperating teacher is always willing to listen to me.	4.38	Very Satisfied
7. My cooperating teacher encourages me to think and reflect about the effectiveness of my teaching.	4.27	Very Satisfied
8. I receive meaningful feedback about my teaching from my cooperating teacher.	4.27	Very Satisfied
9. My cooperating teacher helps me grow as a professional teacher.	4.43	Very Satisfied
10. I am very satisfied with the level of support I receive from my mentor teacher.	4.43	Very Satisfied
General Weighted Mean	4.31	Very Satisfied

Table 1 presents the level of satisfaction of Pre-Service teachers of English on the mentoring practices of their cooperating teachers. As shown in the Table 1, the Pre-Service teachers of English are extremely satisfied on the practice that their cooperating teachers meet them on a regular basis during practicum, which obtained a weighted mean of 4.81. The rest of the mentoring practices items are rated as “very satisfied,” with weighted means 4.08, 4.41, 3.97, 4.38, 4.27, and 4.43, respectively. This means that the cooperating teachers of the Pre-Service teachers of English are efficient in mentoring in the aspects of collaboration, giving feedback, solving problems, reflection, and others. Therefore, the level of satisfaction of Pre-Service teachers on the mentoring practices of cooperating teachers obtained a general weighted mean of 4.31, with verbal interpretation of “very satisfied”.

The Pre-Service teachers show agreement to the results. Their responses in the Focus Group Discussion reveal they are satisfied with their cooperating teachers because they are very supportive, always willing to

listen to them, and provide them tips to improve their teaching performance. Some of the notable responses in the Focus Group Discussion are as follows:

“My cooperating teacher trusts me and fully supports me in my activities in the classroom.”

“He is an admirable teacher. He unselfishly shares with me the teaching techniques and strategies he knows.”

“She never fails to listen to me. She teaches me real life lessons in teaching.”

“I really appreciate my mentor. She fully supports me in my practice teaching journey.”

“I love the way my cooperating teacher gives feedback. She tells me the things I need to hear, which pushes me to do better.”

“He is very good at giving me feedback, which he consistently does. My mentor’s constructive criticisms helped me improve my classroom performance.”

“Whenever my cooperating teacher and I reflect on my classroom performance, I learn a lot.”

“In my case, my cooperating teacher always helps me in finding solutions for some problems encountered during my practice teaching. She is very hands on.”

“My cooperating teacher does not just tell me what to do. She listens to my suggestions and ideas in teaching.”

“She lets me reflect on my everyday teaching and she values my emotions whenever we have consultations.”

These above-stated findings found similarity in the results of the study of Ambrossetti (2010), which concludes that student teacher-mentees prefer a mentoring relationship that is supportive and comfortable. Moreover, they want a mentor from whom they can learn rather than judging them, and they prefer a mentor who provides them lots of opportunities for learning.

Table 2 Mentoring Style of Cooperating Teachers Mostly Encountered by the Pre-Service Teachers		
Mentoring Style	Weighted Mean	Verbal Interpretation
Letting Go Style	4.21	Often
Active Listening Style	4.19	Often
Advisory Style	4.24	Often
Prescribing Style	4.27	Often
Cooperative Style	4.14	Often
General Weighted Mean	4.21	Often

Table 2 shows the mentoring style of the cooperating teachers, mostly encountered by the Pre-Service teachers of English. As presented, the five mentoring styles, namely: letting go style, active listening style,

advisory style, prescribing style and cooperative style got weighted means of 4.21, 4.24, 4.19, 4.27, and 4.14, respectively. These are all interpreted as “often”, thus, the general weighted mean of 4.21 is also interpreted as “often.” These findings imply that the Pre-Service teachers perceive a balance among the mentoring styles practiced by the cooperating teachers.

After getting additional insight from the respondents through the Focus Group Discussion, their responses explain that the cooperating teachers serve as good role models who unselfishly share their own teaching experiences, and at the same time give the student teachers freewill to do things on their own. Some of the quoted responses are:

“He lets me explore different classroom strategies and always approaches me whenever there are things that I need to improve.”

“I like how my cooperating teacher gives me freewill to decide on my own classroom strategies, but still monitoring whether what I delivered was good or not.”

“My teacher allows me to develop my own instructional materials and classroom activities. Also, I like her because she is always there to listen when I reflect about my performance.”

“I am properly guided by my cooperating teacher when it comes to mentoring me. She always gives me lots of good suggestions on how to improve my classroom performance.”

“She allows me to think and formulate ideas for our lessons and she taught me to be strong and independent in this practice teaching journey.”

“We regularly have consultation after my daily performance. After assessing my teaching, my cooperating teacher and I collaborate in preparing classroom activities.”

“I felt empowered in my practice teaching. First, my teacher taught me everything, then gave me the freedom to execute those things.”

“I really like it when my cooperating teacher makes me feel that I am free to design my own lesson and activities.”

“My cooperating teacher is a very good coach and role model. She tried her best to make me a better teacher as compared with my performance during my first month of practice teaching experience.”

“I guess my cooperating teacher’s mentoring style is unique. He gives suggestions for my lesson plan, lets me execute it, then lets me evaluate the outcome. After this, we solve problems together and plan for improvement.”

The given results are relevant to the findings of the study of Sayesi and Paulsen (2012), which reveals that student teachers desire to experience both direct modeling and freedom to experiment. The student teachers compliment those cooperating teachers who serve as great models of teaching strategies and give freedom to try new things and experiment within the classroom. Furthermore, their study concludes that high-quality cooperating teachers not only coached and supported their student teachers, but also provided an example of how to be a good teacher.

III. Conclusion and Recommendations

Based on the findings of this research, it concludes that Pre-Service teachers of English are very satisfied with the mentoring practices of their cooperating teachers during practice teaching. In addition, results show that there is balance among the mentoring styles practiced by the cooperating teachers as they are often experienced by the Pre-Service teachers of English.

However, the study recommends conducting additional professional development workshops and INSET trainings for cooperating teachers to further enhance their skills to attain exemplary mentoring in all aspects. One of these activities may focus on mastering the best mentoring approach or style to properly mentor today's 21st century Pre-Service teachers—for them to grow holistically and deliver optimum teaching performance in today's dynamic learner-centered classrooms.

For further evaluation of the mentoring practices, the researcher also suggests that another study of a wider scope may be conducted among college coordinators, who serve as the mentors of Pre-Service teachers in the Teacher Education Institutions (TEIs).

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The Only Way of Human Development and Peace

Sumeru Ray (Maharshi MahaManas)

Real human development and peace can only be achieved if proper mind-development education and training are introduced all over the world.

Introduction

This is to introduce you to an excellent and incomparable system of education for true human development and peace! We can see, if we look around carefully with a little watchful eye, the whole human race is going through a terrible crisis and severe illness. And as the days go by, the intensity of this misery and suffering is increasing.

To this day, no one has been able to stop the inhumane acts of injustice, corruption, oppression, rape, deception, violence, hatred, cruelty, destructive activities, etc. that are perpetrated by people all over the world. Religion, monarchy or politics, administration or any powerful system or organization has not yet been able to solve this difficult problem of mankind.

The root cause of most man-made problems is the lack of consciousness and knowledge. The blind-faith, blind devotion, superstition, and mental illness all arise from that. The only solution to this is to introduce the fundamental man-making education system in every school for the students to become rational in the right way and gain mental development.

At the same time, rational and mentally developed students should be given special certificates according to their development standards. If these certificates are considered valuable in the workplace or in getting a job, people's interest in mind-development will increase. If students in school-college learn and practice to know and develop mind and be rational, gradually they will be able to be free from blind-devotion and blind-faith, superstition.

At the same time, proper education and treatment should be provided by identifying students who are prone to crime, in a scientific manner or by investigating behavioral errors. Only then will good change come. True mind-development is not possible without soundness of body and mind. For that, it has a medical section of alternative treatments.

By setting up mind-development centers for adults in different areas, explaining the benefits of mind-development education and practice to everyone, they need to be associated with this learning and practice center. For this purpose the 'MahaManan' mind-development curriculum has been developed. 'MahaManan' is an excellent - incomparable teaching method of mind-development education with essential basic education for real human development and peace.

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Need Your Help to Make A Great Human Development Initiative A Success

MahaManan : The excellent --incomparable system of essential basic and true mind- development education for true human development and peace. True Education is the only solution. ‘MahaManan’ is true education which helps us directly to be fully developed human beings. True education makes us conscious and wise gradually. Also, it makes us able to solve our most problems. Therefore, we need true education for human development.

All we have to do now is to create an international standard mind development center, which is the ‘Mahamanan Kendra’ (‘MahaManan Centre’). ‘MahaManan’ means great thought. Thinking for self-development is MahaManan..

We think, development of humankind or a nation is possible only through the development of individuals. Also, we think, customary or formal academic (school – college etc.) education is not sufficient for true development of human beings. For that, we need such an uncustomary (non-formal) basic human development education which can help us to become fully developed human beings.

It is known to every conscious person, the cause of most problems – disturbances and crimes of human society –is lack of knowledge and consciousness, and mental illness. And it happens because of the lack of self-(Mind)development education. Therefore, the need of this education is undeniable.

The development of the country and the entire human race is possible only through the development of the individual unit. And for that purpose, ‘MahaManan’ initiative has been started. ‘MahaManan’ mind-development education is the scientific way to alleviate global poverty. Lack of sufficient knowledge and consciousness is the root cause of poverty.

By giving all kinds of facilities, and necessary help, to a poor man with a little knowledge and a little consciousness, may be his/ her temporary poverty relief, but he will not be able to escape poverty for very long.

If a rich man, who has a lot of wealth, either hereditarily or otherwise, has a shortage of knowledge and consciousness, soon he could lose all his wealth and become poor, unless he accepts the advice of a wise person. However, it is important to have some knowledge, in order to perform the tasks of the wise person. One needs to have sufficient knowledge and consciousness to constantly make money and resources and protect them.

It is not that when economic development or economic freedom is achieved, human development also will happen. As economic development progresses, human life can be temporarily comfortable, human wealth and human civilization can be improved, in conventional education, people can become highly educated, but it will not develop the human mind. And if the conscious mind does not develop, people will lose all their wealth and fall into poverty again.

Human development means we understand the development of the human mind-- Development of consciousness or conscious mind. If the human mind does not develop, no matter how glamorous one looks, the human being will remain in the darkness.

Religious obstacles that are in the way of the spontaneous development of the human mind, the blindness, blind faith, and superstition that comes from ignorance, by removing these, if we can educate people in true

mind-developmental basic education, if we can train them in mind-developmental practical procedure, then only human development will continue to develop.

If human (mind) development does not happen, all other development will be like pearl-garland in the monkey's neck. And if human development happens, then other areas will continue to develop.

The only way to alleviate poverty is to launch the 'MahaManan' mind-development curriculum extensively in all the countries. And at the same time, poverty can be eradicated if we can establish 'MahaDharma' in all. This system of education removes ignorance, superstition and blind-faith from the human beings, and makes people aware and conscious as well as educates them in the essential basic education of life.

The root cause of poverty is blindness, superstition, and blind faith, resulting from poor knowledge and low consciousness with physical and mental illness.

Not only free from poverty, human rights will be effective only when most people have enough knowledge and consciousness. In addition, the scarcity of knowledge and consciousness are responsible for most human-caused problems, sickness, and most awkward incidents. The conventional religion, politics, economics, administration, conventional education system, and any of the existing systems are not able to solve these problems.

The question is-- Why human minds have not developed enough so far, despite the fact that thousands of years have passed and people have become so civilized and educated- despite so much progress in science? Why is the human mind still in that primitive darkness!

There is an answer to this in the book of 'Mahaism'. 'Mahaism' says that religion, monarchy (now politics) and the business/ trade system, they never wanted people to be wise and aware. Therefore, due to their conspiratorial efforts, people are still drowning in the darkness of ignorance. Even today, people have not been able to gain enough knowledge and consciousness by overcoming superstitions and blind faith.

In this context, I would like to say that communism is not a solution to this problem. Many people say that if communism is established in human society, it will be solved. But that is not the real truth. Communism can only succeed if the knowledge and consciousness of the whole human race is sufficiently developed and there is almost equality in that higher knowledge and consciousness among most people. But it can never be implemented. It will never be possible to bring a balance of consciousness between them by elevating the whole human race to a higher consciousness.

In the name of 'Communism', the system imposed on mankind is in fact an artificial system. Even if communism is imposed on human beings, the fundamental problems of mankind (lack of sufficient knowledge and consciousness) will never be solved. On the contrary, by imposing this artificial system, people will have to suffer the consequences.

So, not illusory communism, but 'MahaDharma' based on Humanism, and its great doctrine of the modern times: 'MahaVad' (Mahaism). Which helps people to be sufficiently developed human beings. Only developed people can build the greatest social order. There is no need to impose any artificial system on it.

To get rid of this extreme crisis, human-development-based religion~ ‘MahaDharma’ is the only way. This religion is not the same as conventional religion. This is a scientific method of true human development through an excellent and incompatible mind-development education ‘MahaManan’. In fact, ‘MahaManan’ is the practicing part of this new religion called ‘MahaDharma’.

In this context, also I have to say something about the leftists. Most people think that communism is the only ‘left’. But the ‘left’ does not mean that there must be communism. In fact, the ‘left’ is moving against the current system, not accepting the various irregularities and irrational arrangements in the traditional system. It is not necessary to have communism in the opposite direction. There may be a different opinion or doctrine.

If I am asked, what is the biggest problem in the world right now? I would say-- Religion, which has not allowed the development of the human mind. As a result, the human mind is still in that primitive darkness. Most of the problems are caused due to lack of sufficient knowledge and consciousness of the people.

If we want to bring about real human development, if we want to solve most of the problems of human beings, the correct education system of human mind development must be made effective everywhere.

Drowning people in the darkness of ignorance, no artificial (religious or political or social) system imposed on human beings can ever succeed. It cannot be good for people. So, not illusory Communism, it needs ‘MahaDharma’ (the basic Dharma or Religion of human beings), and its great doctrine of the modern time-- ‘MahaVad’ (Mahaism) which helps people to be sufficiently developed human beings. Only developed people can build the greatest social order. There is no need to impose any artificial system on it.

The great doctrine of this time ‘MahaVad’ (Mahaism) is not inclined to impose any religious philosophy or any political belief on the people. Its main purpose is to make people aware enough. When a person becomes highly conscious, then he will be able to set the right policy and move forward on the right path.

One thing we need to keep in mind, human development is actually the development of the human mind. And it requires education and practice to develop the mind properly. And for that, the education system ‘MahaManan’ --the mind development and self development training has been prepared. ‘MahaManan’ is an excellent and incomparable system of education for true human development and peace. Actually, ‘MahaManan’ is a practicing part of the mind-developing religion called ‘MahaDharma’.

Not only religion but also political power will be needed to make this grand initiative a reality. Therefore, good change in human life will be achieved only if a strong political party based on ‘MahaVad’ and ‘MahaDharma’ is formed.

It is never possible to bring equality among the very mixed people of today. However, step by step, it will be possible to raise people to a higher consciousness through the educational system of ‘MahaDharma’ and ‘MahaManan’ for a few generations.

For thousands of years, religion, monarchy (now politics) and trade or corporate system have plunged people into the abyss of ignorance, from which it will be possible to recover slowly.

People have so many problems, sorrows, and misery due to lack of sufficient consciousness. And the biggest obstacles to the development of consciousness are religion, monarchy (now politics), and the trade or business

system. They never want the development of human consciousness in their own interest. Rather, they are always trying to let people remain ignorant and blind fools.

Democracy will succeed only when most of the people of the country have enough knowledge and consciousness. Otherwise, that country will become a paradise for evildoers in the name of democracy.

As long as the backward oppressed people continue to lick the feet of the people of religion, monarchy and the upper classes, their slave mentality and blindness due to ignorance cannot be stopped, and they will continue to be oppressed. The only way out of this predicament is to take initiation in 'MahaDharma' (human religion) and start mind-development education and practice it.

'MahaDharma' is not a religion based on faith like the conventional religion. This is the religion of becoming a sufficiently developed human being free from superstition. An excellent incomparable Education System for Real Human Development.

We want to enjoy our life much more nicely – want to be successful in life – want to gain happiness, prosperity – peaceful, joyful, beautiful, healthy life. We want to transform our hopes –ambitions into reality. Want to see ourselves as fully developed human beings, and along with our development –we want to make our children fully grown human beings, want to develop them properly. Want to bring up as complete human being in knowledge, good qualities, behavior, true education, capabilities.

If your demand is the same, if you want to enjoy a happy –developed, healthy, beautiful life, you can gain that through 'MahaManan' education syllabus– the Maha (great) mind-developmental educational program. Even with your education, side by side, the regular learning and practice of 'MahaManan' with 'MahaManan-Yoga' procedure, the overall development and along with it, the examination's result also performed very well.

To make this epoch-making system reality, if many people come spontaneously, only then will real human development be possible with poverty alleviated.

An Appeal to Conscious People

To make a better world – to make our life blessed – to fulfill oneself, to remove the inhuman activities and poverty from our society, we have an excellent – incomparable system of essential education for true development. We are desirous to establish the way of overall development of human beings –world-wide, and also we are desirous to establish a true Human Development education center of international standard.

We need like-minded persons (Free-minded rational science-minded self-development-loving people) for our true Human Development program.

'The call to be proper Human being' is not any new saying. But, in reality, there is no proper education center, any path or method, before us. That great path of true and overall self-development and universal mind-development is 'MahaManan' or 'Maha Atma-Vikas-Path'.

This excellent education (theoretical and practical) of human development is so beautiful that if any school/ college-student receives it, even a short course of this education, the examination result of that student will be better. Along with that, improvement of behavior of that student will take place.

By receiving full course of ‘MahaManan’ education, development of one’s own self or mind comes into reality. In case of aged persons, being free from many psychosomatic and mental problems, they will be able to advance towards the path of true self-development, along with self-purification and self-realization.

Besides that, those who are tending to crime, can come into normal state and be able to turn into developed soul through this education with a special course of ‘MahaManan’. To grow a peaceful– developed society/ country, ‘MahaManan’ is the excellent –incomparable –essential education for all.

Make your life bright and more bloomed, also bring in your life an unprecedented, amazing change, through the man-making education ‘MahaManan’.

‘MahaManan’ (‘Maha Atma-Vikas-Shikshakram’) educational program is not only a system of education of theoretical knowledge of self-development or mind-development. It is formed by combination of different sciences, spiritual science, modern psychology, spiritual psychology and many more methods invented by Maharshi MahaManas, with practical or applied teachings of reasonable spirituality, with ‘MahaManas-Yoga’.

‘MahaManan’ that is ‘Maha Atma-Vikas’ education system is a simple and easily comprehensible – effective – impeccable syllabus of true & overall mind-development or self-development with basic essential education to higher education of true (reasonable) spiritual knowledge.

True & overall self-development with real mind development is not possible without universal soundness. For that, the ‘Mental Treatment’ is an important part of the ‘MahaManan’ education.

One who is (proud of being human) a combination of body and mind, if that one is ignorant of that body and mind, that one cannot be called a real human. That one is less or incomplete human. The basic education of ‘MahaManan’ helps one to become a well-developed human being in all respects.

By following and practicing these teachings (with practical~ applied methods) one can be developed in all respects, is ‘MahaManan’

Here It is Necessary to Talk Briefly about ‘Mahadharma’

A new religion has emerged in India, after a long time. This religion is not a religion based on faith and worship of God like the conventional religion. This is a new religion free from blind faith with the aim of establishing real human development and peace.

‘MahaDharma’ is a new religion that is about to usher in an era, and whose main goal is real human development and peace through mind development education.

‘Dharma’ (which is usually called -Religion) is the natural or normal quality, function, behavior of something. In the case of human beings, religion is the pursuit of self-development through gradual acquisition of knowledge and experience through action and enjoyment. It is the natural quality and disposition of man to move forward with the goal of becoming a man of sufficiently developed mind. This is ‘Manav Dharna’ (human religion). In short, In the case of human beings, ‘Dharma’ is the basic innate activities, behaviors, natural qualities and dispositions of mind-development.

The goal of human life is to become a fully developed human being. Nothing else. Although 'Dharma' is called Religion, but 'Dharma' and Religion are not the same things.

The Essence of 'MahaDharma' Religion

You have been born as a Human being, your basic aim of life is to be a fully developed Human being. Try to keep yourself always wakeful~ conscious. Try to know yourself and this worldly system, and advance consciously towards the aim of life. Be effortful to make yourself true and universally developed Human being.

We, in spite of being born as human beings, are not aware of our basic 'Manav Dharma', we do not practice our 'Manav Dharma'. For that, 'Maha Dharma' has appeared as an independent 'Dharma' and Religion.

This religion is not so-called religion, created by any imaginary angel or God, This religion is for the welfare of human beings created by a great man~ Maharshi MahaManas~ the great sage of the modern times.

Now I will shed some light on the method, structure and curriculum of this remarkable man-making education.

The first thing that needs to be said is this incomparable essential education method and its curriculum, called 'MahaManan' has been created based on the great doctrine of the time 'MahaVad' or 'Mahaism'. The essence of 'Mahaism' is that real human development and the establishment of peace in the world will be possible only if there is enough human mind development all over the world. Therefore, our first duty should be to develop the minds of the people.

'MahaVad' or 'Mahaism' is basically the way, method, and curriculum of development of human mind. At the same time, as required, many mysteries of human life and cosmic life have been revealed in this book.

'MahaVad' or 'Mahaism' is a large book. It is not possible to express it here. Here I will try to say something briefly about this book. A book called 'The Absolute Wisdom of the Millennium' has been published from Amazon with a very brief summary of 'Mahaism'. From this text we can also get an idea about 'Mahaism'. We will also be able to get a lot of ideas about 'Mahaism' from the curriculum of this education system.

The 'MahaManan' curriculum is basically divided into two parts. One is the theoretical part and the other is the practical part. The curriculum for mind-development education is summarized as follows:

Mind and me	Faith and knowledge
Know your own mind	Faith and healing
Consciousness	Doubt and caution
Another article about the Mind	Take off your glasses of faith
Soul-mind-rebirth	Belief and philosophy
Topic: Peace	The nature of a free mind
Happiness and Peace	Can science be believed without hesitation?
What is faith and why	Talk about dreams

Context: Madness

About trans

Seeing God

Context of education

Happy change is coming

Topic: Self-development curriculum

Wake up, Get up, Develop yourself

Freedom from dissatisfaction

MahaManan: Great self-(mind) development

Education

About MahaVad (Mahaism)

Man-making workshop

About bringing a baby into the world

Want to be free? Or are you afraid to be free?

Misunderstandings are a big problem in human society

The reason for not understanding !

About Excitement

Studying should not be a struggle

If you want to be a good student

Thinking about the future

To the parents of the students

In the context of Guru-Mentor

Be creative

What is 'Religion' and why

MahaDharma: Summary

What is humanism?

What does it mean to be human?

Many things in the context of Religion Problem:

Its root cause and solution MahaDharma - a few more words

About adopting MahaDharma

In the context of initiation

Karma and Karmaphal

In the context of miracles

Context: Maya

Context: True

This world is contradictory

Context: Human service

Context: Sin

Mystery of Yoga

This world and we

You and the worldly events

Context: Freedom

Context : Love

Humanity

Topic: Fear

Context: Devotion

In the context of prayer

In the context of science

Who will be called wise?

Unraveling the mystery of the universe The cosmic soul / God and we

What is destiny?

In the context of God / Vishwatma

One more article about God-existence

What is Time

'MahaVad' and evolutionism

Unraveling the mystery of creation

In short 'MahaManan' syllabus

How to develop Mind in a simple way

The way to success

How to make a positive plan

Keep your mind free of garbage

'MahaManan' meditation through music

MahaManan-Yoga

MahaManan meditation

Dhyana (Meditation)-Yoga syllabus

Context: Meditation

Meditation is familiar to students

First of all need wellness

At the root of many failures is illness

In the medical context

Comprehensive treatment in a natural way Acidity:

A terrible problem

Wind sickness

Chronic inflammation

About Autoimmune Disease

Various things in the context of disease and treatment

Context; Fasting

Toxins

Depression

And more.....

Note by the Author : MahaManan

An epoch-making revolutionary initiative to establish real human development and peace through an excellent education system of mind-development.

Effective Transaction of Social and Moral Values among Students through Chemistry Curriculum at Higher Secondary Stage

Anjni Koul and Alka Mehrotra

Abstract

Education is the tool to inculcate social values among students. Ethical development provides skills required for living in harmony with oneself and with others. The moral values give direction, determination, contentment, peace and bring joy to life. So, it becomes necessary that these should be inculcated among children from the very beginning. These can be easily inculcated through teaching- learning process of school subjects. In this study, Researchers have tried to find out how far the chemistry curriculum at higher secondary stage may help in imparting values among students. It has been revealed that the present chemistry syllabus has good potential of inculcating the social and moral values among students. The students and teachers have quoted values that can be inculcated during teaching-learning process through various topics of chemistry at higher secondary stage.

Key Words: Chemistry Curriculum, Social Values, Moral Values, Higher Secondary Stage, Teaching-Learning Process

Introduction

“If we are to teach real peace in the world we shall have to begin with children”.

---Mahatma Gandhi

Children begin to learn social and moral values from their families, peers, media, community, and various other sources of interaction. The researches reveal that children probably develop moral sense within the first two years of life (Kagan & Lamb, 1887). Therefore, children arrive at schools with their own values. But it has been observed that moral values are diminishing and intolerance is growing among children. The focus on spreading of education has not made much difference in this regard. Usually, our school systems focus on rote memorization and give very less space to students to learn in a collaborative, reflective manner, which can help students to acquire certain social skills. Limited opportunities are usually given to students to think independently or creatively. It has been found that when values are inculcated during the teaching-learning of subject, the students relate values with their daily life and transaction of the lesson becomes easier (Tan, et al., 2010). The studies have shown that value education programmes have significant effect on development of values among students (Thapliyal, et al., 2015). In classrooms, chemistry is usually taught within the cognitive level of students, whereas psychomotor learning is achieved while performing laboratory experiments, project works etc. However, affective domain learning is often considered the least when it comes to chemistry teaching.

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The National Council of Educational Research and Training (NCERT) is an apex body constituted by the Government of India for school education. It develops National Curriculum Framework to provide guidelines for development of curricular materials. The National Curriculum Framework-2005 (NCF-2005) emphasizes that value education must be a concern that penetrates the school life through curriculum, extra-curricular activities, classroom environment, school management, teacher-pupil relationship, teaching-learning processes, and entire range of school activities. Teachers should make deliberate attempt to infuse the related values appropriate with the textual material in classroom (NCERT, 2005). It emphasizes that education for peace as one of the national and global concerns. The Position Paper National Focus Group on Education for Peace (NCERT 2006a) highlights that education for peace nurtures ethical development; inculcates the values, attitudes and skills required for living in harmony with oneself and with others, including nature.

In school curriculum, chemistry is taught as one of the core essentials. Chemistry plays a vital role in daily life. There are many hidden values in chemistry curriculum which may help the present generation in protecting environment, leading a happy, disease free, healthy and peaceful life. These values can be passed on safely to the students during teaching-learning of chemistry. Since the existing curriculum of chemistry (NCERT, 2006b & 2007) is in use for more than a decade in the school system, a research study was taken up by the Department of Education in Science and Mathematics on the content being transacted during teaching-learning process with the following objectives:

- Content load
- Difficulty level
- Learning gaps
- Interdisciplinary connectivity
- Laboratory work
- Inclusion of values

In this research paper the focus is on inclusion of values only through chemistry curriculum and to know that how far these values are being transacted and inculcated among students of higher secondary stage.

The Researchers focused on the following research questions:

Research Questions

- Which topics of chemistry curriculum inculcate values among students?
- What strategies are being adopted by the teachers to inculcate values among students?

Research Design

Methodology

The Researchers tried to find out how pedagogy in textbooks has enabled students to relate values in life with the concepts of chemistry transacted at higher secondary stage. For this, tools were developed, validated, and modified. The modified tools were administered in 40 schools across the country comprising a sample of 46 teachers and 909 students. Out of 909 students, 265 students were of Class XI and 644 students were of Class XII. Purposive sampling technique was used in the selection of the sample.

Analysis of Data

The responses of teachers and students collected from various schools were tabulated and analyzed. Summary of number of responses of Classes XI and XII students about Class XI syllabus have been shown in Tables- 1a and 1b respectively.

The values quoted by students of Classes XI and XII about Class XI syllabus are given in Table- 1c. To maintain the originality of the study, the actual responses of the students have been given as such, without any modifications.

Table 1a Responses of Class XI Students about Class XI Syllabus	
Summary of number of responses of class XI students about class XI syllabus	
Total number of students = 265	Number of students who did not mention about values 61 (34.66 %) out of 176 answers
Number of students who did not answer this question =89 (33.58 % out of 265)	Number. of students who mentioned about values 176-61=115 (65.34%) out of 176
Number of students who answered this question (265-89= 176)(66.41% out of 265)	Out of 115 students 77 students (66.96%) quoted the value

Table 1b Responses of Class XII Students about Class XI Syllabus	
Summary of number of responses of class XII students about syllabus of class XI	
Total number of class XII students who answered for class XI syllabus = 584	Number of students who responded that values were not mentioned =45 (19.15%) out of 235 answers
Number of students who did not answer this question=349 (59.76%) out of 584students	Number of students who answered that values were mentioned = 235-45 = 190 (80.85 %) out of 235 answers
Number of students who answered this question =235 (40.24%)	Out of 180 answers values were quoted in 70 answers (38.89%)

Table 1c Summary of Values Quoted by Students of Classes XI and XII about Class XI Syllabus	
Name of the unit	Values quoted
Some Basic Concepts in Chemistry	Discipline
Structure of Atom	Logical approach , Organization, Discipline, Good behavior, Try again and again until you succeed, Keep up with family (Family values)
Classification of Elements and Periodicity in Properties	No response

(Continued)

Table 1c	Summary of Values Quoted by Students of Classes XI and XII about Class XI Syllabus (Continued)
Chemical Bonding and Molecular Structure	Sharing, Cooperation, Bonding and relationship with people, Keep up with family, Save nature and its beauty, Donating money from rich to poor, Practice makes a man perfect.
States of Matter	No response
Thermodynamics	Cooperation, Patience, Honesty.
Equilibrium	Nature of equilibrium, Patience, Truthfulness, Family values, Being balanced in life.
Redox Reaction	Save electricity, Good behavior.
Hydrogen	Importance of water for existence.
s-Block Elements	Being regular, Honesty.
p – Block Elements	Being regular, Recording the facts.
Basic Organic Chemistry	Relationship of electronegativity with life situation, Similar people make friendship (Like dissolves like), Patience.
Hydrocarbons	No response
Environmental Chemistry	Save nature and its beauty, Care for environment, Protect environment, Logical approach, Control pollution, Importance of water in daily life.

Similarly, summary of number of responses and values quoted by teachers, teaching class XI is shown in Table 2a and 2b respectively.

Table 2a	Responses Given by Teachers (Teaching Class XI)
Total number of teachers =46	Number of teachers responded that no topic of class XI can transact values = 10 (23.81%)
Number of teachers who did not answer = 04 (8.70%)	Number of teachers who reported about value transaction =32(76.19%)
Number of teachers who answered = 42 (91.30%)	Number of teachers who quoted values =31(96.88%)

Table 2b	Summary of Values Quoted by Teachers (Teaching Class XI)
Name of the unit	Values quoted
Some Basic Concepts in Chemistry	No response
Structure of Atom	Coherence with nature, Respect for nature Honesty, Punctuality

Name of the unit	Values quoted
Classification of Elements and Periodicity in Properties	No response
Chemical Bonding and Molecular Structure	Sharing , Cooperation, Logical reasoning, Stability, Team spirit, Unity, Interaction with family, Unity, Bonding and relationship with people, Objective reasoning, Hard work pays
States of Matter	Hard work
Thermodynamics	No response
Equilibrium	Coherence with nature, Logical reasoning, Scientific attitude
Redox Reaction	No response
Hydrogen	Team spirit, Self- study, Express yourself
s-Block Elements	Cooperation, Team spirit, Self- study, Express yourself
p-Block Elements	Cooperation, Logical reasoning, Team spirit, Self- study, Express yourself , Make plan before proceeding for work
Basic Organic Chemistry	No response
Hydrocarbons	No response
Environmental Chemistry	Scientific attitude, Care for environment, Conserve energy, Self- respect, Cleanliness, Sanitation, Sensitivity towards environment, Sensitivity towards ecological balance, Social values, Ethical values, Aesthetic values, Control pollution.

Similarly, summary of number of responses and responses quoted by Classes XII students about Class XII syllabus have been shown in Tables 3a and 3b respectively.

Table 3a Responses of Class XII Students about Class XII Syllabus

Summary of number of responses of class XII students about class XII syllabus	
Total number of students = 644	Number of students who did not mention about values = 49 (15.12 %) of the 324 answers
Number of students who did not answer the question = 320 (49.69 %) out of 644 students	Number of students who mentioned about values = 324-49 = 275 (84.88 %) out of 324 answers
Number of students who answered the question = (644-320=324) (50.31%) of 644 students)	Out of 275 students, 61 students (22.18%) quoted the values

Table 3b Summary of Values Quoted by Class XII Students about Syllabus of Class XII

Name of the unit	Values quoted
The Solid State	No response
Solutions	Practice makes the man perfect
Electrochemistry	Control pollution, Read thoroughly to understand the topic
Chemical Kinetics	Hard work, Help of elders
Surface Chemistry	Be environment friendly
General Principles and Processes of Isolation of Elements	Environmental issues
The <i>p</i> -Block Elements	No response
The <i>d</i> - and <i>f</i> - Block Elements	No response
Coordination Compounds	No response
Haloalkanes and Haloarenes	No response
Alcohols, Phenols and Ethers	Methanol is hazardous
Aldehydes, Ketones and Carboxylic Acids	No response
Amines	No response
Biomolecules	No response
Polymers	Unity
Chemistry in Everyday Life	Social Values, Harmful drugs should be avoided, Use drugs as medicines, Avoid overuse of drugs, Helpfulness, Taking care of own health, Environmental issues

Tables 4a and 4b show number of responses and values quoted by teachers teaching class XII respectively.

Table 4a Responses of Teachers (Teaching Class XII Students)

Total number of teachers =46	Number of teachers responded that no value transaction is possible through class XII syllabus = 09 (22.50%)
Number of teachers did not answer this question=06 (13.04%)	Number of teachers who reported about value transaction =31(77.50%)
Number of teachers answered this question = 40(86.96%)	Number of teachers who quoted values= 30(96.77%)

Table 4b Summary of Values Quoted by Teachers (Teaching Class XII)

Name of the unit	Values quoted
The Solid State	Strength of unity (Closer the particles packed in the crystal, Higher the melting point, Difficult to separate particles),
Solutions	Logical applications, Effective communication, Team spirit
Electrochemistry	Environmental issues (pollution), Green world
Chemical Kinetics	Hard work, Help elders
Surface Chemistry	Helping nature
General Principles and Processes of Isolation of Elements	No response
The p-Block Elements	Creative and critical thinking, Plan before proceeding for work, Objective reasoning
The d- and f- Block Elements	Creative and critical thinking, Objective reasoning
Coordination Compounds	Mutual understanding , Cooperation
Haloalkanes and Haloarenes	No response
Alcohols, Phenols and Ethers	No response
Aldehydes, Ketones and Carboxylic Acids	No response
Amines	No response
Biomolecules	Togetherness (Unity), Respect for plants and animals, To have nutritious diet (Food habits), Self respect
Polymers	Being ecofriendly, Togetherness, Self- respect, Sensitivity about environment, Cooperation, Respect nature, Friendship
Chemistry in Everyday Life	Antifertility drugs (Control population), Social life(Social Values), Togetherness, Self- respect, Non addiction to drugs, Environmental issues, Food habits, Awareness about self and other health issues (Take care of own health).

Classroom Observations

Researchers also observed various classroom processes. It was revealed that teachers were trying to inculcate a number of values while transacting the concepts of chemistry. Some are highlighted below:

- While discussing chapter on Chemical Bonding, discussion on cooperation was held.
- In the chapter Coordination Chemistry, the importance of various donations was highlighted.
- While talking about Surfactants, water pollution was discussed.

- During p-Block Elements, unity in diversity was talked about.
- In the chapter of Environment Chemistry, discussion on various kinds of pollutants, use of eco-friendly biodegradable materials, how to control pollution etc., was held.
- In the chapter Chemistry in Everyday Life, discussion on Sexually Transmitted Diseases (STDs), AIDS, mood swing, harmful effects of smoking and drugs was held.
- During practical/ experimental work there was discussion about various values such as, honest recording and reporting, accurate measurements, utilisation of time effectively, judicious use of chemicals etc.

Similar information could be revealed from the responses filled in the tools by teachers.

Discussion and Interpretation

As far as transaction of values through Class XI chemistry syllabus is concerned, out of 265 students of Class XI, 89 students (33.58%), did not answer the questions and 61 student(34.66%) were of the opinion that there was no mention of value.

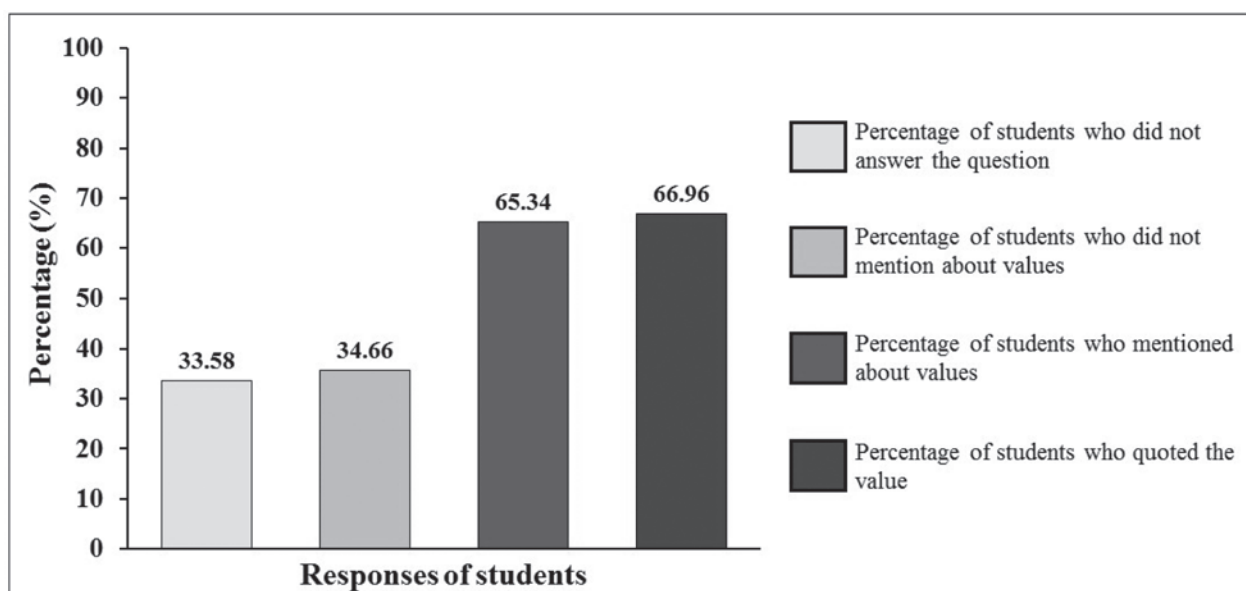


Figure 1

This means **approximately one third of the students either did not answer the questions or were of the opinion that there was no mention about values during teaching-learning process.** Only 115 students (approximately 65.34%) answered that discussion about some values was held during teaching-learning of the Units of Class XI. **Out of 115 students, 77 students (66.96%) quoted the values. However, 10 students mentioned that values were transacted through all the units of Class XI chemistry** (Figure 1).

Similarly, Class XII students in relation to transaction of values through Class XI chemistry syllabus also show similar results. Out of 584 students of Class XII, 349 students (59.76%) did not answer the question, 45 students (19.15%) out of 235 answered that values were not mentioned and 70 students (38.89%) out of 180 quoted the values (Figure 2).

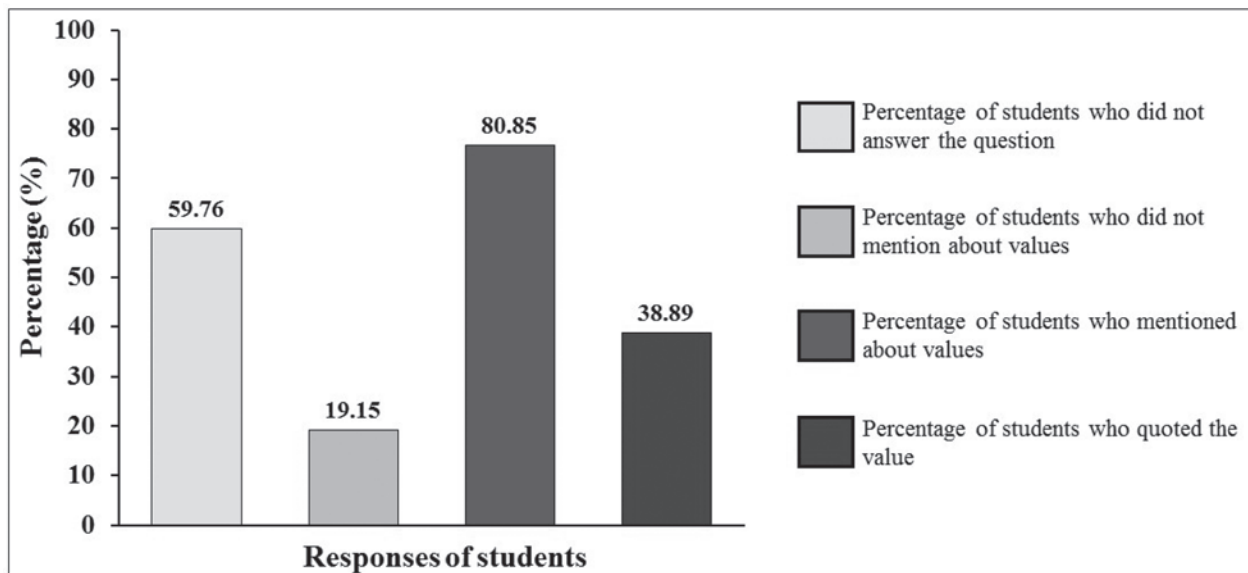


Figure 2

It is important to note that **10 teachers (23.81%) out of 42 teachers, who responded that no value can be transacted through Class XI syllabus** (Figure 3).

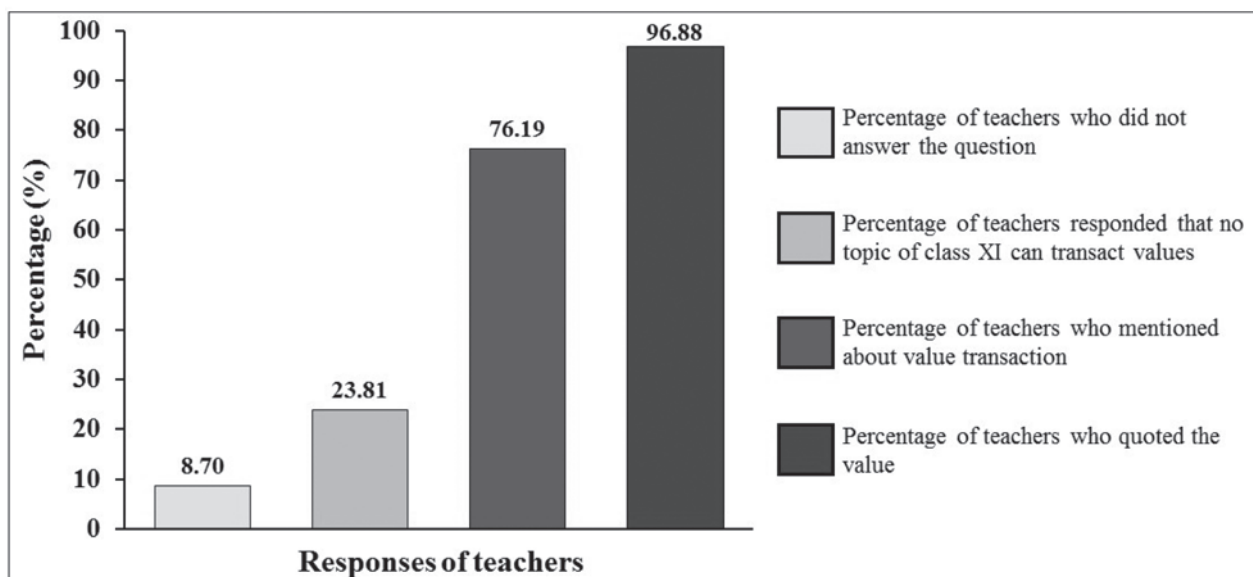


Figure 3

Analysis of data (given in Table- 3a) related to transaction of values through Class XII syllabus shows that out of 644 students, 320 students (**49.69 %**) did not answer the question. 324 students (50.31%) answered the question. Out of 324 answers 08 students answered that values were mentioned in all topics and 49 students (15.12 %) answered that there was no mention about values. 275 (84.88%) answers informed that values was mentioned during teaching –learning process, however, only in 61 answers (22.18%) values were quoted (Figure 4).

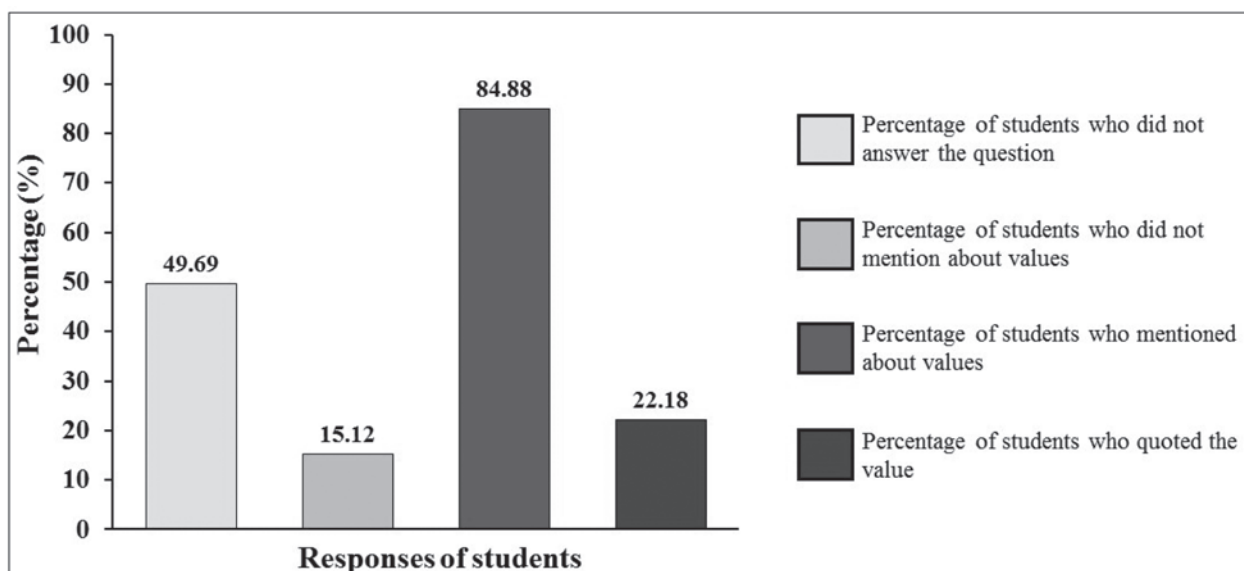


Figure 4

Result of analysis of answers of teachers given in the Table- 4a is more surprising. Out of 46 teachers, 40 teachers (86.96%) answered the question and only 31 teachers (77.50%) reported about the transaction of values. It is noticeable that **09 teachers (22.50%) reported that value transaction is not possible through Class XII syllabus** (Figure 5). **This answer surprises and perhaps supports the answer given by small number of students responding in favor of value transaction during the teaching–learning of syllabus of Class XII.**

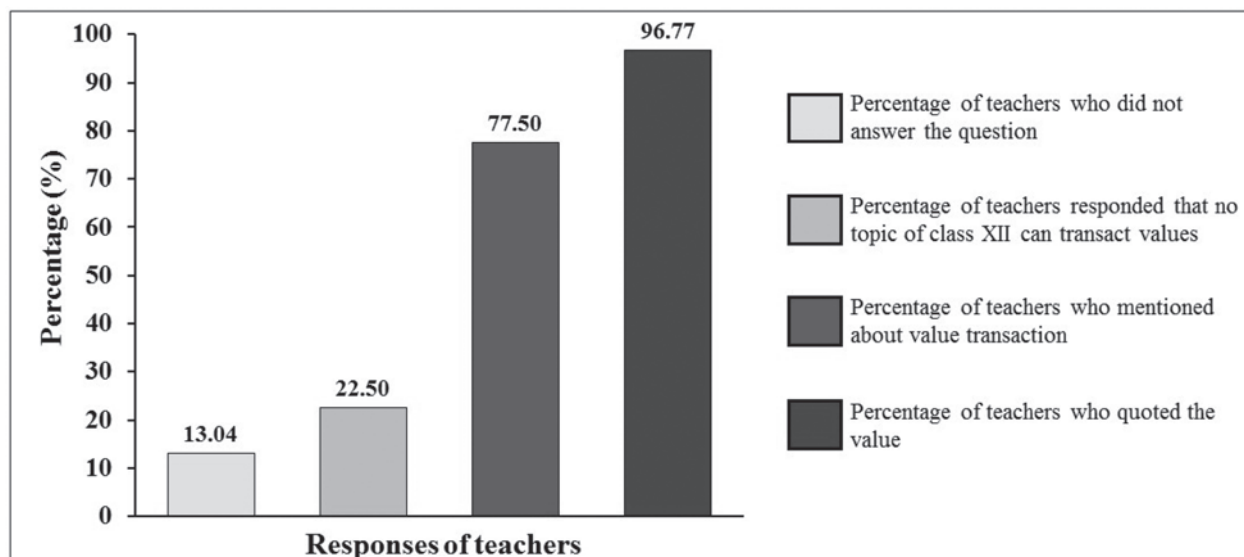


Figure 5

From the data it is very clear that for Class XI, neither teachers nor students quoted values for the chapters such as, Classification of Elements & Periodicity in Properties and Hydrocarbons. Perhaps the values

- regularity and remaining bound to the family could be transacted through the chapter; Classification of Elements and Periodicity and the values such as – Step wise approach to solve problems and thoughtfulness can be transacted through the Chapter- Hydrocarbons.

However, in Class XII syllabus students have not quoted values for the chapters such as, Solid State, Chemical Kinetics, The *p*-Block Elements, The *d*- and *f*-Block Elements, Coordination Compounds and many of the chapters on organic chemistry. The teachers teaching at Class XII had quoted values for most of the chapters except the chapters General Principles and Processes of Isolation of Elements, Haloalkanes and Haloarenes, Alcohols, Phenols and Ethers, Aldehydes, Ketones and Carboxylic Acids. However, they mentioned that values such as, stepwise approach and thoughtfulness can be transacted through organic chemistry.

Some values quoted by teachers and students are worth highlighting. For example, **the concept of catalyst is related to helping nature because according to students catalyst facilitates the reaction; chemical bonding is related to relationship with people; solid state topic motivates for unity and strength; biomolecules encourages for nutritious diet; Rutherford's experiment motivates for try again and again till one get success; structure of polymers inspires for togetherness; environmental chemistry encourages to save and care for environment; chapter on alcohols, phenols and ethers motivates for non-addiction; chemistry in everyday life makes aware about overuse of drugs, side effects of drugs and creates awareness about taking care of one's own health.**

The students have also indicated that while having discussion on any chemistry topic in the class, and also during practical classes--values such as, **humanity, good behavior, manners, discipline, hard work, never give up, truthfulness, duty is worship, power, honesty, friendship, obedience and confidence are being inculcated.** They also quoted that sometimes teachers talk about values even though chemistry topics are not being discussed.

The teachers have revealed that when students are involved in group work such as, project work, practical work in the classroom, values such as, **work with patience, cooperation, concentration, regularity, patience, team spirit, listening skills, understanding skills, unity, belongingness, togetherness, coordination, honesty, hard work, punctuality, scientific attitude, desire for knowledge and thoughtfulness are inculcated among students, which help in overall development of students.**

Conclusion

The study shows that the chemistry subject is repository of values and students not only gain insight into the nature of the subject but also appreciate and imbibe the values associated with the subject. However, opportunities are not being availed fully.

If in the school system, each teacher is equipped with the ability to inculcate values through a particular subject, then **value centric education will become integrated in the lives of students. It will give a positive direction to the students to shape their future and they can become more confident, sensible and above all responsible citizens of 21st century.**

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Barangay Elementary Schools' Readiness and Effectiveness on Distance Learning as Perceived by 4Ps (Pantawid Pamilyang Pilipino Program) Parent-Recipients

Mischiel Gagate Adigue and Ben Fermin Q. Abuda

Abstract

Continuity in education is a crucial task of the education sector in the time of pandemic. Thus, a study was made on the level of readiness and effectiveness on the implementation of distance learning among Barangay Elementary Schools in Taft district, province of Eastern Samar during the school year 2020-2021. Using correlational research design, the Researcher employed survey questionnaire among 100 4Ps' parents selected via total enumeration technique. The data were analyzed using descriptive and inferential statistics at .05 level of significance. Findings revealed that the majority of the Parent-Recipients are earning a living through crop farming with a secondary level of education and that they belong to small family size. The Barangay Elementary Schools are perceived to be highly ready and very effective in implementing distance learning. Notably, there is a significant negative association between parents' educational attainment and the perceived effectiveness of modular distance learning implementation, while there is a significant positive relationship between schools' readiness and effectiveness in implementing distance learning. Moreover, data revealed a significant difference in schools' readiness to implement distance learning. Hence, it is recommended for the Department of Education to provide a guidebook to parents that will enable them to assist their children in answering learning modules correctly, and to regularly review and monitor schools' learning continuity plans and to strengthen linkages with other stakeholders.

Key Words: Effectiveness, Readiness, Distance Learning, Educational Attainment, Barangay Elementary Schools

Introduction

The global pandemic affected almost all sectors of the world. The United Nations Educational, Scientific, and Cultural Organization (UNESCO, 2020) estimated that 87 per cent of the students were affected by school closures from 180 countries. Randall et al. (2020) also reported that most academic institutions around the globe have cancelled face-to-face instruction and moved into virtual learning in January 2020 in an effort to contain COVID-19 spread, including the Philippines. According to Chang and Yano (2020), the massive lockdowns forced the government to an unparalleled task of ensuring continuity in education. Indeed, the problem caused by the pandemic world pushed every nation to adopt different measures to deal with the educational crisis, including digitalization and distance education platforms.

Article XIV, Section 2 of the 1987 Philippine Constitution instructed the government to maintain a system of free public education, without limiting the natural right of parents to their children. Distance education is

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a new thing for the DepEd community, which refers to learning taking place between teacher and the learner who are geographically remote from each other during instruction through modular, online, and blended learning. According to Dangle and Sumaoang (2020) the lack of school funding for material production is one of the main challenge that hampers the delivery of quality education. According to Servito (2020), parents play huge role as home facilitators. Unfortunately, Manlangit, Paglumutan, and Sapera (2020) noted that almost half of the population among parents are high school graduates, and minimal percentage of literate individuals. These statements entail the need for teachers to double their effort and tap parents' expertise in teaching basic skills in reading and numeracy among their children.

In the Philippines, the opening of the school year 2020-2021 took two months behind its original schedule due to many factors. A survey conducted among parents in the school's division of Eastern Samar last May of 2020 guided the schools' division officers to release Division Memorandum 124-A entitled "*Implementation of the printed modular learning approach as a default learning modality in line with the basic educations services delivery in the new normal for the Department of Education school of Eastern Samar*" which imposed the use of printed modular learning approach as a default learning modality due to unstable internet connectivity, and lack of necessary digital facilities. Wang et al. (2020) proposed that parents be taught strategies to aid learners' remote education in these times of uncertainty. As much as these programs are considered necessary to resolve the present time's needs, it has also provided a daunting routine among parents who work away from home while taking learning responsibility of their kids.

Hence, the Researcher examined selected Parent-Recipients' perceived schools' readiness and effectiveness in implementing distance learning of four (4) Barangay Elementary Schools in the Taft district, province of Eastern Samar. Specifically, this study focused on families who are recipients of the Pantawid Pamilyang Pilipino Program (4Ps) in the said locality, as up to date, there is a lack of reviews and studies in this area of concern.

Methodology

Research Design

A correlational research design was used to assess Barangay schools' readiness and the effectiveness of the implementation of distance learning. These schools are located in low risk carline areas in Taft district, province Eastern Samar namely: Nato Elementary School, Bati-awan Elementary School, San Luis Elementary School, and Dacul Elementary School and were chosen based on their considerable number of students who are recipients of the Pantawid Pamilyang Pilipino Program (4Ps).

Research Sample

This study's respondents are parents of elementary learners who are recipients of the Pantawid Pamilyang Pilipino Program, who are officially registered in the Learners' Information System (LIS), and have opted distance learning for their children for the school year 2020-2021. One hundred (100) totally enumerated respondents were selected based on the provided list by the District 4Ps coordinator of Taft district, province of Eastern Samar.

Data Collection Method

The Researcher used a three-part questionnaire composed of (1) Parent-Recipients' socio-demographic profile, (2) perceived school readiness, and (3) perceived effectiveness of distance learning modalities

which were filled out by the Parent-Recipients to collect responses directing the research objectives. A Waray version of the questionnaire was developed and implemented for better understanding among the respondents. An intercoder-reliability computed percentage of 85% showed that the final questionnaire is appropriate and ready to use. Then, a reliability-based Kappa value of 0.88 showed that the instrument is applicable for this inquiry.

This study followed the appropriate research ethics guidelines. Consent forms were given and collected from the involved participants, and a permit from government sectors directly concerned in this investigation. The participants were assured that these data will be kept confidential and will not be used in any legal actions against them.

Analysis of Data

The data were tabulated, organized, analyzed, and interpreted with the use of descriptive as well as inferential statistical tools, including frequency count, percentage, median, Kruskal Wallis H-test, One-way Analysis of Variance (ANOVA), and Spearman's rank correlation at 0.05 level of significance.

Results and Discussion

Parent-Respondents' Profile

Table 1 shows that 33% of the total respondents considered crop farming as their primary source of income. The combination of the three major sources of income was taken by only 5% of the Parent-Recipients as their means for everyday living. This can be attributed to the fact that 51.10% of the lands in the province of Eastern Samar are utilized for farming purposes and that rice production is the major source of income in the municipality of Taft, Eastern Samar (Department of Agriculture, 2019). A similar result was observed in an evaluative study made by Montilla et al. (2015) on the Pantawid Pamilyang Pilipino Program in the Philippines, to which one-fourth or 25% of the Parent-Recipients belong to the farming industry. It goes to say that the recipients of the government assistance program are employing all means to support the education of their children.

The data on educational attainment profile shows that 29% reached a secondary level of education, followed by secondary graduates with a difference of 1%. Examining closely, one-fourth of the populace or 25 Parent-Recipients reached elementary level, while only one among the 100 Parent-Recipients attained a college degree. These results are aligned with the findings of Sanchez-Danday, et al. (2019) on the prevalence of Filipino parents who reached high school or secondary level of education. The findings imply the need capacitate parents' in properly assisting their children.

Lastly, household size showed that 47% or 47 families recipients of the 4Ps program came from a small household size with at most four children. Surprisingly, 10% of the Parent-Recipients have only one child in the family. Similarly, the 2020 Philippine Average Household Size was found to be 4.4 people per household. Lluz (2020) pointed out the significant correlation between household's monthly income and major factor causing drop-out cases. The results suggest that some Filipino families regulate household size considering the impact of poverty, thus implying the need for the education leaders to instill proper family planning, even at the young age.

Table 1 Parent-Respondents' Profile		
Respondents' Profile	Frequency N = 100	Percent (%)
Source of Income		
Crops and livestock wages, and small wage laborer	5	5
Farming and small wage laborer	19	19
Crops and livestock farming	7	7
Small wages through labor	23	23
Livestock and poultry farming	6	6
Crop farming	33	33
Educational Attainment		
College graduate	1	1
College level	4	4
Secondary graduate	28	28
Secondary level	29	29
Elementary graduate	13	13
Elementary level	25	25
Household size		
Very large (<i>More than 10</i>)	7	7
Large (<i>7-10</i>)	36	36
Small (<i>4-6</i>)	47	47
Very small (<i>1-3</i>)	10	10

Perceived Level of Schools' Readiness on Distance Learning

All the ten indicators in preparation of learning materials were perceived to be “highly ready” with a median score of 4. The result shows that the instructions of the activities, text and image formats, and time allotment are appropriate and readily prepared by the teachers. The findings support Kizlik's (2014, p. 10) notion that “the preparation of learning materials are the major determinants of a quality developed learning module”, and Hojjati and Muniandy (2014) print legibility to improve learners' interest in reading. The findings imply the immeasurable efforts made by elementary teachers in preparing learning materials suitable to the students' learning needs.

In terms of the distribution of learning materials, the Parent-Recipients perceived school linkages and assigning of pick-up points as “very highly ready” with a median score of 5. However, they all scored

low in the regular and weekly distribution of deliverable. Over all, the schools were perceived to be “highly ready” in the distribution of learning materials in the safest way possible as indicated by the over-all median score of 4. The result is related to Sarmiento et al. (2021) positioning the huge role of the government in maintaining a working dynamics in the continuous delivery of education. The general result opposes the conclusion made by Fedina et al. (2017) on teachers’ deficient level of awareness regarding distance learning technologies.

In terms of the retrieval of learning materials, the schools are perceived to be “very highly ready” in terms of announcing the schedule for retrieval of learning materials and the availability of a storage box to where modules are placed. In an overall scale, the schools and assigned personnel are ready to retrieve learners’ outputs and provided modules as indicated by the overall median score of 4. The result provides a micro-answer to the major challenge posed by Brossard and his colleagues (2020) on learning deprivation in the Philippines. The findings imply the need to regularly review schools’ learning continuity plans, while highlighting the relevance of school-and-home linkages to address learning issues.

Table 2 Summary Table on The Parent-Recipients’ Perceived Level of Schools’ Readiness on Distance Learning		
Indicators of Schools’ Readiness on Distance Learning	Median	Interpretation
Preparation of Learning Materials	4	Very highly ready
Distribution of Learning Materials	4	Very highly ready
Retrieval of Learning Materials	4	Very highly ready
Over-all median	4	Highly ready

Perceived Level of Schools’ Effectiveness on Distance Learning

In terms of monitoring of learning, the results show that teachers are “effective” in implementing home visitation, communicating with parents with regards to learning issues, giving marks on learners’ works, and requesting video capsules on learners while doing the required tasks. Overall, teachers are found to be effective in monitoring learning using the most appropriate and safety-abiding ways possible, with an overall median score of 4. The findings are related to the result of Dorado et al. (2009) study on convenience and social interaction as effective correlates of learning, while it opposes Putri et al. (2020) notion on the teachers’ lack of preparedness to monitor learning, and Dong et al. (2020) parents’ negative attitude towards the implementation of distance learning.

In terms of the assessment of learning, the Parent-Recipients perceived the use of learners’ portfolio as “extremely effective” with a median score of 5. In general, majority of the responses centered on the “very effective” use of tools in evaluating learners’ understanding. Overall, the results show that the schools employed appropriate assessment strategies measuring the learning competencies set by the Department of Education. However, it differs from that of Tümen Akyildiz (2020) findings on the ineffective delivery of distance education, which negatively impacts learners’ academic outcomes. The findings amplify the efforts made by the education sector in the implementation of programs for the continuous delivery of education.

Table 3	Summary Table on The Parent-Recipients' Perceived Level of Schools' Effectiveness on Distance Learning	
Indicators of Schools' Effectiveness on Distance Learning	Median	Interpretation
Monitoring of Learning	4	Very effective
Assessment of Learning	4	Very effective
Over-all median	4	Very effective

Association Between Parent-Recipients' Profile Indicators and Their Perceived Levels of Schools' Readiness and Effectiveness on Distance Learning

Table 4 shows that both readiness ($(c) = .704, p > .05$), and effectiveness ($(c) = .624, p > .05$) measures showed strong but not significant association to that of the Parent-Recipients' source of income. The findings reinforce Malarani (2018) belief about income as primary barrier of a successful distance education course. Likewise, Stevens and Schaller (2011) mentioned that parents' lack of job causes retention of the learner in their present grade levels. The findings imply the need for teachers to provide necessary assistance to learners from underprivileged families.

Notably, parents' educational attainment and their perceived effectiveness of schools are significantly associated ($r = -.157, p < .05$). The findings can be related to existing news stating errors in the teacher-prepared/provided tests (Gonzales, 2020), and Erdener and Knoepfel (2018) significant association between parent's educational level and academic involvement. On the other hand, the result opposes the findings of Saçkes et al. (2016) on the statistically significant relationship between parents' home-related variables and literacy of their children.

Table 4	Test of Association Between Parent-Recipients' Profile Indicators and Their Perceived Level of Schools' Readiness and Effectiveness in Implementing Distance Learning			
Predictive Variable (Profile)	Schools' Readiness		Schools' Effectiveness	
	Result	Interpretation	Result	Interpretation
Source of income	$(c) = .704$	Strong association	$(c) = .624$	Strong association
	$p = .538$	Not significant	$p = .288$	Not significant
Educational attainment	$r = -.073$	Negligible correlation	$r = -.157$	Weak correlation
	$p = .334$	Not significant	$p = .034$	Significant
Household size	$r = -.049$	Negligible correlation	$r = .022$	Negligible correlation
	$p = .534$	Not significant	$p = .785$	Significant

$\alpha = .05$

Relationship Between the Parent-Recipients' Perceived Levels of Schools' Readiness and Effectiveness on Distance Learning

As shown in Table 5, the distribution of learning materials and the effectiveness indicators in terms of monitoring of learning ($\rho = .559, p < .05$) and assessment of learning ($\rho = .516, p < .05$), respectively, are both found to have a moderately significant relationship. A similar trend was observed between retrieval of learning materials and monitoring of learning ($\rho = .541, p < .05$). The results show that the distribution and retrieval of learning materials impact the monitoring of learning, since parents can share issues and concerns faced by their children, paving the way for teachers to conduct home visitation and limited face-to-face remedial activity as interventions to such problems. The results are related to Hill (2011) on the critical impact of school-level factors and practices in assessing learners' level of understanding. The finding implies the need to continuously implement good practices in monitoring learners' learning activities and the strengthening of teacher-parent relationship through focus group activities to identify their strengths and weaknesses in assisting their children.

Table 5 Spearman Rho Correlation Between Parent-Recipients' Perceived Level of Schools' Readiness and Their Perceived Effectiveness on Distance Learning						
Predictive Variable	Criterion Variable	ρ	Correlational Interpretation	p-value	Decision	Interpretation
Preparation of Learning Materials Assessment of Learning	Monitoring of Learning	.469	Low	.000	Reject H_0	Significant
		.461	Low	.000	Reject H_0	Significant
Distribution of Learning Materials Assessment of Learning	Monitoring of Learning	.559	Moderate	.000	Reject H_0	Significant
		.516	Moderate	.000	Reject H_0	Significant
Retrieval of Learning Materials Assessment of Learning	Monitoring of Learning	.541	Moderate	.000	Reject H_0	Significant
		.483	Low	.000	Reject H_0	Significant

$\alpha = .05$

Comparison of Schools' Readiness and Effectiveness in Implementing Distance Learning as Perceived by the Parent-Recipients

Table 6 reveals a significant difference found in the perceived readiness in implementing distance learning among the participating school's since the computed p-value is lower than the set threshold at 5%. Thus, rejecting the null hypothesis on the non-significant difference in the readiness of the school's. Looking closely, it can be gleaned from the data that school C has the highest level of readiness with a mean rank of 62.16 and level of effectiveness with a mean rank of 57.54. While school B has the lowest mean rank in terms of readiness and school A on effectiveness. The findings are related to Bahasoan et al. (2020), Khalil et al. (2020), and Rasiah et al. (2020) on the effective implementation of distance education among university students due to full support and effective academic continuity plans. The findings imply that schools are fully supported by the external and internal stakeholders that enable them to deliver quality education amidst the pandemic.

Table 6 Kruskal-Wallis Test of Significant Difference of School's Level of Readiness and Effectiveness on Distance Learning						
Schools	Schools' Readiness			Schools' Effectiveness		
	Mean Rank	p-value	Decision Interpretation	Mean Rank	p-value	Decision Interpretation
A	51.19	.008	Reject H_0 Significant	40.55	.191	Retain H_0 Not significant
B	41.52			49.66		
C	62.16			57.54		
D	36.61			48.50		

$\alpha = .05$

Conclusion and Recommendations

Based on the findings of the study, it is concluded that the majority of the Parent-Recipients who reached a secondary level of education and belong to small household size, are earning a living through crop farming. They perceived Barangay Elementary Schools to be highly ready and very effective in implementing distance learning in terms of preparation, distribution and retrieval of learning materials, which was made possible through working linkage among schools' external and internal stakeholders. There is a significant negative association between parents' educational attainment and the perceived level of effectiveness of distance learning implementation. Given that most parents have only achieved secondary level of education, this delimits their capacity to assist their children, most especially in checking their outputs and treating learning misconceptions. This means teachers need to provide necessary assistance to learners from underprivileged families. In addition, there is a significant positive relationship between the Parent-Recipients' perceived level of schools' readiness and effectiveness in implementing distance learning, while a significant difference in schools' readiness to implement distance learning was observed. Hence, it is recommended to regularly review schools' learning continuity plans and to strengthen linkages with other stakeholders. Also, benchmarking to schools with quality and best practices in implementing distance learning should be done among poor-performing schools.

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Behavioural Intention of Financial Accounting Teachers Toward Mobile Learning Adoption in Government Science and Technical Colleges in Gombe State

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Abstract

The study focused on determining the behavioural intention toward m-learning adoption among financial accounting teachers of government science and technical colleges (GSTCs) in Gombe state. In achieving this, five research questions were raised and four null hypotheses were formulated to guide the study. Descriptive survey design was adopted for the study. The study used the four constructs of the unified theory of acceptance and use of technology (UTAUT) model. The total population of 6 teachers was used for the study. A structured questionnaire with five point Likert scale was developed validated and its reliability established using Cronbach alpha. A reliability coefficient of 0.70 was found. The administration of the questionnaire was done by the researcher. Data collected were analyzed using mean, standard deviation, multiple regression analysis and ANOVA. The finding of the study indicated that financial accounting teachers (FATs) show a high positive behavioural intention toward m-learning adoption. Another finding revealed that performance expectancy (PE), effort expectancy (EE), social influence (SI) and facilitating conditions (FC) have significant influence on the behavioural intention (BI) of FATs toward m-learning adoption. Also, the independent variables (PE, EE, SI, FC) explained 85 percent of the variance in the dependent variable (BI). The study concluded that m-learning will not only be effortless in teaching of financial accounting but also improves teachers' performance and consequently the students' performance. The study recommends that government at all levels should consider the adoption of m-learning particularly in GSTCs to supplement teaching of financial accounting. Also, stakeholders in education should ensure frequent training of FATs on how best to utilize mobile devices for teaching through organizing seminars, workshops and conferences.

Key Words: Behavioural Intention, Mobile Learning, Financial Accounting Teachers.

Introduction

Mobile learning (m-learning) refers to any type of learning that takes place within and beyond the conventional learning environment through the use of wireless mobile devices (Abu-Al-Aish, 2014). In other words, m-learning was viewed as ubiquitous, accessible, pervasive, and transparent way of providing of education where the dominant or sole technology is palmtop or handheld (Traxler & Koole, 2014).

However, emerging innovations in information and communication technology (ICT) such as mobile devices software applications, models, podcasts, etc have created new and promising learning environment which

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not only facilitates teaching and learning, broadens its scope but also reduces many challenges associated with conventional face-to-face teaching and learning. The availability of wireless network among teachers and students allows them to communicate and access information both offline and online without the use of cables thereby facilitating teaching and learning. Similarly, utilization of mobile devices has become very common in present modern society in almost every stage of human life (Fiallos et al., cited in Rataj & Wojcik, 2020).

Accounting refers to the systematic and meticulous approach to recording, analysing and reporting of entity's transactions (Jaijaram, 2012). In his contribution, Eze (2014) asserts that accounting is a generic terminology that covers both book keeping and accounting aspects of an economic entity, it provides quantitative financial report about an economic entity for both internal and external users in making decision. Financial accounting is one of the core subjects taught in Business Departments of Government Science and Technical Colleges in Gombe State. Financial accounting can be defined as the art of collecting, recording, presenting, analyzing and interpreting financial information for the users of financial statement (Igben, 2009).

Previous studies conducted on the effectiveness of m-learning on learners' achievement and teachers' service delivery shows remarkable improvement (Ogheneovo & Linda, 2015; Suryaningrum et al., 2015; United Nations Educational, Scientific and Cultural Organisation [UNESCO], 2012; Naveed, 2010). Despite effectiveness of m-learning in educational institutions, there are a lot of challenges encountered in the process of its adoption. (UNESCO, 2012; Sarraf et al., 2012). These challenges include inadequate skills among teachers, inadequate internet access and infrastructural deficit among others (Osang et al., 2013). This clearly indicates that policy makers in education must respond to the need for ameliorating these challenges before m-learning adoption in educational institutions most especially science and technical colleges. This is because mobile devices were highly relied upon as teaching and learning tools in educational institutions (UNESCO, 2012; Pollara, 2011).

However, for adoption of m-learning to be a success, the behavioural intention of teachers to accepting the new innovation is inevitable. The few studies conducted on behavioural intention of teachers towards m-learning were mostly conducted in higher institutions of learning thereby neglecting secondary schools most especially government science and technical colleges despite the fact that the two environments and their subjects differ significantly in almost all ramifications. Due to the fact that m-learning is still in its infancy stage most especially in Nigeria, there is no study conducted on the behavioural intention of financial accounting teachers (FATs) toward m-learning in government science and technical colleges at least in Nigeria and Gombe State in particular to the best of the researcher's knowledge as at the time of this study. Therefore, the gap created by previous studies justifies the need for the present study.

Literature Review

In the process of ascertaining the FATs' behavioural intention toward m-learning, the study adopted the constructs of the unified theory of acceptance and use of technology (UTAUT) which include; performance expectancy, effort expectancy, social influence and facilitating conditions. Venkatesh, (2003) defined performance expectancy as the extent to which a person perceives that using a technology or system will

assist him achieved his goal in performing his job, effort expectancy is the extent of ease associated with the usage of the technology or system. Whereas social influence refers to the extent to which a person believes that other important people believe he should use the technology or system, and facilitating conditions refer to the perceived extent to which a persons' resources or organizational and technical infrastructure necessary to support the technologies exist (Thomas et al., 2013).

However, Ajzen (2002) describes behavioural intention as an indication of an individual's readiness to perform a given behaviour. In the words of Ajzen (1991) "intentions are assumed to capture the motivational factors that influence a behaviour". It is therefore presumed that behavioural intention is the immediate antecedent of the actual behaviour. This is the reason behind the argument of Cheon et al. (2012) that the higher the individual's intention to perform a given behaviour, the more likely the individual is to perform the actual behaviour. Based on the above assertion, this study will use behavioural intention as the final dependent variable rather than the usage behaviour. Whereas 'performance expectancy', 'effort expectancy', 'social influence', and 'facilitating conditions' as independent variables as depicted in Figure 1.

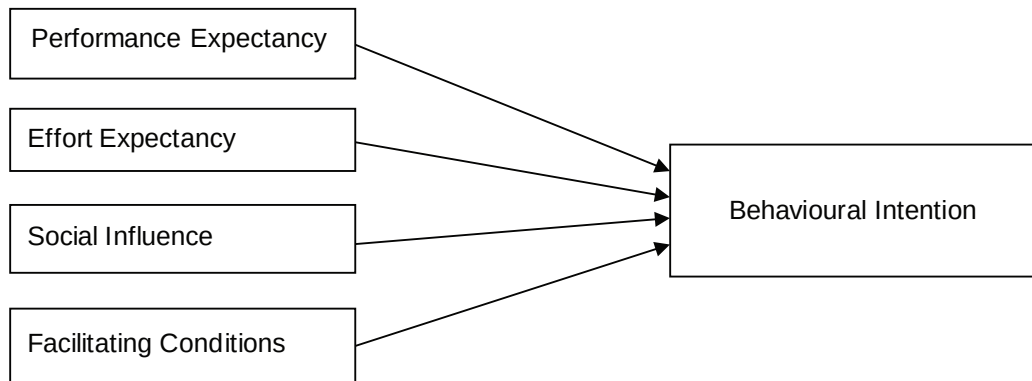


Figure 1: The Research Model

Among the previous studies that reported a high mean score of performance expectancy as well as its significant effect on behavioural intention toward m-learning include that of Chelvarayan et al. (2020); Hamzah et al. (2020); Hoi, (2020); Shorfuzzaman and Alhussein (2016); Al-Hujran et al. (2014); Abu-Al-Aish (2014); Eltayeb and Hegazi (2014); Jackman (2014); Mtebe and Raisamo (2014) and McConatha et al. (2008). On the contrary, Jairak et al. (2009) reported a low mean score and insignificant effect of performance expectancy on behavioural intention toward accepting m-learning in institutions of higher learning in Thailand. Similarly, among the studies on m-learning that reported a high mean score of effort expectancy (ease-of-use) as well as its significant effect on behavioural intention toward m-learning include that of Al-Emran et al. (2020); Kutluk et al. (2015); Al-Hujran et al. (2014); Osang and Ngole (2014); Tagoe and Abakah (2014); and Wei-Han Tan et al. (2011). On the contrary, Ugur et al. (2016) and Donaldson (2011) reported a low mean score and insignificant effect of effort expectancy/ease-of-use on behavioural intention to adopt m-learning.

In the same vein, among the similar studies on m-learning that reported a high mean score of social influence as well as its significant effect on behavioural intention toward m-learning include that of Chaka and

Govender (2020); Welch et al. (2020); Shorfuzzaman, and Alhussein (2016); Al-Hujran et al. (2014); Thomas et al. (2013) and Jairak et al. (2009). On the contrary, Nassuora (2012) and Hamzah et al (2020) reported a low mean score and insignificant effect of social influence on the behavioural intention toward m-learning. Moreover, among the previous studies that reported a high mean score of 'facilitating conditions' as well as its significant effect on behavioural intention toward m-learning include that of Welch et al. (2020); Ugur et al. (2016); Jackman (2014); Mtebe and Raisamo (2014); Thomas et al. (2013) and Donaldson (2011). On the contrary, Al-Hujran et al. (2014) and Jairak et al. (2009) reported a low mean score and insignificant effect of facilitating conditions on the behavioural intention toward m-learning. Moreover, among the previous studies on m-learning that reported the readiness or positive behavioural intention toward m-learning include that of Rataj and Wojcik (2020); Chaka and Govender (2017); Frederick (2015); Altayeb and Hegazi (2014); Osang and Ngole (2014); Mtebe and Raisamo (2014); Tagoe and Abakah (2014); Aljunaid et al. (2013) and Pollara (2011). On the contrary, Lam et al. (2011) reported that many teachers are not willing to use m-learning as teaching strategy.

Research Methodology

The study was carried out in Gombe State. The design of the study is descriptive survey whereby a measurement instrument for data collection was developed by the researcher. The population of the study comprises of all financial accounting teachers in GSTCs in Gombe State, there are 6 teachers of financial accounting available, and therefore, the study used the total population as respondents since is relatively small. According to Best, cited in Harnett and Murphy, (2007) a researcher may use the whole population for his study if the population is relatively small.

Data were collected using a structured questionnaire. In eliciting the responses of teachers on research questions 1 - 4, the study used five point Likert's rating system. The questionnaire items were derived from relevant research studies in the area of mobile learning readiness among teachers and students. Research question 1 consists of items 1 to 10, research question 2 consists of items 11 to 20, research question 3 consists of items 21 to 30, research question 4 consists of items 31 to 40 and finally research question 5 consists of items 41 to 45. The instrument was validated by 3 experts in measurement and evaluation from the Department of Vocational and Technology Education, Abubakar Tafawa Balewa University Bauchi. The reliability of the instrument was established using Cronbach's alpha after a pilot test, the result of the reliability test shows 0.70, this means that the instrument is reliable for the study because it is within the acceptable range of reliability as opined by Cronbach (1951). The administration of the questionnaire was done by the researcher and a trained research assistant. The data generated from the five research questions were summarized in a tabular format and analyzed using, mean, standard deviation, pooled mean and pooled standard deviation. However, in taking decision about research questions 1 – 4, the study concluded that any variable with a mean score ranging from 4.50 – 5.0 is regarded as very high extent (VHE), from 3.50 – 4.49 is regarded as high extent (HE), from 2.50 – 3.49 is regarded as moderate extent (ME), from 1.50 – 2.49 is regarded as low extent (LE), and from 0 – 1.49 is regarded as very low extent (VLE), while research question 5 has the same bench mark but scales of strongly agree (SA), agree (A), undecided (U), disagree (D) and strongly disagree (SD) was used. Four null hypotheses were formulated and analyzed using multiple regression and ANOVA statistics. In taking a decision on research hypotheses, any null hypothesis with a

p-value greater than 0.05 ($P > 0.05$) will be accepted and any null hypothesis with a p-value less than 0.05 ($P < 0.05$) will be rejected.

Research Questions

The following questions were raised to guide the study:

- i. To what extent do FATs perceive that m-learning will improve teaching of financial accounting?
- ii. To what extent do FATs perceive that m-learning will ease teaching of financial accounting?
- iii. What is the extent of social influence on FATs' intention to adopt m-learning for teaching of financial accounting?
- iv. What is the extent to which facilitating conditions necessary for m-learning exist among FATs?
- v. What is the behavioural intention of FATs toward m-learning adoption?

Research Hypotheses

The following null hypotheses were formulated and tested at 0.05 level of significance:

Ho₁: Performance expectancy has no significant effect on financial accounting teachers' behavioural intention toward m-learning adoption.

Ho₂: Effort expectancy has no significant effect on financial accounting teachers' behavioural intention toward m-learning adoption.

Ho₃: Social influence has no significant effect on financial accounting teachers' behavioural intention toward m-learning adoption.

Ho₄: Facilitating conditions have no significant effect on financial accounting teachers' behavioural intention toward m-learning adoption.

Results

The results of the study were presented based on the research questions and research hypotheses. The results of the research questions are presented as follows:

Research Question One

To what extent do FATs perceive that m-learning will improve teaching of financial accounting?

The result of the nine out of the ten questionnaire items used to answer research question one were found to be within the mean score for very high extent and high extent (4.00 to 5.00). Item number six has a mean score of 2.33 which falls under low extent. The cumulative mean score obtained was 4.23 with standard deviation of 0.95. The cumulative mean score falls under the index score for high extent. This means that FATs perceived that m-learning will improve teaching of financial accounting highly as indicated in Table 1.

Table 1 Descriptive Statistics used to answer Research Question One				
Q1	Items	X	SD	Decision
1	M-learning will improve instructional delivery.	4.67	0.82	VHE
2	Teacher-student relationship will be improved using m-learning.	4.33	1.21	HE
3	M-learning will be an effective way of gathering educational resources such as lecture notes, tutorials etc.	4.00	1.55	HE
4	M-learning will increase teachers' interest in teaching.	4.67	0.52	VHE
5	Collaboration among students will be improved using m-learning.	5.00	0.00	VHE
6	M-learning will suit different teaching strategies	2.33	1.59	LE
7	M-learning will improve teachers' productivity or performance.	4.00	1.23	HE
8	M-learning will provide efficiency in teaching.	4.50	0.84	VHE
9	M-learning will help in sharing educational resources such as lecture notes, tutorials etc.	4.50	0.55	VHE
10	M-learning will facilitate classroom management.	4.30	1.21	HE
Cumulative Score		4.23	0.95	HE

Key: X = Mean, SD = Standard Deviation

Research Question Two

To what extent do FATs perceive that m-learning will ease teaching of financial accounting?

All the ten items used to determine research question two fall under the criterion for very high extent and high extent with mean score range from 3.50 to 5.00. The cumulative weighted mean obtained was 4.23 with standard deviation of 1.03. The mean score obtained fall under the range of high extent. This means that the extent of perceived ease-of-use of m-learning on teaching of financial accounting among FATs was high as shown in Table 2.

Table 2 Descriptive Statistics used to answer Research Question Two				
Q2	Items	X	SD	Decision
11	M-learning will ease instructional delivery.	5.00	0.00	VHE
12	M-learning enables gathering of educational resources easily.	4.83	0.48	VHE
13	Learning how to operate mobile devices for teaching will be effortless.	3.83	1.47	HE
14	M-learning will ease evaluation.	3.67	1.37	HE
15	M-learning will ease collaboration among teachers.	4.00	1.67	HE
16	M-learning will ease communication between teachers and students.	5.00	0.00	VHE
17	M-learning applications are easy to use.	3.50	1.64	HE
18	M-learning will ease accomplishment of tasks.	4.33	1.21	HE
19	M-learning will provide feedback to students easily.	4.67	0.82	VHE
20	M-learning will ease mastery of subject matter among teachers.	3.50	1.64	HE
Cumulative Score		4.23	1.03	HE

Research Question Three

To what extent does social influence affects FAT's intention to adopt m-learning for teaching financial accounting?

The mean score of seven of the questionnaire items used to determine research question three falls under the index score for very high extent and high extent. Questionnaire items 25, 26 and 28 that had mean score of 1.67, 1.33 and 1.83 respectively falls under the criterion of very low extent and low extent. The cumulative mean score obtained was 3.48 with standard deviation of 1.04. The cumulative mean score falls under the scale of high extent. This means that the extent of social influence on FAT's intention to adopt m-learning for teaching of financial accounting was found to be moderate as presented in Table 3.

Table 3 Descriptive Statistics used to answer Research Question Three

Q3	Items	X	SD	Decision
21	My colleagues supported the use of mobile device and m-learning apps for teaching.	4.17	1.60	HE
22	My students are supportive of the use of mobile devices and m-learning apps for teaching.	5.00	0.00	LE
23	My friends think that I should use mobile devices and m-learning apps for teaching.	4.50	1.23	HE
24	My family members are helpful in my usage of mobile devices and m-learning apps for teaching.	4.67	0.52	HE
25	My principal supported the use of mobile device and m-learning apps for teaching.	1.67	0.82	LE
26	My parents supported the use of mobile device and m-learning apps for teaching.	1.33	0.52	HE
27	My community supports the use of mobile device and m-learning apps for teaching.	3.50	1.76	HE
28	My supervisors are supportive of m-learning.	1.83	1.17	HE
29	Other people who are important to me think that I should use mobile device and m-learning apps for teaching and learning.	4.33	1.21	HE
30	Other people who influence my behavior supported the use of mobile device and m-learning apps for teaching.	3.83	1.60	HE
Cumulative Score		3.48	1.04	ME

Research Question Four

What is the extent to which facilitating conditions necessary for m-learning exist among FATs?

The mean score of seven of the items used to answer research question four were found to be within the index score of high extent and moderate extent (3.33 to 4.33). Three of the items fall under the benchmark for low extent and very low extent (1.33 to 1.83). The cumulative weighted mean of 3.18 was obtained. And the

cumulative standard deviation of 1.12. The cumulative mean score falls under the range of moderate extent. This means that the extent of the existence of facilitating conditions necessary for m-learning among FATs was moderate as shown in Table 4.

Table 4 Descriptive Statistics used to answer Research Question Four				
Q4	Items	X	SD	Decision
31	I possessed the knowledge necessary for m-learning.	3.33	1.21	ME
32	I possessed the skills necessary for m-learning.	4.33	1.60	HE
33	I have a mobile device required for m-learning.	3.83	1.17	HE
34	My school has adequate infrastructure for m-learning.	1.67	1.17	LE
35	Wireless internet network is affordable to me.	4.17	0.75	HE
36	I can access 3G wireless internet network anywhere.	3.83	0.52	HE
37	M-learning applications are affordable to me.	4.00	1.10	HE
38	My school policies are supportive of m-learning.	1.33	0.52	VLE
39	Mobile devices are affordable to me.	3.50	1.64	HE
40	I can access WiFi wireless internet network anywhere.	1.83	1.51	LE
Cumulative Score		3.18	1.12	ME

Research Question Five

What is the behavioural intention of FATs toward m-learning adoption?

The mean score of the four out of the five items used to answer research question five were found to be within the index score of strongly agreed and agreed (4.00 - 4.50). Only one of the items fall under the benchmark for disagreed (2.33). The cumulative weighted mean of 3.93 was obtained. And the cumulative standard deviation of 1.06. The cumulative mean score falls under the range of agreed. This indicated that FATs agreed of having a positive behavioural intention toward m-learning as presented in Table 5.

Table 5 Descriptive Statistics used to answer Research Question Five				
Q5	Items	X	SD	Decision
41	I always try to use mobile devices and m-learning apps for teaching	2.33	1.51	D
42	I plan to continue using mobile devices and m-learning apps for teaching in the future	4.00	1.27	A
43	I intend to use mobile devices and m-learning apps for teaching in the future	4.33	1.21	A
44	I will accept the use of mobile devices and m-learning apps for teaching	4.50	0.55	SA
45	I predict using mobile devices and m-learning apps for teaching in the future	4.50	0.84	SA
Cumulative Score		3.93	1.08	A

However, the cumulative means of all the four research questions are 4.23, 4.23, 3.48 and 3.18 whereas the corresponding cumulative standard deviations are 0.95, 1.03, 1.04 and 1.12. Therefore, the pooled mean and pooled standard deviation for the four research questions are 3.78 and 1.04 high respectively. Based on this finding, it is clear that FATs show a positive behavioural intention toward m-learning adoption in GSTCs in Gombe state.

Moreover, the results obtained from the research hypotheses are presented as follows:

The reliability statistics presented in Table 6 indicates that the scale has an acceptable internal consistency, with a Cronbach's alpha of 0.70 as opined by Cronbach (1951).

Table 6 Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	Number of Items
.703	.692	5

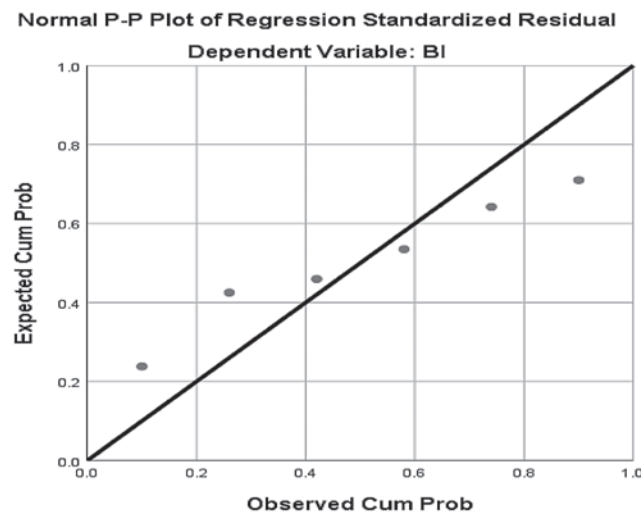


Figure 2: Normal P-P Plot of Regression Standardized Residual

The finding that emerged from Figure 2 revealed that there are no major deviations from the normality because the points lie in a reasonable straight diagonal line from the bottom left to the top right. Moreover, the scatter plot depicts a rectangular shape and there are no much deviations from the centre. This clearly indicates that the assumptions of independence of residuals and homoscedasticity are met. However, as presented in Tables 10, 11, 12 and 13, none of the independent variables show a tolerance value less than 0.1 and Variance inflation factor (VIF) value above 10 except PE with VIF value slightly above 10 (10.031), this indicates that excessive multi collinearity is not a problem as opined by Tabachnick and Fidell (2013).

Table 7 indicates that the four independent variables which include PE, EE, SI, FC correlate positively with the dependent variable which is BI except FC which show a weak negative correlation. The independent variables with the strongest correlation coefficient was PE, followed by EE, then followed by SI while FC has the least correlation coefficient. In the same vein, all the independent variables correlate positively with each other except SI with FC which show a very weak negative correlation coefficient.

Table 7		Summary of Correlational Analysis				
		BI	PE	EE	SI	FC
Pearson Correlation	BI	1.000	.685	.532	.324	-.257
	PE	.685	1.000	.580	.601	.331
	EE	.532	.580	1.000	.509	.528
	SI	.324	.601	.509	1.000	-.069
	FC	-.257	.331	.528	-.069	1.000
Sig. (1-tailed)	BI	—	.067	.138	.266	.312
	PE	.067	—	.114	.103	.261
	EE	.138	.114	—	.151	.141
	SI	.266	.103	.151	—	.449
	FC	.312	.261	.141	.449	—

From Table 8, the dependent variable (BI) shows an R Square of 0.847 representing 85 percent, this clearly indicates that the independent variables (PE, EE, SI, FC) explained 85 percent of the variance in dependent variable (BI).

Table 8		Summary of Regression Analysis ^b		
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.921 ^a	.847	.237	1.19305

a. Predictors: (Constant), FC, SI, PE, EE

b. Dependent Variable: BI

The analysis of variance in Table 9 indicated that the independent variables (FC, SI, PE, EE) show a cumulative significant effect on the dependent variable (BI), whereby the probability value (p-value) is less than the level of significance, ($p < 0.05$). This means that the independent variables (PE, EE, SI, FC) have a cumulative significant effect on financial accounting teachers' behavioural intention toward m-learning adoption in GSTCs in Gombe state.

Table 9		Summary of ANOVA Analysis ^a				
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	7.910	4	1.977	1.389	.006 ^b
	Residual	1.423	1	1.423		
	Total	9.333	5			

a. Dependent Variable: BI

b. Predictors: (Constant), FC, SI, PE, EE

Null Hypothesis One

Performance expectancy has no significant effect on financial accounting teachers' behavioural intention toward m-learning adoption.

The result of the multiple regression presented in Table 10 indicated that performance expectancy has a standardized coefficient beta of 0.793 and a p-value of 0.000. This clearly indicates that the null hypothesis one which states that performance expectancy has no significant effect on financial accounting teachers' behavioural intention toward m-learning adoption was hereby rejected and the alternative hypothesis upheld, this means that performance expectancy has a significant effect on financial accounting teachers' behavioural intention toward m-learning adoption in GSTCs in Gombe state.

Table 10 Regression Analysis Coefficients for Testing Null Hypothesis One					
Variable	Standardized Coefficients		Collinearity Statistics		Decision
	Beta	p-value	Tolerance	VIF	
PE	.793	.000	.100	10.031	Rejected

Null Hypothesis Two

Effort expectancy has no significant effect on financial accounting teachers' behavioural intention toward m-learning adoption.

The result of the multiple regression presented in Table 11 indicated that effort expectancy has a standardized coefficient beta of 0.429 and a p-value of 0.000. This clearly indicates that the null hypothesis two which states that effort expectancy has no significant effect on financial accounting teachers' behavioural intention toward m-learning adoption was hereby rejected and the alternative hypothesis upheld, this means that effort expectancy has a significant effect on financial accounting teachers' behavioural intention toward m-learning adoption in GSTCs in Gombe state.

Table 11 Regression Analysis Coefficients for Testing Null Hypothesis Two					
Variable	Standardized Coefficients		Collinearity Statistics		Decision
	Beta	p-value	Tolerance	VIF	
EE	.429	.000	.176	5.682	Rejected

Null Hypothesis Three

Social influence has no significant effect on financial accounting teachers' behavioural intention toward m-learning adoption.

The result of the multiple regression presented in Table 12 indicated that social influence has a standardized coefficient beta of 0.328 and a p-value of 0.000. This clearly indicates that the null hypothesis three which states that social influence has no significant effect on financial accounting teachers' behavioural intention toward m-learning adoption was hereby rejected and the alternative hypothesis upheld, this means that social

influence has a significant effect on financial accounting teachers' behavioural intention toward m-learning adoption in GSTCs in Gombe state.

Table 12 Regression Analysis Coefficients for Testing Null Hypothesis Three					
Variable	Standardized Coefficients		Collinearity Statistics		Decision
	Beta	p-value	Tolerance	VIF	
SI	.328	.000	.158	6.329	Rejected

Null Hypothesis Four

Facilitating conditions have no significant effect on financial accounting teachers' behavioural intention toward m-learning adoption.

The result of the multiple regression presented in Table 13 indicated that facilitating conditions has a standardized coefficient beta of 0.328 and a p-value of 0.000. This clearly indicates that the null hypothesis four which states that facilitating conditions has no significant effect on financial accounting teachers' behavioural intention toward m-learning adoption was hereby rejected and the alternative hypothesis upheld, this means that facilitating conditions has a significant effect on financial accounting teachers' behavioural intention toward m-learning adoption in GSTCs in Gombe state.

Table 13 Regression Analysis Coefficients for Testing Null Hypothesis Four					
Variable	Standardized Coefficients		Collinearity Statistics		Decision
	Beta	p-value	Tolerance	VIF	
FC	-.237	.000	.105	9.524	Rejected

However, among the independent variables, the variable with the highest Beta value was PE (0.793) then followed by EE (0.429) then followed by SI (0.328) and the least was FC (-0.237). This means that PE makes the strongest unique contribution in explaining the dependent variable (BI) then followed by EE, then followed by SI while FC has the least unique contribution.

Discussion of Findings

The finding that emerged from research question one reveals a high mean score of performance expectancy on the behavioural intention of FAT toward m-learning. This finding was supported by the finding of hypothesis one which reported that performance expectancy has a significant effect on behavioural intention of FATs toward m-learning. The findings are in agreement with that of Chelvarayan et al. (2020); Hamzah et al. (2020); Hoi (2020); Shorfuzzaman and Alhussein (2016); Al-Hujran et al. (2014); Abu-Al-Aish (2014); Eltayeb and Hegazi (2014); Jackman (2014); Mtebe and Raisamo (2014) and McConatha et al. (2008). On the contrary, the findings contradict that of Jairak et al. (2009) who reported a low mean score and insignificant effect of performance expectancy on behavioural intention toward accepting m-learning in institutions of higher learning in Thailand. This can be attributed to dissimilarities inherent in the two environments.

The finding that emerged from research question two reveals a high mean score of effort expectancy (ease-of-use) on the behavioural intention of FAT toward m-learning. This finding was supported by the finding of hypothesis two which reported that effort expectancy has a significant effect on behavioural intention of FATs toward m-learning. The findings are in conformity with that of Al-Emran et al. (2020); Kutluk et al. (2015); Al-Hujran et al. (2014); Osang and Ngole (2014); Tagoe and Abakah (2014); and Wei-Han Tan et al. (2011). On the contrary, the findings are not in line with that of Ugur et al. (2016) and Donaldson (2011) who reported a low mean score and insignificant effect of effort expectancy/ease-of-use on behavioural intention to adopt m-learning.

The finding that emerged from research question three reveals a moderate mean score of social influence on the behavioural intention of FAT toward m-learning. This finding was supported by the finding of hypothesis three which reported that social influence has a significant effect on behavioural intention of FATs toward m-learning. The findings are in concordance to some extent with that of Chaka and Govender (2020); Welch et al. (2020); Shorfuzzaman and Alhussein (2016); Al-Hujran et al. (2014); Thomas et al. (2013) and Jairak et al. (2009). On the contrary, this finding does not support that of Hamzah et al. (2020) and Nassuora (2012) who reported a low mean score and insignificant effect of social influence on the behavioural intention to use m-learning in institutions of higher learning.

The finding that emerged from research question four reveals a moderate mean score facilitating conditions on the behavioural intention of FAT toward m-learning. This finding was supported by the finding of hypothesis four which reported that facilitating conditions has a significant effect on behavioural intention of FATs toward m-learning. The findings agree to some extent with that of Welch et al. (2020); Ugur et al. (2016); Jackman (2014); Mtebe and Raisamo, (2014); Thomas et al. (2013) and Donaldson (2011). On the contrary, Al-Hujran et al. (2014) and Jairak et al. (2009) reported a low mean score and insignificant effect of facilitating conditions on the behavioural intention to use m-learning in institutions of higher learning.

However, the finding that emerged from the pooled mean and pooled standard deviation, confirms a high positive behavioural intention of FATs of GSTCs toward m-learning adoption in Gombe state. This finding was supported by the finding that emerged from regression analysis and ANOVA which reported that performance expectancy, effort expectancy, social influence and facilitating conditions have a significant effect on behavioural intention of FATs toward m-learning. Also, all the independent variables (PE, EE, SI, FC) explained 85 percent of the variance in dependent variable (BI). This finding supports that of Rataj and Wojcik (2020); Chaka and Govender, (2017); Frederick, (2015); Altayeb and Hegazi, (2014); Osang and Ngole, (2014); Mtebe and Raisamo, (2014); Tagoe and Abakah (2014); Aljunaid et al. (2013) and Pollara, (2011). On the contrary, Lam et al. (2011) reported that many teachers are not willing to use m-learning as teaching strategy.

Conclusion

The overall finding of the study indicates that FATs of GSTCs show a high positive behavioural intention toward m-learning adoption in Gombe State. Therefore, adoption of m-learning in GSTCs in Gombe State will not only makes teaching of financial accounting effortless but will also improves its delivery and consequently improves the performance of students in examinations.

Recommendations

Based on the study's finding and conclusion, the study recommends that government at all levels should consider the adoption of m-learning particularly in GSTCs to supplement teaching of financial accounting. Stakeholders in education should ensure frequent training of FATs on how best to utilize mobile devices for teaching financial accounting through organizing workshops, seminars and conferences. Moreover, curriculum planners and reviewers should ensure the incorporation of instructional delivery activities and experiences that supports m-learning into the existing curriculum for the delivery of financial accounting instructions. Conclusively, there is need for conducting another study on the behavioural intention of school administrators and supervisors toward m-learning adoption.

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Teachers' Acceptance of Lesbian, Gay, Bisexual, Transgender, and Queer (LGBTQ) Students

Greg T. Teodoro

Abstract

Teachers play a crucial role in building a harmonious school environment. However, there are some teachers that treat lesbian, gay, bisexual, transgender, and queer (LGBTQ) students with neglect. Disregarding gender issues and concerns, they discouraged LGBTQ students to realize their full potential. As teachers are very essential in addressing gender equality issues in the classroom, the Researcher explored the teachers' acceptance of LGBTQ students. The Explanatory Sequential Mixed Methods Design was used to connect the quantitative results to the qualitative data collection. There were 200 teacher-respondents, and 50 LGBTQ student-respondents who were surveyed. To further determine the experiences of these students, 12 of them were interviewed. The key results of the study revealed that teachers have a high level of acceptance of LGBTQ students, and it is equally perceived by their LGBTQ students. They related their teachers' acceptance with the practice of gender equality. These students revealed that they were accepted by their teachers because the latter treated them as normal persons and equally as that of other students. These results guided the enhancement of the Gender and Development (GAD) program.

Key Words: LGBTQ Students, Teachers' Acceptance, Gender and Development, Gender Equality, Positive Teacher-Student Relationship, Junior High School

The school should be a nurturing environment intended for learning for all students, regardless of social status, race, or gender. The students eventually will develop into citizens who significantly take part in the nation-building.

Part of the mission of the Department of Education (DepEd, n.d.) is to provide a child-friendly, gender-sensitive, safe, and motivating environment to Filipino students. Teachers, on the other hand, facilitate learning and nurture every student. Teachers cater to every type of student, may they be grouped corresponding to socio-economic status, ethnolinguistic heritage, or gender identity. Teachers have direct knowledge concerning the experiences of sexually diverse students. Specifically, teachers have the perspective of Lesbian, Gay, Bisexual, Transgender, and Queer (LGBTQ) students in the school. LGBTQ students form one vulnerable group of the school community. Likewise, some challenges occur and affect LGBTQ students because of their gender identity and sexuality, as shown in a survey conducted by the Researcher on 1,010 students from the school where he teaches. There are problems experienced by 247 nonbinary students or those who have cross-gender desires. The said problems are depression (73%), confusion regarding gender (71%), insecurity (69%), rejection by friends (53%), bullied by others (52%), and discrimination (43%). Although there are enabling laws and issued DepEd policies protecting LGBTQ students, problems still persist because, more often, they are not carried out nor strictly enforced (Thoreson, 2017).

Teachers play a crucial role in building a harmonious school environment (DepEd, 2017b). However, some teachers treat LGBTQ students with neglect or inaction. Kosciw, Greytak, Zongrone, Clark, and Truong (2018) revealed those teachers did not often intervene when anti-LGBTQ remarks were made in

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their presence. Teachers did nothing or told the reporting LGBTQ student to ignore the victimization of harassment or assault. Further, they emphasized that the teachers who did not address the reports of students' victimization demoralized the victimized students and could discourage other students from reporting when they are assaulted or harassed at school. Disregarding gender issues and concerns also discouraged LGBTQ students to realize their full potential (Badgett, Waaldijk, & Van der Rodgers, 2019). As teachers are essential in addressing gender equality issues in the classroom (Sampermans & Claes, 2018), the Researcher firmly believed that this is worth investigating further. Moreover, he conceived a proposition that the teachers' acceptance of LGBTQ students is a vital measure in improving gender sensitivity and equality that eventually will reduce the problems of these students in school.

Teachers significantly impact the experiences of their students in school. Positive teacher-student relationships based on acceptance and respect build a friendly environment and motivate students. Through the teachers' affirmative actions, gender mainstreaming, and the commitment to implement gender-responsive policies, gender equality can be achieved.

Research Questions

1. What is the teachers' level of acceptance of LGBTQ students as perceived by the two groups of respondents?
2. Is there a significant difference between the perceptions of the two groups of respondents on the level of acceptance of LGBTQ students?
3. What are the experiences of LGBTQ students regarding their teachers' acceptance?
4. How may the findings of the study be utilized in enhancing the GAD program?

Methodology

This study was prepared through the Explanatory Sequential Mixed Methods Design. This design intended to connect the quantitative results to the qualitative data collection. In the quantitative part of the study, the Researcher determined the level of acceptance of LGBTQ students as perceived by the two groups of respondents. Through statistical evaluation, the researcher computed the significant difference between the responses of the two groups of respondents regarding the teachers' level of acceptance of LGBTQ students. In the qualitative part of the study, the researcher examined the experiences of the LGBTQ students, determined their insights about their teachers' acceptance, and connected this with the previous results in teachers' level of acceptance of LGBTQ students.

The researcher made use of Respondent Triangulation to evaluate the teachers' level of acceptance, as perceived by teachers and students as the two groups of respondents. There are 200 teachers from the three selected public secondary schools in the Division of Valenzuela City, Philippines during the Academic Year 2019-2020. They were included in the first group of respondents. For the second group of respondents, there were 50 LGBTQ students from the same selected schools. To further determine the experiences of these students, 12 of them were interviewed. They were from the four grade levels in the three selected public secondary schools.

Quota sampling and purposive sampling were the techniques utilized in choosing the respondents included in the second group. The researcher used quota sampling in limiting the number of respondents to 50 students,

and he purposively selected confirmed LGBTQ students to serve the intention of the study. For the teacher respondents, he purposively selected teachers from the three schools representing a medium, a large, and a very large-sized public secondary schools in Valenzuela City, Philippines.

Results

Teachers' Level of Acceptance of LGBTQ Students

1.1. As Perceived by Teachers

Teachers' acceptance is a variety of interpersonal acceptance, which refers to the warmth, affection, care, concern, nurturance, or support of teachers shown to their students (Rohner, 2016). It also indicates the teachers' approval, understanding, tolerance, or friendliness with their students. Teachers rated their level of acceptance of LGBTQ students.

Table 1 Teachers' Level of Acceptance of LGBTQ Students			
Indicators	WM	VI	Rank
Teachers can tolerate some of the determining signs or manifestations of LGBTQ students.	3.10	A	10
Teachers allow LGBTQ students to show who they are.	3.43	HA	5
Teachers find ways to practice gender mainstreaming, sensitivity, and equality.	3.33	HA	6.5
Teachers respect the preference of LGBTQ students.	3.53	HA	2
Teachers are openhearted to the behaviors of LGBTQ students.	3.33	HA	6.5
Teachers appreciate the skills and talents of LGBTQ students.	3.77	HA	1
Teachers welcome LGBTQ students from coming out and being out at school.	3.19	A	9
Teachers do not discriminate against LGBTQ students in any manner.	3.51	HA	3
Teachers openly protect LGBTQ students from harassment, abuse, and bullying.	3.47	HA	4
Teachers are not afraid to show support to LGBTQ students.	3.32	HA	8
Overall Weighted Mean	3.40	HA	

Table 1 shows the teachers' level of acceptance of LGBTQ students and the corresponding weighted means.

In Rank 1, with a weighted mean of 3.77 or highly accepted, teachers appreciate the skills and talents of LGBTQ students. In Rank 2, with a weighted mean of 3.53 or highly accepted, teachers respect the preference of LGBTQ students. In Rank 3, with a weighted mean of 3.51 or highly accepted, teachers do not discriminate against LGBTQ students in any manner. Teachers had high regard for the rights of LGBTQ students and treated their students equally.

These show the top two indicators of the teachers' high level of acceptance of LGBTQ students involved understanding the students' abilities and identities. Fosen (2016) also indicated this factor in attaining a positive teacher-student relationship, which is to know the students' qualities, including their abilities and identities. The third in the top three indicators of the teachers' acceptance of LGBTQ students involved showing no prejudice and respecting the rights of LGBTQ students. As specified by ICJ (2017) and CHR (2019), the respect for the human rights of LGBTQ and the support to nondiscrimination based on SOGIE were vital. This is also parallel to the findings of Persinger et al. (2020) that adults showing acceptance toward trans students had strong support for policies and practices that inclusively protect them.

1.2. As Perceived by Students

Table 2 Teachers' Level of Acceptance of LGBTQ Students As Perceived by Students			
Indicators	WM	VI	Rank
Teachers can tolerate some of the determining signs or manifestations of LGBTQ students.	3.06	A	10
Teachers allow LGBTQ students to show who they are.	3.56	HA	2
Teachers find ways to practice gender mainstreaming, sensitivity, and equality.	3.24	A	8
Teachers respect the preference of LGBTQ students.	3.52	HA	3
Teachers are openhearted to the behaviors of LGBTQ students.	3.48	HA	4
Teachers appreciate the skills and talents of LGBTQ students.	3.68	HA	1
Teachers welcome LGBTQ students from coming out and being out at school.	3.32	HA	7
Teachers do not discriminate against LGBTQ students in any manner.	3.22	A	9
Teachers openly protect LGBTQ students from harassment, abuse, and bullying.	3.42	HA	5
Teachers are not afraid to show support to LGBTQ students.	3.40	HA	6
Overall Weighted Mean	3.39	HA	

Table 2 shows the perceived teachers' level of acceptance of LGBTQ students and the corresponding weighted means, which are gathered from the student respondents. LGBTQ students also rated their perceived teachers' level of acceptance to determine if the teachers' acceptance is similarly felt by their students.

In rank 1, with a weighted mean of 3.68 or highly accepted, the students perceived that their teachers appreciate their skills and talents as LGBTQ students. In rank 2, with a weighted mean of 3.56 or highly accepted, students perceived that their teachers allow LGBTQ students to show who they are. In rank 3, with a weighted mean of 3.52 or highly accepted, students perceived that their teachers respect their preference as LGBTQ students.

These show the top three indicators of LGBTQ students perceived their teachers' high level of acceptance involved revealing and understanding the students' personal characteristics, abilities, and identities. These imply that LGBTQ students acknowledged the efforts of their teachers to know them. Likewise, Fosen (2016) indicated that knowing the students' qualities was a factor in positive teacher-student relationships. Additionally, Skipper and Douglas (2015) proved that feedback is an essential factor in developing these relationships.

The teachers' level of acceptance of LGBTQ students as perceived by students has an overall weighted mean of 3.39, which means highly accepted. This is the same as the previous result. This implies that there are warm connections between teachers and these students. This conforms to Rohner's (2016) warmth dimension of interpersonal acceptance, which is the high level of the affectional connection between persons.

2. The Extent of Difference Between the Two Groups of Respondents

Table 3 The Extent of Difference Between the Two Groups of Respondents on the Teachers' Level of Acceptance of LGBTQ Students							
Group	n	Mean	SD	α	z-Value Computed Critical		Decision
Teachers	200	3.40	0.71	0.05	0.06	1.96	Accept Ho
Students	50	3.39	0.67				

Table 3 shows the summarized data and results on the extent of difference between the perceptions of the two groups of respondents on the teachers' level of acceptance of LGBTQ students.

The z-test is used as a statistical tool to determine the significant difference between these two groups of respondents on their perceived teachers' level of acceptance. The computed z-value, which is 0.06, is lower than the critical z-value, which is 1.96 at $\alpha = 0.05$ level of significance. Thus, the null hypothesis is accepted. This indicates that there is no significant difference between the two groups of respondents on the teachers' level of acceptance of LGBTQ students. Therefore, the teachers' high level of acceptance of LGBTQ students is equally perceived by their LGBTQ students. This is also shown in the results of Alicar-Cadorna and Mata (2014) that homosexual students were highly accepted by their school community, and they had no significant difference in the level of acceptance. Gama et al. (2017) further implied that teacher acceptance is an important variable to consider in improving interpersonal relations in schools.

3. Experiences of LGBTQ Students Regarding their Teachers' Acceptance

The following themes are derived from the analysis of the transcripts of the interviews from 12 LGBTQ students who are the participants of the qualitative part of the study. There are eight male students or 75% of the total participants and four female students or 25% of the total participants. The students who took part in the interview acknowledged that they are part of the LGBTQ community, and most of them are gays. Many of them are optimists who have been accepted by their families. They mentioned that it is hard to be LGBTQ because they are judged, bullied, discriminated, ridiculed, or teased based on their gender identity. Most of them found out their varied gender identity between the ages of 10-12 years old, which is in the latter part of their time in elementary school to the earlier part of junior high school.

3.1. Societal Prejudice

In school, LGBTQ students experienced being judged, ridiculed, and teased by others who were mostly their classmates. They chose to be unaffected by the comments of others. For instance, Participant A mentioned, “I feel sad when sometimes someone ridicules me; I do not mind them.”

Some students felt they were unnoticed by their teachers since their gender identities were not too obvious. As Participant F conveyed, “They reacted that my identity was not that obvious.”

3.2. Positive Individuals

Although LGBTQ students faced societal prejudice, it was overshadowed by their positivism. They consciously highlighted their positive experiences in school. They pointed out the affirmative views about them, which were commendable, talented, and enjoyable to be with. As Participant C said,

I have always heard that being gay is not a sin and that I can make them happy, and for me, it is a pleasure to hear them say that. They considered me a good role model to emulate because of my talent and excellence.

This is also reflected in the previous result that teachers appreciate the skills and talents of LGBTQ students, which was the top indicator in the teachers’ level of acceptance.

Having friends who supported them and have the gender identity they identify with uplifted their feelings. Participant J stated, “My happiest moment is when I have many friends who support and accept me.” This is also the observation of the teachers in the previous result that LGBTQ students have a circle of friends with the gender identity they relate with, which was the top LGBTQ manifestation. LGBTQ students were happy because their families, teachers, and most of their classmates accepted them. Participant H expressed, “It is happy to be a part of LGBTQ because my family and teachers accepted me.”

3.3. Teachers’ Acceptance of LGBTQ Students

All LGBTQ students felt their teachers’ acceptance. Their teachers treat them as normal persons and equally as other students. As Participant I affirmed, “They treat me as a normal person, and they accept me being an LGBTQ student.” It is supported by Participant G when asked about their teachers’ acceptance; he responded, “Yes, because they know how to treat people equally even though you are part of the LGBTQ community.” Thus, LGBTQ students implied that the key indicator in teachers’ acceptance is gender equality.

LGBTQ students emphasized that they are highly accepted by their teachers based on the confirmatory question on the rating of their teachers’ acceptance. This is parallel to the preceding results in assessing the teachers’ level of acceptance of LGBTQ students. To restate, there is a high level of teachers’ acceptance of LGBTQ students, and it is equally perceived by these students. There is no doubt that the ratings obtained from the teachers accurately reflect their acceptance. It is verified by the LGBTQ students’ perceived teachers’ acceptance, analyzed through the z-test to be statistically the same, and finally, it is also established in the experiences of these students concerning their teachers’ level of acceptance.

4. Utilization of the Findings of the Study in Enhancing the GAD Program

Utilizing the results of the study, the Researcher proposed an enhanced GAD program for the succeeding academic year, focusing on the following:

1. Gender mainstreaming,
2. Gender sensitivity, and
3. Strategies in addressing gender-based discrimination and violence in school.

The proposed GAD program could be done through a virtual or face-to-face conference, whichever manner is suited in the circumstances of the school. The semiannual school-based in-service training and the annual GAD seminar are proposed to be the avenue for the discussion on the enhanced GAD program. These training programs are best suited in disseminating the said information to improve the responsiveness of teachers and staff on GAD issues and concerns.

Discussion

The key results of the study revealed that teachers have a high level of acceptance of LGBTQ students, and it is similarly perceived by their LGBTQ students. This implies that the teachers' acceptance was recognized by their LGBTQ students.

1. Teachers Have a High Level of Acceptance of LGBTQ Students.

The overall weighted means of the teachers' level of acceptance of LGBTQ students as perceived by teachers and students are 3.40 and 3.39, respectively. The means are both interpreted as highly accepted. Therefore, teachers have a high level of acceptance of LGBTQ students. This also shows a similar result from Alicar-Cadorna and Mata (2014) that homosexual students were highly accepted by their school community, which included teachers.

Almost all the indicators listed from both teacher and student respondents are rated with a high level of teachers' acceptance. The most common indicators of teachers' level of acceptance of LGBTQ students involve understanding the students' personal characteristics, abilities, and identities. Fosen (2016) also indicated this factor in attaining a positive teacher-student relationship, which is to know the students' qualities.

2. The Teachers' High Level of Acceptance of LGBTQ Students is Equally Perceived by Their Students.

The significant difference between the two groups of respondents on their perceived teachers' level of acceptance was determined in the study. The result entails that there is no significant difference between the two groups of respondents on the teachers' level of acceptance of LGBTQ students. Therefore, the teachers' high level of acceptance of LGBTQ students is equally perceived by their LGBTQ students. This implies that there are warm connections between teachers and these students. This conforms to Rohner's (2016) warmth dimension of interpersonal acceptance, which is the high level of the affectional connection between persons. This also implies that LGBTQ students acknowledged the efforts of their teachers to know them. Similarly, Skipper and Douglas (2015) noted that feedback is an essential factor in developing positive teacher-student relationships. It reaffirms the findings of Alicar-Cadorna and Mata (2014) that homosexual students are highly accepted by their school community, and they have no significant difference in the level of acceptance.

3. Teachers' Acceptance Impacts the Positive Experiences of LGBTQ Students in School.

Although LGBTQ students faced societal prejudice, it was overshadowed by their positivism. Moran (2017) also found factors that affect the experiences of transgenders, some incidents were adverse, but some were positive. LGBTQ students consciously highlighted their positive experiences in school. They pointed out the affirmative views about them, which are commendable, talented, and enjoyable to be with. In motivating students, Koca (2016) revealed that teachers encourage them that they have the potential to succeed. This is also reflected in the result that teachers appreciate the skills and talents of LGBTQ students, which is the top indicator in the teachers' level of acceptance. LGBTQ students are also happy because their teachers accepted them. Therefore, teachers' acceptance impacts the positive experiences of LGBTQ students in school. Likewise, Gama et al. (2017) implied that teachers' acceptance is important in improving interpersonal relations in schools. Garvey et al. (2018) further noted that the school environment has an impact on LGBTQ students' academic success.

4. The Key Indicator of Teachers' Acceptance is Gender Equality.

The teachers' acceptance is perceived by LGBTQ students through gender equality. These students revealed that they are accepted by their teachers because the latter treated them as normal persons and equally as other students. Therefore, the key indicator of teachers' acceptance is gender equality. This is also related to the result of Sampermans and Claes (2018) that there is a connection between positive student-teacher relationships and gender equality attitudes. It further supports the goals of DepEd (2017a) that schools mainstream gender to foster gender equality and Soliman (2016) that GAD sought to equalize the relations between people.

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An Evaluative Study of College Students with Respect to Exploring The Consequences of Covid-19 on Social, Psychological and Educational Aspects Due to Closure of Offline Classes

Jyoti Raina
Deepika, Himani Semwal and Nidhi

Abstract

This research is an evaluative study that explores the social, psychological and educational consequences of the physical closure of colleges, leading to discontinuation of offline/face to face classes upon students' lives. It is based on data gathered from a volunteer sample of 22 second and third year students from various departments of a woman's college, ranging across science, commerce and humanities streams. These participants had switched over from a face- to- face mode of studies to online education suddenly in March 2020, when college campuses closed physically. The participants had experienced online education for more than 10 months when the data was collected from them in January-February 2021. The data was gathered through a question-based telephonic interview. The study was data-driven. The findings indicated that a vast majority of participants sorely missed a closer student-teacher relationship, the college premises as a site of social interaction and a concentration of teaching-learning in actual classrooms. The overall experience was reported as that of social isolation, psychological turmoil and learning losses due to the physical closure of the college. The physical closure of the college was like a spanner in the wheel for each participant in some way or the other.

Key Words: Online Education, Learning Losses.

In response to Covid-19 Pandemic, the Government of India imposed a lockdown on college campuses unexpectedly, and they were closed all over the country in March 2020. There was invisibilisation of the physical premises of the college which has customarily been an integral part of a student's everyday life. There was a complete closure of offline/face to face classes. In the subsequent new academic session, colleges re-opened though the college campus was physically closed. College education continued albeit as online education in virtual spaces. The academic calendar, courses of study, teaching-learning and assessment switched to the remote (mostly online) mode. Teaching was now conducted through video conferencing platforms and instructional materials shared through asynchronous tools like Google classroom. It is not a misnomer to say that the pandemic had changed the face of college education. What were the effects of this epochal change on young students' lives? Several reports, surveys, and researches have appeared in the

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public sphere that have suggested that there have been precipitous educational losses that would have long-term effects on the students' lives (Jain, Lall, and Singh, 2020; Jena, 2020,). The converse question - Were there any affirmative imports of the physical closure of college? - remains worth inquiry. Did the college closure provide the students with opportunities, or time, to do something new or innovative? Did any of these enabling consequences blunt the setbacks caused by the closure of offline classes?

The change in students' lives due to transition from a face- to- face mode to online education has social, psychological and educational aspects. Each of these merits research attention. This evaluative study has been designed as a descriptive, non-experimental and exploratory study that examines the social, psychological and educational consequences of pandemic, which caused physical closure of colleges, on college students' lives. The research is data-driven. It uses the institutional research model to evaluate the consequences of Covid-19 on social, psychological, and educational aspects of students' lives due to closure of offline classes. It is premised on the thesis that the physical absence of college had wide-ranging, or at least significant, effects upon college students' lives. The research makes the methodological assumption that the institution, namely the college, where the students are enrolled, needs to be the site of research and not merely of data-collection from the subjects. In the institutional research model, the college is not the physical location from where data is gathered but the very location of the research in every sense of the term. The researchers are students of education discipline at the college and therefore in a disciplinary position that is conducive to this kind of research, which is aimed at closely scrutinising the impact of physical college closure on students' lives.

Underlying Theoretical Frameworks

Social Factors in College Education

The eminent Russian educator L.S. Vygotsky (1896-1934), in his seminal socio-cultural theory of education, has argued that social interaction is crucial to learning and a student's peers play an important role in it (Vygotsky, 1978). His educational theory recommends developing opportunities for students to learn with peers, teachers and more knowledgeable people in the society. He believes social factors (external world) to be an essential condition for learning which involves internalisation of socially rooted activities since:

An operation that initially represents an external activity is reconstructed and begins to occur internally (Ibid: 56-57).

Looked through a Vygotskian lens, college education does not involve mere acquisition of a body of textual knowledge but is a wider social process which is the key to learning. Peer interaction is an important mediator of learning. This is one of the core reasons for cut- throat competition among school leaving students who aim at enrolling in not just any college but illustrious colleges. A social life at college provides opportunities for participation in various extracurricular activities, out-of-classroom learning and cultural events. All of these shifted online since physical closure. But do they serve their purpose in the absence of the social context? One of the three objectives of this research was to explore how the lack of peer contact and direct contact with teachers has affected students lives.

Also, in Indian society, stereotypes for a specific gender are tightly framed and social expectations within family life tend to be based on these. Many restrictions are often imposed on women students, like not being allowed to go outside the home without any rational reason. In the years spent at college, youth mainly explore their own personal vision by spending their time with peers. In the process they start to build

new relationships, enjoy stress free time away from the tension of their family life, thereby experiencing independence. But during the college closure period, women students' burden exacerbates in the absence of an enabling environment at home. Confined to their homes the women students got overwhelmed into playing dual roles of a household domestic worker along with that of a full time student. Based on national-level panel data from October 2020's Centre for Monitoring Indian Economy (CMIE) and Consumer Pyramids Household Survey (CPHS) database:

India has amongst the most unequal gender division of household work globally. Comparing hours spent on domestic work pre- and post-lockdown, we find that for both men and women, hours spent on domestic work increased during lockdown, with the increase being higher for women than men.

Through this research, we have also attempted to explore, if women college students also face these stereotypical burdens? And if they do, how do they manage time to pursue their studies? The first objective of the research has been to examine the consequences of these social dimensions.

Psychological Challenges Faced by Students

The early days of Covid-19 pandemic confined students within domestic spaces which completely cut off the social contacts beyond immediate family. Human psychological functioning is co-constituted by the social domain, as the individual lives in a society, where he/she builds relationships, experiences interactions and shares bonds with each other. This social life not only shapes cognitive learning as mentioned in the previous section but also determines the mental and emotional well-being of an individual. There was a sudden social isolation in the students' lives as Covid-19 spread all around. They got restricted in their spaces, sticking to the screens and gadgets all the time while there were news' reports that this leads to serious mental health issues like anxiety, depression, stress and alienation. The closeness to electronic screens was particularly accentuated for students as their education had become online. This estrangement of students from the social world became a psychological challenge confronting their emotional and mental well-being. This social distancing has created a deep void within a being. This pandemic could exaggerate the problems for the people who have been facing psychological inadequacies since before the pandemic. The second research objective has been to investigate how the college closure affected the psychological well-being of students.

Educational By-Products of these Socio-Psychological Factors

College is a public space where students from different sections of the society, different parts of the country, varied caste, class, and socio-cultural background come together. There is no difference in the quality and quantity of formal education that students gain in the physical classroom. But the online education divided the students based on infrastructural endowments. Undeniably, online education was the only medium through which students could have continued formal education during the pandemic. But the student has certain cognitive capacities like memory, attention, concentration, and conceptual understanding. Does learning and cognition in the online education remain the same process? For example, can students concentrate or use attention processes in the same way as in an actual classroom?

Another major aspect regarding college closure is the change in the pedagogical aspects of education. The physical environment surrounding the students changed completely but was there a need for changes in pedagogy? The pedagogical online education, uncritically, came to the fore as soon as it was introduced

(Menon, 2020; Raina, 2020b). Were the teachers trained enough by the concerned institutions to adapt to the qualitative difference required for e-learning? The lockdown brought various opportunities for the teachers to update themselves with the new technology. Did these have an effective impact on online classes?

Research Question

The broader research question was to evaluate the consequences of physical closure of college, accompanied by discontinuation of offline classes, during the Covid-19 pandemic upon college students' lives. This wide research aim was examined for the social, psychological, and educational aspects of college students' lives, respectively. The first objective is to explore the consequences of the social dimensions with respect to closure of offline classes. The second objective is to investigate how the near-complete physical college closure affected the psychological well-being of students. The third objective of the research is to assess the educational consequences of closure of offline classes especially its relationship, if any, with learning losses.

The statement of null hypothesis could be stated as : The closure of offline classes because of Covid-19, did not lead to any consequences with respect to the social, psychological and educational aspects of college students' lives.

Key Words

Several words and terms that are used in this research report have a general dictionary meaning. The key ones are defined hereunder in a way that is specific to the needs of the present study.

Online education has a wide variety of conceptualisations, definitions, and interpretations. In the present study it is defined as the cessation of offline classes by teachers accompanied by classes through various synchronous and asynchronous electronic technologies.

Learning losses are defined as not been able to gain knowledge, skills, and competency that a student has capability to acquire.

Social refers to the human need for other people in one's immediate environment. It is based on the need to live together in some kind of an organisation. For the college students, it is their peers within the class who constitute the direct social aspect of their life. The other students, teachers and staff members of the college are also a constituent part. So are the members beyond the immediate family including one's extended community.

Psychological aspects are - those phenomenon that are related with human thinking, feeling and actions. They are located in the mind and are personal in nature, logic and functioning.

Educational is defined as the formal processes of teaching and learning that take place in a college.

Research Methodology

The Institutional Context

The research study was undertaken at a premier woman's college affiliated to University of Delhi. The college has more than 4500 students and 216 teachers on its rolls. The physical infrastructure includes a

state-of-the-art auditorium, open air theatre and a sprawling sports field. Interdisciplinary groups like NCC, Equal Opportunity Cell, and Gandhi Study Circle. National Service Scheme and Women's Development Centre provide social outreach; and contextualize the formal undergraduate education of young women in the wider socio-political milieu of contemporary India. The college supports more than a dozen literary, creative, and performing arts societies. These out-of-classroom engagements nurture oral, visual and performative processes of knowledge production. A robust academic landscape encourages inter-disciplinary, multidisciplinary, and trans-disciplinary seminars, conferences, and related engagements.

The college has a vibrant institutional culture nurturing collaborative undergraduate research projects. The multi-disciplinary ethos of the college is very useful for undertaking such research studies. The institution is the only college in the south campus of University of Delhi to offer education in all the four streams of Science, Commerce, Humanities and Elementary Education. Many undergraduate research systems, mechanisms and programmes have been institutionalised in the college for more than a decade now. The present work was undertaken under the aegis of one such institutional research scheme called the Pathfinder Project. Under the scheme, the initial research proposal received inputs from the faculty members of a Pathfinder Committee drawn from varied disciplines,

The Design and Sample

The research was designed in a descriptive, exploratory, data-driven, evaluative, and non-experimental approach. The data was gathered from a volunteer sample (henceforth participants) of 22 2nd and 3rd year students from various Departments of the college ranging across Science, Commerce and Humanities streams. The pandemic limited access, personal spaces, choice of sample and tools as there was no scope for face-to-face interaction with the larger college population. The data for the study were gathered in January-February 2021. The participants had been experiencing physical college closure accompanied by discontinuation of offline classes for more than nine months by then.

Research Tool

The data gathering tool was a question-based telephonic interview developed by the Researchers. The interview was designed to enable interviewers and interviewees to examine participants' responses in depth. It followed the interview guide approach. The interview was in three parts, each of which covered the scope of social, psychological and educational arenas. Each interview presented the same questions to all the 22 participants for a total duration ranging from 45 minutes to an hour.

The interview investigating the social dimensions consisted of five questions. These were on difference between experiences of online learning and learning in a physical classroom, effect of absence from college on student-teacher relationship, virtual experience of participation in the co-curricular activities (including webinars, festivals, and workshops), enrolment in other non-formal activities and changing gender role as young women. The psychological effects were examined through three questions based on perceived mental health issues like anxiety, depression, or stress, changes in students' cognitive capacities and effects of absence from the natural surroundings of the college premises. The two questions on educational consequences focussed on whether online education facilitated perspective building in the curricular courses of study and learning losses, if any, due to connectivity or other access related issues.

Data Presentation

All the interviews were transcribed though the transcriptions are not reproduced here for the sake of brevity. To retain a sense of holism the data from these transcriptions are presented hereunder succinctly in Figures 1 to 10. This is largely a numerical reporting. A further descriptive analysis, based on the same transcriptions, is attempted which summarises the data narrative in respect of the three parts of the interview schedule examining the social, psychological and educational consequences of physical college closure and is presented in the penultimate section on research findings.

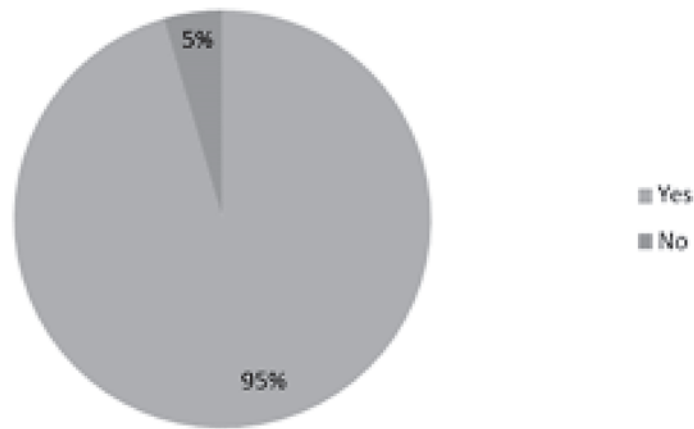


Figure 1: Difference in learning experiences post-college closure
95% of participants experienced a difference in the learning experience.

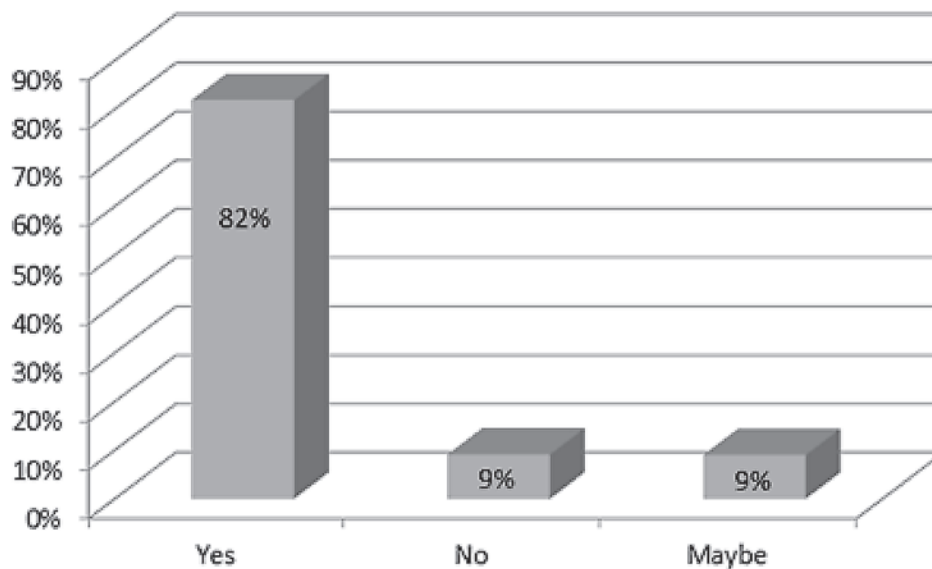


Figure 2: Change in student-teacher relationship

A vast majority of participants reported that their student-teacher relationship got altered because of physical college closure and transition to the virtual mode.

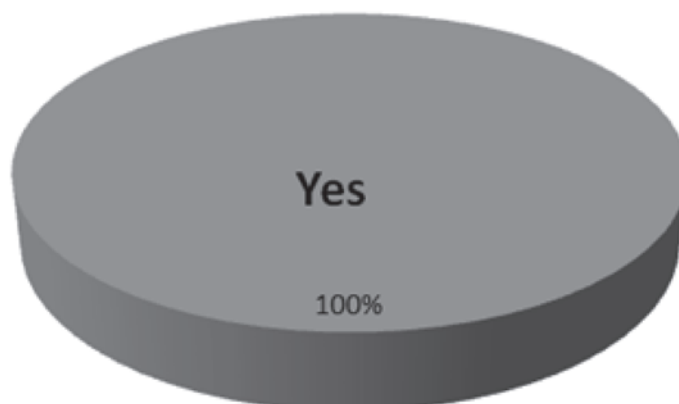


Figure 3: Change in experiencing the co-curricular programmes

All the participating students responded that the cultural landscape of the college was changed.



Figure 4: Nature of involvement in internships and extra-curricular learning programmes

A vast majority of participants had got enrolled in different kinds of internships and massive open online courses (MOOCs).

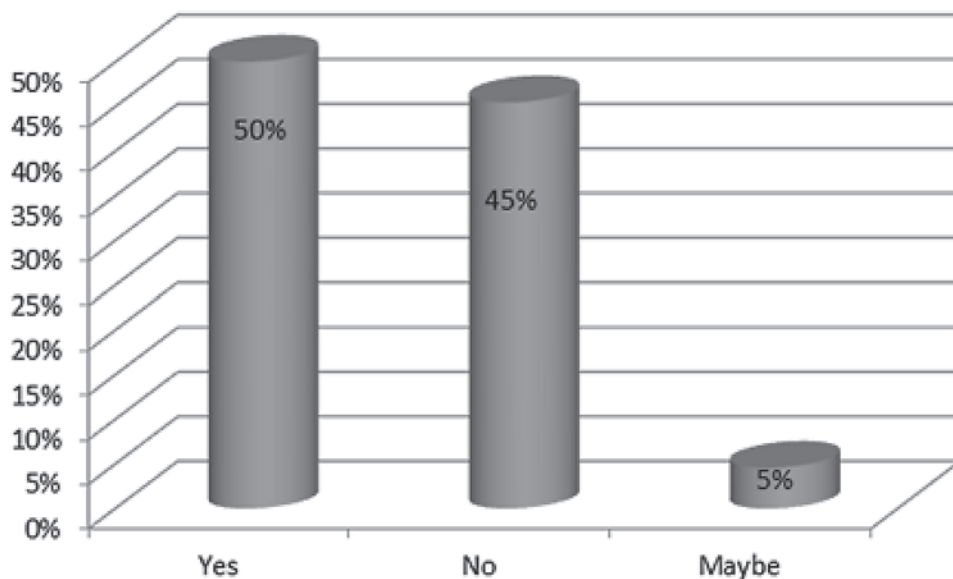


Figure 5: Effects of gender role as a woman

About half of the participants experienced gender biasness in the nature in which their education was affected.

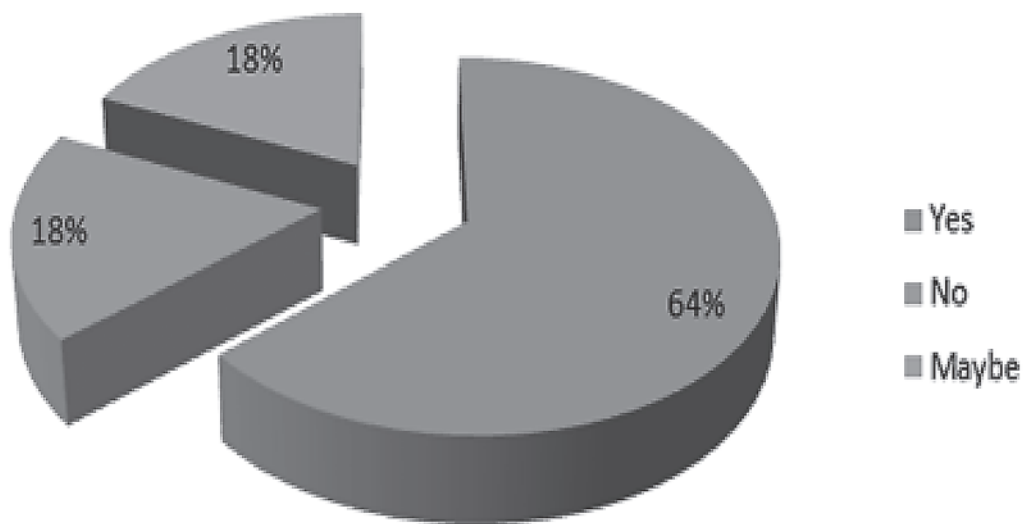


Figure 6: Deteriorating mental health

A sizable majority of participants suffered from mental health issues while many were ambiguous in this regard.

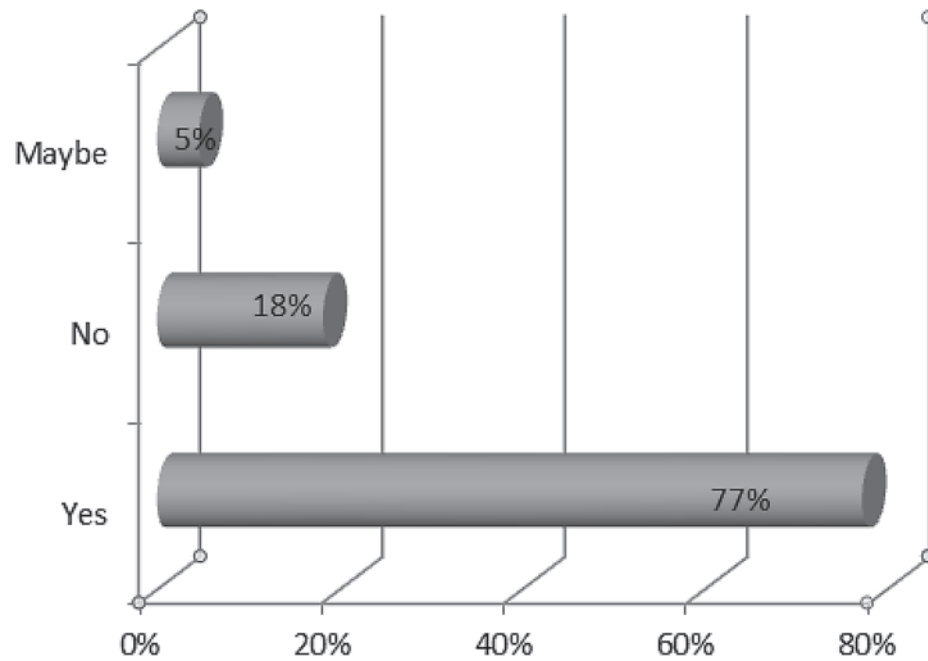


Figure 7: Altered cognitive capacities

More than 2/3rd of participants reported adverse effect on their cognitive learning capacities like attention, memory, concentration, and conceptual understanding.

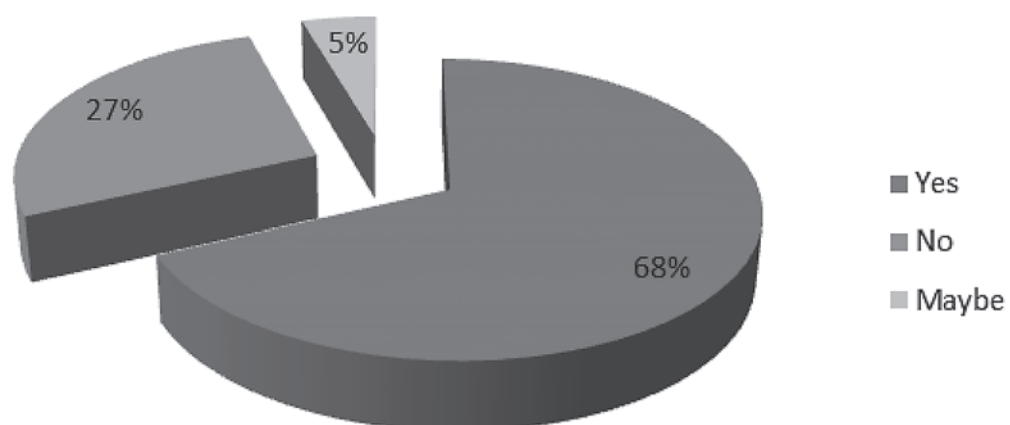


Figure 8: Overall emotional well-being

A great number of participants experienced deterioration in a sense of optimum overall well-being, particularly emotionality.

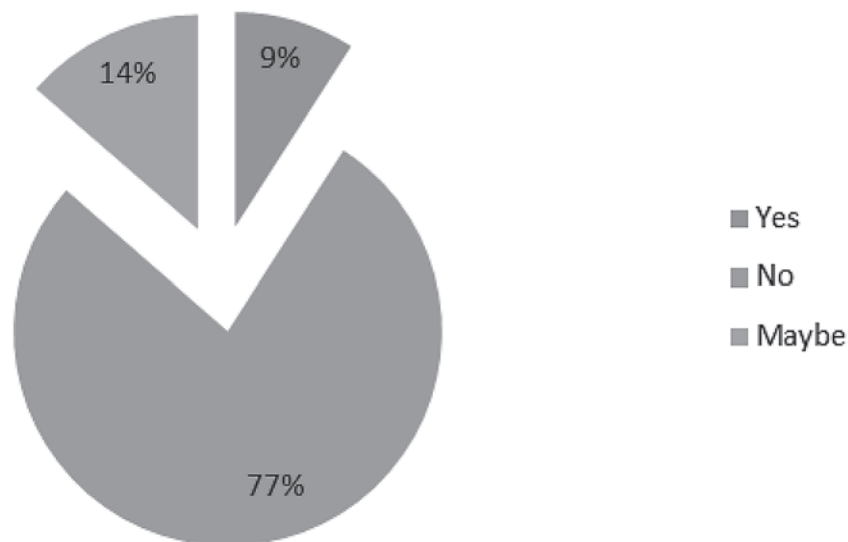


Figure 9: Perspective building

77% participants reported not gaining the essence of the course subjects while 14% were not sure about it

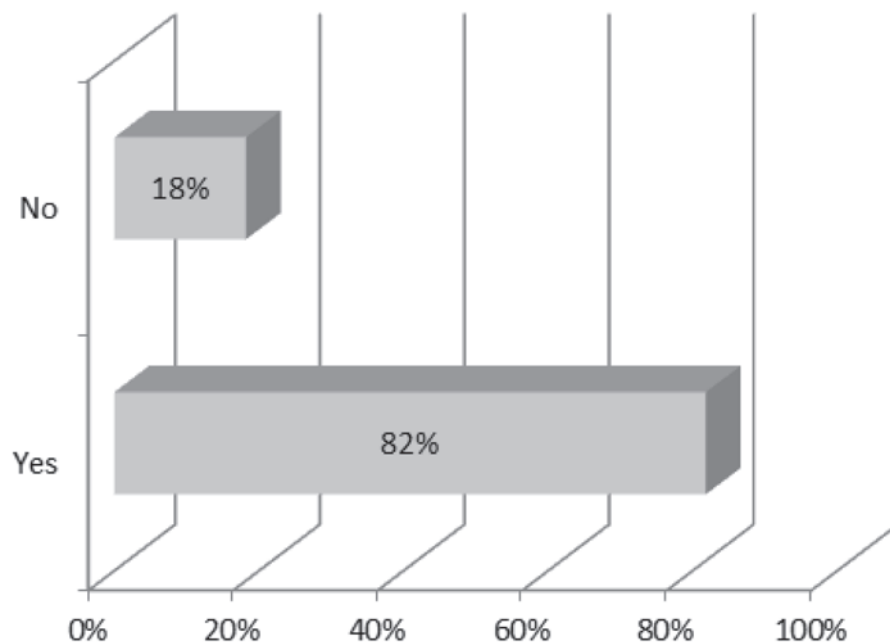


Figure 10: Experiencing learning loss

A vast majority of participants experienced learning losses due to a variety of reasons. These reasons included lack of connectivity, limited gadgets, and infrastructural limitations.

Research Findings

Social Isolation, Psychological Tumult and Learning Losses as Consequences of Physical Closure of College Campus

The day-to-day fallout of physical closure of the college was that the participants found themselves confined between the four walls of their homes. They reported that the physical spaces of college's robust co-curricular programmes, including festivals, seminars and sports days were opportunities for cross cultural and multi-disciplinary interactions. The students from different departments of college as well as from other colleges defy caste, class, and community, gaining access to common physical spaces on the campuses. Even the college library plays this inclusive role in students' lives. Students develop self-expression, self-esteem, and an integrated personality during participation in such programs. But with physical shutting, this coming together in the spirit of equal opportunity has been almost eradicated. These were sorely missed during the college closure. Though some of the co-curricular programmes of the college shifted online as well, but these did not have the same impact, and the experience was a rather contrived one of undergoing the strain of extra screen time. Within the formal curriculum too, group activities, field-based projects and learning through discussions especially for the practicum subjects were obviously missing, leading to not only learning loss but also psycho-social consequences. In the physical mode, the teachers knew each student by their face and name but now they hardly recognised their students beyond their pixelated identities as circles on the screen of a video conferencing system. The participants reported this as among the causes of social isolation from both their peers and teachers, apart from other wide-ranging psychological consequences of such insulation. Somehow this lack of classroom social cohesion contributed to participants' disinterest in engaging with online classes. During these classes, participants faced absence of non-verbal communication, non-maintenance of eye-contact and inability at judgment of the readiness-level of students through their body language, by teachers. This exacerbated since students keep their cameras off for various technical limitations. One of the reasons for this was the lack of gadgets, connectivity issues and limited data packages. This indirectly was among the causes of students' unwillingness (as well as lack of confidence) to turn on their video during online classes or interact with teachers in the virtual class. There was a perpetual fear of network loss. This further resulted in gaps between one class to another finally causing inability to cope up with the curriculum. An analysis of the transcriptions of the interview schedule examining the educational arena of research objectives indicates that more than two-thirds of the participants experienced an overall sense of educational loss. Only a very small number of students gained perspectives or conceptual understanding of their curricular course work during the online education. They were not able to fully comprehend the 'content' (knowledge was perceived as content in online mode) taught in online classes. This tended to cause a communication gap between the teacher, the course content being taught and the student causing a déjà vu sense of losing out. The lectures online were like monologues which did not involve student participation. There was less exchange of personal experiences in the class. The lectures were more focused on the presentation of tightly defined course curriculum rather than personal meaning-making of ideas and concepts from course work. The participants also admitted that the teachers attempted creative pedagogical possibilities to overcome this by giving at least one internal assessment assignment on their life in the current situation. Yet the participants clearly expressed that remote teaching is simply not creating the condition for a conceptual understanding necessary to write an assignment independently that connects curriculum with participants' lived realities.

Not only is a classroom the site of education but the natural environment of a college campus, it is also an integral part for education and a thoughtful mind. In his essay 'My School' by Rabindranath Tagore, the great philosopher, states that the aim of education is to saturate the young mind with the idea that he is born in a human world (Tagore, 1921:111-150). Physical presence in a campus allows for this saturation of a human experience. Participants reported that lack of physical activity, previously normal in a regular college day, led to restlessness, anxiety, and depression among them. Psychological effects on the students' lives were reported due to missing physical socialization with their fellow classmates in the physicality of the college campus. This can be understood in the light of various educational theories in the Indian tradition which value physical mother earth of an institution. Tagore makes it possible for the Researchers to understand the effects of the physical learning space and the social presence on students' lives as he writes:

It must be an ashram where men have gathered for the highest end of life, in the peace of nature; where life is not merely meditative, but fully awake in its activities;where the sunrise and sunset and the silent glory of stars are not daily ignored; where nature's festivities of flowers and fruit have their joyous recognition from man; and where the young and the old, the teacher and the student, sit at the same table to partake of their daily food and the food of their eternal life (Tagore, 1933:110).

The college has a salubrious campus with a rich flora and fauna which is unusual for a metropolis. The closure in fact witnessed its flowering to an unprecedented beauty (Raina, 2020a). The research findings, that not being physically present in spacious surroundings of the college premises, impoverished the participants psychologically, can be clearly understood through Indian educational thought.

Stereotypical burdens of household oppression were reported but only among half of the participants. Of course, this can be read as the sample being from the urban metropolises of the country with more liberal familial ethos. Rather it was encouraging to note that most participants reported efficient time management which helped them cope.

A major finding of the research was that all the participants experienced a change in the teacher- student relationship. This had wide-ranging social, psychological as well as educational consequences. In the physical classroom the students and the teacher are together which supports cognitive learning directly. The very physical presence of the teachers is an enabler of concentration on teaching and learning which aligns with student's tendency to pay attention to course work. This aids curricular conceptual understanding as well as perspective building.

The humanistic psychologist Carl Rogers considered the inter-personal relationship as central to learning, arguing that self- actualization of young learners needs a stress-free facilitative teacher-student relationship (Rogers, 1961). The participants reported psychological void and a sense of learning loss in the absence of this relationship (Rogers, 1970), an explanation for which can be found in his words,

It means that she comes into a direct personal encounter with the learner, meeting her on a person-to-person basis. It means that the facilitator is being herself, not denying herself (Rogers, 1983: 154).

Where is the facilitative teacher-student relationship when the teacher meets students only on a computer screen for a limited time which is continuously stressing their body, eyes, and overall physical comfort?

A large number of participants, diverted the freeing of time from attending college physically to enrolment in various new online courses/ internships. However, these virtual engagements were simply too restrictive for actual learning or even skill development. This corroborates existing research evidence that not more than 5% students, who enrol in such type of courses, end up completing them and barely 7% return to register for such programmes for a second time (Reich and Ruiperez-Valiente, 2019).

Conclusion

The physical closure of the college was like a spanner in the wheel for each participant in some way or the other. The biggest effect of this pandemic is borne by the students as their whole academic life shifted overnight from offline to online mode. The findings indicated that a vast majority of participants sorely missed a closer student-teacher relationship, the college premises as a site of social interaction, concentration of teaching-learning in actual classrooms and were at the brink of mental ill-health. The Null Hypothesis - that the closure of offline classes because of Covid-19 did not lead to any significant consequences with respect to the social, psychological and educational aspects of college students' lives is rejected- in the light of the research findings. The overall experience due to closure of offline classes was reported by participants as that of social isolation, psychological turmoil and learning losses due to the physical closure of the college. Physical college closure and discontinuation of offline classes thus had wide-ranging adverse social, psychological, and educational consequences upon students' lives.

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Left Out for I am Slow: A Phenomenological Study on Lived Experiences of College Students

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Abstract

Academic performance in the form of grades has been the defining factor for students to be classified into groups. With the questions on the quality of teaching and learning, it is best to focus on students who felt left out of the academic circle. Thus, Phenomenological Research, with the help of a semi-structured interview, identified and explored the lived experiences of college students who felt being left out because of their deviation from typical high achievers. This study was anchored on Sternberg's Theory of Thinking Styles and Perry's Theory of Cognitive Development. From the data analysis with implementation of the Colaizzi Process, Three Major Themes emerged: (1) Admitting Limitation; (2) Understanding Exclusion; and (3) Self-Worth Valuation. The result showed that these students shared an experience of being excluded due to their academic ability. They mostly end up leaving the academic circle as a major resort in escaping the feeling of being left out. Despite such unfortunate predicament, they aspire to do good in areas where they excel and slowly gain the confidence in believing in oneself. It is recommended that the schools place equal value and attention to all types of students. Further and in-depth studies are also recommended.

Key Words: Slow Learner, Academic Circle, College Life, Turning Point, Out of Place

1. Introduction

Over the years, academic performance in the form of grades has been the defining factor for students to be classified into groups. There has been a growing interest in the topic, such that most of the researches focused on pitting the subject to the following variables: social media usage (Ainin et al., 2015; Kirschner & Karpinski, 2010; Paul et al., 2012), quality of diet (Florence et al., 2008), in-class multi-tasking (Junco, 2012; Junco & Cotten, 2012), sleep loss and learning capacity (Curcio et al., 2006), academic self-efficacy (Honick & Broadbent, 2016), music (Cabanac et al., 2013), self-discipline (Duckworth & Seligman, 2005), cognitive test anxiety (Cassady & Johnson, 2002), attention-deficit hyperactivity disorder (Daley & Birchwood, 2010), personality (Poropat, 2009), teaching methods (Ganyaupfu, 2013), and psychological correlates (Richardson et al., 2012).

The No Child Left Behind Act was implemented to make sure that students feel included, that they are valued, and they are excelling with their peers (Abedi, 2004; Klein, 2015; Menken, 2009). The sense of inclusivity resonates with that of blending in (Al-Dubai et al., 2011; Deasy et al., 2014; El-Ghoroury et al., 2012; Fares et al., 2016; Gibbons et al., 2011), fitting in (Reay et al., 2010), and learning in unison (Foureaux Koppensteiner, 2014), but certain circumstances are hard to explain in grades and numbers and need a little digging up in a more personal domain to understand the truth behind every experience (Symeonides & Childs, 2015). The closest study conducted on student's personal experience, the feeling of being left, focused on the exploration of the negative effects of low feeling of belongingness (Layous et al., 2017).

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It can be noted that to truly grapple the essence of academic performance, one must fully immerse in the experiences of the students in terms of their sense of relatedness and fitting in, and how they perceive themselves. By establishing the gaps as to the conduct of the study, there is a strong need to explore the lived experiences of students who perceived themselves as slow learners, engage them in in-depth conversation on instances of them feeling left out and how they are coping with such challenges.

2. Objectives

With its main objective of exploring the lived experiences, perceptions, and challenges of college students in the context of feeling left out because of their perceived level of intellect, this study would like to answer the following questions :

1. What are experiences of the participants ;
2. What is their perception about feeling left out of the academic circle because of their perceived level of intellect; and
3. What are their aspirations?

3. Method

3.1. Research Design

This qualitative study, anchored on Sternberg's Theory of Thinking Styles and Perry's Theory of Cognitive Development, utilized phenomenological approach that aimed to investigate the experiences of college students - how it is to be a student and perceiving themselves as slow learners at the same time. A qualitative research study aimed to examine a phenomenon that impact on the lived reality of individuals or groups in a particular cultural or social context (Mills et al., 2017; Mills & Birks, 2017; Ritchie & Ormston, 2014). A qualitative research is an inquiry process of understanding based on distinct methodological traditions of inquiry that explore a social or human problem (Creswell, 2003). The Researcher builds a complex and holistic picture, analyzes words, reports detailed views of informants, and conducts the study in a natural setting. Phenomenology aims to accurately describe the phenomenon without a pre-existing knowledge to a framework, but remaining true to the facts (Cerbone, 2010; Connelly, 2010; Dalal & Priya, 2016; Neubauer et al., 2019). More so, using a qualitative research, the Researcher would be able to connect with the participants and to see the world from their viewpoints (Corbin & Strauss, 2012). The Researcher found this method most suitable to the inquiry, in order to provide a comprehensive analysis on the lived experiences of college students.

3.2. Participants and Sampling

The participants of the study were identified using purposive sampling. Using purposive sampling, the Researcher can choose the participants who will be fit for the study (Fraenkel & Wallen, 2006). Simply put, the Researcher decides what needs to be known and sets out to find people who can and are willing to provide the information by virtue of knowledge or experience (Dolores & Tongco, 2016). Eight (8) individuals participated in the study. Participants met the description of the career changer: (1) Persons who consider themselves as slow learners; (2) Currently enrolled, (3) A college student; (4) A resident of Calbayog city; and (5) Willing to participate in the study.

3.3. Data Collection

In gathering the appropriate data for the study, semi structured interview was used. Semi-structured interview is a type of interview that has become the most familiar strategy in collecting qualitative data (Adams, 2015; Kallio et al., 2016; Wilson, 2014). A semi-structured interview is a qualitative method of inquiry that merges a predetermined set of open questions with the privilege for the Researchers to explore particular responses further, and are used to understand how interventions work and how they could be enhanced. It also allows to ask follow-up questions for clarification. The content of the interview guide was validated by two professionals who were expert in the field of Psychology. The Researcher also provided an agreement that included obtaining informed consent, ensured confidentiality, time and place commitments, permission to record, detailing the ethical principles of research. As to data storing methods, the Researcher used note taking and dialogic form interview to reach deeper responses of the respondents

3.4. Data Analysis

The following steps represent Colaizzi process for phenomenological data analysis (Morrow et al., 2015). (1) Each transcript should be read and re-read, in order to obtain a general sense about the whole content. (2) For each transcript, significant statements that pertain to the phenomenon under study should be extracted. These statements must be recorded on a separate sheet noting their pages and line numbers. (3) Meaning should be formulated from these significant statements. (4) The formulated meanings should be sorted in categories, clusters of themes, and subthemes. (5) The findings of the study should be integrated into an exhaustive description of the phenomenon under study. (6) The fundamental structure of the phenomenon should be described. (7) Finally, validation of the findings should be sought from the research participants to compare the Researcher's descriptive results with their experiences.

3.5. Research Reflexivity

In the study, the Researcher's approach is different in terms of other researchers' perspectives. As a person who knows the struggles of college students and their aspiration, the Researcher understands his stand that might lead to a different development and an equally valid understanding of the particular situation under study.

The study has a preconception with a tone of positivity of eventually creating meaning during the entire process. The position and the background of the Researcher will affect the choices made in the investigation, from an angle, with the methods that best judged the sole purpose of the study, framing, coming up with themes and the overall conclusion of it, with the intent of sharing the results with the participants of the study. Furthermore, preconception is not equated in any form of bias unless the Researcher fails to mention them (Malterud, 2012).

3.6. Ethical Consideration

The study focused on the lived experiences of college students, their self-concept, and aspirations. Therefore, the ethical considerations centered around the situations depicted solely from participants' experiences, interactions and actions observed. The issues of theoretical, theological, situational, critical and covenantal situational approach to research ethics were irrelevant to the overall study (Arifin, 2018; Roberts, 2015; Robinson, 2014). The literal transcriptions and summary were used in the narratives.

4. Results and Discussion

Significant information on the current experiences of college students were generated on the premise of feeling left out because of their perceived level of intellect. Current knowledge on higher education scenarios, potential of exploring other means of coping and aspiration for academic path were noted. The generated information can help in establishing not only springboard for subsequent research but also a platform for the college students feeling left out to be heard and show the cacophony of their experiences.

From the data analyses with implementation of the Colaizzi Process, Three Major Themes emerged: (1) Admitting Limitation; (2) Understanding Exclusion; and (3) Self-Worth Valuation.

4.1. Admitting Limitation

Most of the participants had episodes of being unwanted and left-out which further fueled how small they see themselves in terms of their academic achievement and perceived level of intellect. It is illustrated in the following participants' statements:

4.1.1. Outright Exclusion

- "I am always picked last when picking members for a debate, been happening since grade school."
- "Here I thought I was picked first because they believe in my capability, but the group leader pulled me to the corner and told me that I was picked out of pity and only followed the instruction of our teacher not because they think I am capable."
- "There were only two of us left, leaders are picking members for the quiz bee. One of the members from the other group yelled to the teacher and asked if I can be a group of my own because they see me as a burden more than a contributing member."

4.1.2. Obvious Insult

- "My teacher asked me to solve something on the board, and while I was doing that, the teacher said that 'I gave you the easiest one because I know you can't handle the difficult items', that was really devastating."
- "The group I was with, was busy preparing for a presentation, when I was about to approach them, they said that they intentionally did not call my attention for the brainstorming, because I only bring in the storm but no brains to the group."
- "We were a point away from winning when I messed up big time, they yelled and yanked me going out of the room and called me stupid in front of many people."

4.1.3. Overt Inadequacy

- "I admit that I am weak as a student and there is no need to measure my IQ since the people around me make me feel that way."
- "Ever since my mother and elementary teacher told me that I equate to nothing, I carried that ever since and believe that I am really no good."

- “I am considered as the weakest student in my class, even I agree so myself, so I don’t bother trying anything to improve my grades, I am dumb so why bother?”

4.2. Understanding Exclusion

Most of the participants admitted that despite excluded by their peers and acknowledging their own shortcomings, they still understand the reason behind such actions. They feel the full blow of their insults, but choose to respond positively to the situation. It is illustrated in the following participants’ statements:

4.2.1. Deeper Consideration

- “I understand where they are coming from, they have expectations of me that I cannot deliver and I can’t change anything about it.”
- “Although it hurts, I cannot do anything to make light of the situation, I just psyche myself to understand their reasons and hope that it will change in the future.”
- “I just cry myself out every night, my parents always tell me to be strong no matter what, not everything in life is determined by your academic performance, always be the better person.”

4.2.2. Belief Tolerance

- “I just let them be, eventually I would get used to it for it will reach its prime.”
- “That is what they want to label me as someone who is dumb, and I just tolerate that because I am not in mood to entertain their teasing, I am already bombarded with problems.”
- “Though they make me feel as a nobody, I am just taking it all in like a sponge, I don’t want any more drama plus they will just stop at some point and disregard my existence as always.”

4.3. Self-Worth Valuation

Most of the participants self-confessed that there is a silver lining to their negative experiences, that being left out in the academic setting is not all that bad, that it makes someone realize their true worth as a person, encourage them to love their self more, and make opportunities for self improvement. It is illustrated in the following participants’ statements:

- “I am over with the crying and hurting and see these negative experiences as an opportunity to improve myself and prove them wrong.”
- “Most people would see me as slow learner, which I take advantage of, because they do not expect anything good from me.”
- “I know myself more than what they say of me, and I can’t wait to rub it on their faces what I can actually do.”
- “I am unique, and I know that my time will come for me to prove something worthwhile.”
- “This experience of mine makes me want to work more and spend my time to improve myself.”
- “I will make everything in my power to succeed in life, prayers and hardwork is all I need.”
- ✱ “I know I can do more to if I put my heart and soul into it, life is what we make it.”

Instances of being unwanted and left out in the class are quite common in any academic setting. Reasons could range from various sources, experiences, and circumstances. The situations which rooted from home and school often exacerbate the problem, with students having lesser confidence and seeing themselves as slow learners. With such term being used loosely, the students tend to conform to an identity they believe to possess or to the label they are given. By presenting them with limitations they tend to convince themselves that they are really what other people perceive them to be. Self-limiting behaviors are often devastating not only to the disposition of the student but to their overall goals and aspiration in the future. By limiting their options, they feel that they are only until that level and dare not explore further on what they could be in the future.

Most of the participants admitted that despite excluded by their peers and acknowledging their own shortcomings, they still understand the reason behind such actions. They feel the full blow of their insults and choose to respond positively to the situation. Often, when bombarded with such negativity, a person tends to see it as a situation requiring utmost understanding. They understand the situation very well that disrupting the order as it was presented, can often change the course of a routine or an established environment. The need to maintain such ideal environment comes at an expense of sacrificing one's happiness and trading it with the constant mockery. They also understand since they believe that a very good reason could explain such misfortune happening to them.

As a culmination, not every bad experience equates to a bad outcome. Sometimes, a person sees it as an opportunity. Opportunity to improve what they do, enhance what they know, and upgrade what they are. Such process takes time, realization, and effort, but when one's back is pressed against the wall, the claws come out and the inner beast comes shining through. Seeing oneself as person who needs improvement is the first step in truly changing for the better. It is a play on which side of the road one follows-- Is it the one that others designed for you or a path you are willing to take risks and make sacrifices. There is a silver lining in every situation, treating scenarios as opportunities and not roadblock to what a person can become in the future.

Conclusion

The result showed that these students shared experiences of being excluded due to their academic ability. They mostly end up leaving the academic circle as a major resort in escaping the feeling of being left out. Despite such unfortunate predicament, they aspire to do good in areas where they excel and slowly gain the confidence in believing in oneself. It is recommended that the schools place equal value and attention to all types of students. Further and in-depth studies are also recommended.

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Strengthening Competence of Formal Visual Analysis through Quest-Themed Module: An Experimental Research

Samboy D. Franco and Mary Anne Bernadette M. Samson

Abstract

The goal of Formal Visual Analysis is to justify how the formal visual elements of artwork modify the state of the object and ideal object. This research was conducted to investigate the effectiveness of using the quest-theme module to enhance the Formal Visual Analysis competence of junior high school students in Art. The Quest-Themed modules consist of critical elements of mastery learning and reliable teaching practices. There had been fewer researches based on Quest-Themed Modules to enriching the competence of Formal Visual Analysis level of the high- school learners in the Philippines. Independent sample t-test was used to identify the significant difference of the correlated variables. Findings showed that the effective treatment of the Quest-Themed Modules did raise the Formal Visual Analysis competence of the respondents.

Key Words: Quest-Themed Module, Action Research, Art Appreciation, Formal Visual Analysis

Introduction

Formal visual analysis is a method of examining visual information. It is an essential scheme to retell what you see in words. As a strategy, it can be applied to any artwork, whether a photograph, sculpture, painting or cultural assets in any historical period. It is assumed that in any artwork, there are some elements and principles that will be more evident than others in existence. When performing Formal Visual Analysis, therefore, learners should pick out the elements that are most significantly portrayed in the artwork they are analyzing.

Once learners have an inclination to perform Formal Visual Analysis, they will be well positioned to put themselves into a context where they represent their artwork based on the visual elements and operating principles of the original artists. The theory of Formal Visual Analysis will aid learners to create their crafts as professional artists do.

Formal visual analysis is a peculiar sort of visual form. Dissimilar to ekphrasis, it is not meant to arouse the work in the reader's cognition. Rather, it is a cerebration of the visual structure, of how certain visual elements have been arranged and function within a composition. The accurate Formal Visual Analysis is restricted to what the observer sees. To begin Formal Visual Analysis methodologically, is to face at a piece of artwork and take note of how your eye-tracking moves around the object. Since it informs how the eye-tracking is led through a piece of work, this type of statement caters a solid groundwork for deeper criticism. It is always a helpful travail, even if it is not supposed to be a conclusion in itself.

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Literature Review

The goal of the Formal Visual Analysis is to justify how the formal visual elements of artwork modify the state of the found object and ideal object. The focus should be on analyzing the formal visual elements—not the artwork. With that said, clearer discernment of the substance of the artwork is the ultimate end of any Formal Visual Analysis.

According to Barnett (2008), although the description is an important part of formal analysis, description is not enough on its own. Artists must provide and contextualize their descriptions of the formal elements of the artwork, so an analyst understands how each element seeks to influence the artwork's overall effect on the viewer. These may include emotional responses to the artwork, but the artists need to justify the formal visual elements that evoke their emotional responses.

Formal visual analysis is the rudimentary portion of art creation. Learner in the art field may encounter a visual analysis as an assignment itself. They may even write one as part of a research paper. Their resourceful references may come from some succinct and elaborated paperwork such as art publication, academic books, and collegian investigation papers.

Visual analysis is to recognize and understand the visual choices an artist makes in creating the artwork. Sayre (2005) opined that by observing and writing about varied parts of an art object, the analyst can clearly discern the artwork as a whole. A Formal Visual Analysis answers artwork's formal visual elements—color, line, texture, and size. Humanistic discipline, discourse or explications of meaning are also to be reckoned with in Formal Visual Analysis.

To write down a visual analysis, the learner must look closely at an art object—a photograph of an art object—and transform the optical responses into words. However, a Formal Visual Analysis does not merely record the external observation on the scene. Saltzman (1998) gave the necessary part of an observation list including: (a.) to observe the artwork and write down your observations; (b.) to formulate the main claim, and (c.) to support the main claim with valid details. A formal analysis does not concentrate on the subject matter, its function, or embedded culture, but the formal elements such as color, line, size, etc. A lucid, well-inscribed Formal Visual Analysis will comprise three processes: it will repute the formal visual elements discussed; it will expound the purpose of the formal visual elements; it will examine the effects of that function of aforementioned formal visual elements.

This paper made formal analysis of paintings in class, offering tools to help learners analyze their forms rather than an account of the history of individual artists or paintings. Taking the approach of formal analysis in education, the paper examined the visual aspects of a painting. It began by looking at broad questions such as the use of color and the depiction of space. The types of questions teachers ask in formal analysis can be asked of any painting students, and some of the questions can also be a useful starting point when thinking about other types of visual artwork in photography and cinema.

The question regarding how formal analysis of artwork affects subsequent interpretations has been a hotly debated topic in art theory. It is very difficult to dissociate the way a painting depicts an ideal object from the found object itself. Indeed, Groenewald (2004) argued that in artwork, “form” cannot be divorced from “content” and the distribution of color and lines, light and shade, volumes and planes, however delightful

as visual experience, must also be understood as more than visual expression. It is however rarely easy to separate **what** a painting depicts from **how** it depicts it.

The skills students learn from Formal Visual Analysis will prove useful in application as students are encountered with other public art later in their life. If students are going to an exhibition of artwork, they will be able to read in the catalogs and side panels about the themes and subject matters, which a particular painter intends to express; about the historical circumstances in which the painter was working, about the context where the art would have been displayed but could not, and about who it was painted for. The difference is that students equipped with Formal Visual Analysis will be able to reflect upon the artwork by themselves. By bringing together all that outside information surrounding the gazed piece of artwork an artist, proper, the period of cultural history of a particular artist, and the intellectual a context of the artwork, students as viewers with the tools, elements, and properties of Formal Visual Analysis, will end up with a much fuller and richer understanding of the artwork they are watching. More importantly, these students will be able to ground their interests in a particular artist or specific group of artists subsequently.

Artwork is the result of impulsive interrelatedness between the diverse visual art elements and operating principles of original artists. By applying the elements and principles concerned, views of the artwork can develop their empathy towards the sources of the time and the place that the artist's vision comes.

The notion of Quest-theme modules (QTM) in this paper was used to describe the structure and content of the course. As Groenewald cited Nulden (Groenewald, 2004), the quest-theme module is defined as a content-based rudimentary component of learning that is broader than lessons but narrower than an instruction. Modules are useful for experimenting with minimal changes in existing courses and at the same time focus more intensively on fragmented but sequenced reaction in a probing process of the artwork. From a pedagogical perspective, quest-theme modules share many characteristics with problem-based learning. As in problem-based learning, each quest-theme module contains a number of distinct phases. In this paper, the quest-theme module was made up of cartoon and animated characters to portray and display the sequence of the lessons for the pedagogical purpose of elevating learners' competencies in interpreting artwork.

This research then conducted a comparative study, exploring current performance index of the learners with their desired and expected goals. It was found that majority of the students were having difficulty in recognizing simple elements and properties in the visual analysis of artwork. In average, only 2 out of 10 students were able to identify simple visual elements in Formal Visual Analysis. These quite simple visual elements were important in the sense that they answer the basic activities in describing qualities and characteristics of a piece of presented artwork in the Art class. They are especially important in that they are always embedded in the lesson concepts in the K-12 Enhanced Basic Education Curriculum of Art.

The purpose of the study, therefore, was to examine the effectiveness of the Quest-Themed Module in use to enhance the competencies of Formal Visual Analysis in artwork among Grade 10 students at Sta. Ana National High School, Santa Ana, Pampanga.

Objectives of the Research

The main objective of this research was to conduct a survey on the degree of effectiveness of the Quest-Themed module in use to enhance students' competence of Formal Visual Analysis in artwork. Students

under observation were from the Grade 10, National High School at Sta. Ana, Pampanga. What the research sought to address included the following: (1) participants' competence level of Formal Visual Analysis of artwork; (2) their performance index in addressing artwork; (3) the degree of correlations between mean scores of the participants competence of Formal Visual Analysis and mean scores of their performances in artwork; (4) significant difference between the pre-test results of the control and experimental group; (5) significant difference between the post-test results of the control and experimental group, and (6) significant difference between the mean scores of pre-tests and post-tests.

Methodology

The Researcher employed the experimental method, which is an organized and scientific investigation effort of seeking to influence one or more variables by controlling other alternative variables. Creswell (2002) defined experimental research as a method of investigation that involves influence and controlled testing to infer causal processes. To be more specific, it is an operating lever where a Researcher observes the changes of one variable on the one hand, while controlling/randomizing the rest of the variables on the other hand. In short, there will be a control group, and random samplings against which test will be tried once in a time and therefore measured. Or, broadly speaking, one or more variables are manipulated to ascertain their result as dependent variables. Experiments were conducted with a view to explain causation and predicting future occurrences.

This research also employed the quasi-experimental design to suit the control and experimental group in the observation. The quasi-experimental design can be used to identify an adequate group that is as similar to the experimental group as possible for later effort of comparison that can be carried out in terms of their baseline characteristics (White, & Sabarwal, 2014). The Quasi-experimental design also showed the effectiveness of Quest-Themed Module (independent variable) to the Formal Visual Analysis level of Grade 10 learners. Target participants of this study were the students officially enrolled in Sta. Ana National High School. For this paper, quasi selection of participants in this research. There were two sections in the Grade 10. One was a Control Group that consisted of 21 males and 15 females. The other was the Experimental Group that consisted of 21 males and 17 females. The two groups were chosen based on their participation rate and engagement level in Art Education classes when they were in their first grading period. Data revealed that the two groups had the lowest performance index ranging from sedentary to poor.

This research proposed to introduce a Quest-Themed Module supplement as a primary tool to enhance the competence of Formal Visual Analysis of the students in their Art Education classes. The Quest-Themed module used in this research included five lessons, each comprising two parts: a lesson and a Formal Visual Analysis goal that students seek to achieve. The five lessons of the Quest-Themed module were carefully selected, developed and evaluated to address the students with least competencies in the Art Education curriculum.

To evaluate the effectiveness of modular intervention, this research also used a quantitative method to collect data. This included two instruments: questionnaires and a set of pre-unit and post-unit survey that brought forth a summative assessment of the whole class based on a mean difference in the Formal Visual Analysis.

Comparisons arrived at from statistic test were made between students under influence from the intervention and those under control. A pre-test was administered before the allocations of the two groups of students. This was followed by simple treatment of the Quest-Themed Module, according to the operating principles of

artwork, that was applied to the sampled experimental group. After completing the treatment, a post-test was administered again to the same group of learners. The purpose of this test was to measure the achievement of the sample students as experimental group. In sum, the Researcher constructed both the pre-test and post-test through a thorough review of the techniques of test construction and with the consent of the Art teachers and experts in the overall construction of the tests. Both the level of difficulty between the pre-test and post-test were almost in parallel. Tests were subjected to validity and reliability. Raw scores obtained from questionnaires, pre-unit, and post-unit survey were presented in tabular form for interpretation. To determine the significant difference between the Formal Visual Analysis index of the control and the experimental group, means and standard deviation were computed. That said, as reflected before and after the intervention delivery, both means of variables as the survey instruments were tested by using independent z-test and tested at 0.05 level of significance. A panel of eight supervisors and master teachers to observe the discipline of art were invited to ensure the content validity. Also, a reliability test using the test-retest method was performed, in which process there were ten teachers and students who were not a part of the research were invited to complete the set of questionnaire twice that there was differently arranged questions having been asked to ensure reliability.

Results and Discussions

Mean Levels of the Formal Visual Analysis of Respondents

Respondents from the control group achieved a mean score of 10.57 and could be registered a level of Skilled (S) with a standard deviation of 3.12 while respondents from the experimental group received a mean score of 10.04 and could be registered a level of Intermediate (I) with a standard deviation of 2.63. Lastly, the grand mean score of the participants was 10.31 which could be registered a level of Intermediate (I) with a standard deviation of 2.85.

Mean Levels of the Performances of the Control and Experimental Group

Control group achieved a mean score of 79.72 and could be registered a level of Approaching Proficiency (AP) with a standard deviation of 3.89 while respondents from the experimental group received a mean score of 79.54 and could also be registered a level of Approaching Proficiency (AP) with a standard deviation of 3.89. The grand mean score of the respondents was 79.63 which could be registered a level of Approaching Proficiency (AP) with a standard deviation of 3.86.

The Correlation Between Respondents' Formal Visual Analysis Level and Performance Index

It can be noted in the Table 1 that there were significant correlations between the Formal Visual Analysis levels and the academic performances of the respondents. Data showed that there was a significant correlation between the two variables tested in 2- tailed test with 5% level of significance. The computed value was 1.98 which was greater than the critical value of 1.96. Hence, the null hypothesis was rejected. On the other hand, the computed correlation coefficient was 0.71 and denoted high correlation. This means that the scores obtained in the performances were highly correlated to the obtained scores in respondents' literacy levels.

Table 1 Correlations Between Respondents' Formal Visual Analysis Levels and Performance Index					
Variables	Indicators	Result	Result	Significance (2 Tailed)	Remarks
Formal Visual Analysis Level	Pearson's Correlation	0.71**	-	1.98	Rejected
Performance Index		-	0.71**	1.98	Significant

Difference Between the Pre-test Results of the Control and Experimental Group

Using the z-test as an indicator, the value obtained between the two variable was 0.85, which was insignificant. The data meant that there was no significant difference between the pre-test results of the control group and those of the experimental group. This insignificance showed that the two groups were both having the same level of knowledge about the visual elements of artwork.

Table 2 Difference Between the Pre-test Results of the Control and Experimental Group				
Variables	Indicators	Result	Critical Value	Remarks
Control vs. Experimental	z-test	0.85	1.96	Rejected (Not Significant)

Difference Between the Post-test Results of the Control and Experimental Group

With the use of the z-test as an indicator, the value obtained between the two variables was 9.40, which was noted as significant. This meant that there was a significant difference between the post-test results of the control group and those of the experimental group.

Table 3 Difference Between the Pre-test Results of the Control and Experimental Group				
Variables	Indicators	Result	Critical Value	Remarks
Control vs. Experimental	z-test	9.40	1.96	Rejected (Significant)

Difference Between the Mean Scores of the Pre-test and Post-test Results

Table 4 revealed the difference between the post-test results of the control and experimental groups when employing the z-test as an indicator. The value obtained between the two variables was 4.51, which was regarded as significant. This denoted that there was a significant difference between the results of the mean score of the pre-test and that of the post-test. Relative significance between the two variables could be interpreted as a result of the effective treatment of the experimental group vis-à-vis control group.

Table 4 Difference Between the Pre-test Results of the Control and Experimental Group				
Variables	Indicators	Result	Critical Value	Remarks
Control vs. Experimental	z-test	4.51	1.96	Rejected (Significant)

Conclusion

Based on the above findings from the field survey made by this Researcher, the conclusions could be drawn as follows. First, majority of the participants were considered as Intermediate (I) in doing Formal Visual Analysis of artwork. On the other hand, both the mean scores of the performance index of the control and experimental group achieved the level of Approaching Proficiency (AP). It was also found after the Formal Visual Analysis there was a significant correlation between the participants' formal visual levels and the performance index. Also, the pre-test established that both experimental and control groups were registered the level Fair (F). Despite the pre-test results that denoted as Fair, yet there was no significant difference between the two variables. On the other hand, mean score of the post-test on the control group was registered the level of Fair (F), while the computed mean score for the experimental group was also registered the level of Excellent (E).

Second, judging from the results, it seemed that there was a significant difference between pre-test and post-test of both the control and experimental group. This proved the effect of the quest-theme module on the participants' competence of Formal Visual Analysis of artwork. It also showed that the students exposed and treated by the quest-theme module in class performed better than those students in the control group.

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Grassroots in Education

Lisette L. Ong

It has been a realization of sorts where the pandemic is concerned. Many aspects have been affected and topping the list is education. Under the new normal, there have been changes so unexpected, leaving little room for adjustment but rather teaching us to be flexible to changes.

In the Philippines, the “Bayanihan heal as one” has been one motto that keeps the country going amidst the many crises it has been facing for more than a year now. Culturally speaking there have been changes and nice changes at that because we were driven to revert to those values we have been used to before the wave of technology came in. We are back to opening our hearts and extending help especially to the people who are in need. There is no demarcation line between rich and poor at present because we are all suffering, yet the process of healing has started but it is a long way to go.

Education has been greatly affected by this pandemic because for one thing there is no face- to- face learning, remote learning has been the main objective of the academic institutions but we cannot guarantee where quality education is concerned.

For those learners who are equipped with technological resources, they are finding ways and means to be able to adjust with the aid of technology but what about those learners who are not fortunate enough to have the technology needed? Those who have to do the modular learning, will they understand the lesson? Can they answer the activities and worksheets? These are the doubts lingering in every educator, every parent, and even the learner himself or herself.

Looking Back at the Past

If we remember and have scanned the pages of the history of our country, formal schooling began in the American period but even before the colonization, the mothers were the first educators of the Malay people, and this is where the alibata now known as the baybayin became the first alphabet of the Filipinos. When the Spaniards came, they set prejudices against the natives thus, calling them “Indios” and depriving them of learning the Spanish language as immortalized in Rizal’s novel, “El Filibusterismo”, wherein the character of Placido Penitente was symbolically displayed as the ignorant Filipino and who had glamourized Rizal as the Renaissance Man because of his education abroad.

When the Americans came, they had military personnel as teachers and had enforced the 3Rs (reading, writing, and arithmetic) which became the foundation of education. Literacy had been promoted through reading and writing, thus still adopted, until at present through the Deped Program, “No Child Left Behind”-- which means every child needs to enroll in school and learn to read and write. Thus, literary rate became one of the key performance indicators of every school and helping to promote the ECARP program which stands for “Every Child A Reader Program”.

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The Cycle of Education

Just like common patterns in History, Education also undergoes a cycle which at first glance seems infinite and endless but still when analyzing deeply, we can see that it keeps on repeating in another form or another manner but certainly it undergoes a revolution of change. One thing that matters here is the fundamental need to know and learn the basics and that of which is reading and writing.

Education has been changing ever since Literacy or being literate is needed for survival. People learn to read and write not just because of having a high-powered career but more for survival. I remember one Filipino movie which starred Lorna Tolentino, who was illiterate and had to go to kindergarten together with her youngest daughter to be able to know how to read and write. The movie had been a perfect example of not needing to go to the best schools but just to learn the fundamentals which are needed in everyday life. The moment you wake up in the morning and have to do your hygiene rituals, learning to read comes in handy. From the brand of toothpaste used to instructions in minor house repairs, some words need to be read out and understood. The very basic moment when you have to spell out your name and write your name on any form, can either make you or destroy you in the process. The degrees you earned in college or post-graduate studies are just garnishing to your educational life-- what matters most is the ability to read and write from your name to the most basic words. Recognizing and understanding the alphabet which is composed of twenty -six letters and forming words out of the letters, understanding how these words are formed and how to use them, have been a part of every individual's life. The key here is survival, out of necessity and urgency rather than a matter of luxury.

During the Martial Law years, education had suffered. Those students belonging to the elite group were recruited to become subversives because of their intelligence, they were brainwashed by Marxist concepts on how to convert the country to a classless one. It was no longer a matter of survival but rather, a high level of intelligence became an asset for intellectual revolution gearing towards the left in the political spectrum. Several intelligent people had suffered death due to political detention and torture such as Lean Alejandro, who was a University of the Philippines scholar then. Education for him was more on what was being learned in the four corners of a classroom that on doing what is right and beneficial to the society, but Marxist idealism had been ingrained deeply and the antagonism towards the government was so transparent that it had earned the ire of the people in power. He was detained and killed just because of his idealism which perhaps it is not a utopian dream after all.

After the uplift of Martial Law, there were changes in the educational system but still, the fundamental goal was literacy. There was the problem of dropouts and out of school youth which prompted the government to promote technical and vocational courses to resolve the problems of the loss of interest of students in attending formal schools, which was not because of Marxist idealism and subversion but because of the difficulty in adapting to the changes taking place in the educational system. There were higher expectations and standards which discouraged the students from studying but rather leading them to a laid-back lifestyle. There were also the political unrest and instability being experienced during the transition from Marcos towards Corazon Aquino which became a problem in the status quo and greatly affected the education of the youth.,

When Corazon Aquino was already in power through the 1987 Constitution, Article- XIV stating that education is a right and not a privilege, had now people realizing the value of education, thus encouraging the youth to go back to school and start learning once again. There were alternatives to other youngsters such as technical or vocational courses, home-schooling and the like. What counts more is the continuing promotion of literacy

to help in the progress of the Philippine society. Then came the Republic Act No. 9165 - known as the K-12 program, wherein there is an additional two years of the high school known as the Senior High School program to help the Filipinos adapt and compete in the global market and become productive citizens in the future. It has been enacted into law because from of an international survey, it was found out that among the Southeast Asian countries, only two remaining countries namely the Philippines and Republic of Lao had lacked the additional two years in secondary or high school program which can be a detriment to global opportunities for the students. The additional two years serve as a preparation for tertiary education of the students thus easing the burden of the parents in terms of matriculation fees through voucher programs for both public and private schools.

Through the K12 curriculum, each student has the right to choose which strand is in line with his/her interest. There is Accountancy and Business Management (ABM), for those who want to be future CEOs and CFOs or simply entrepreneurs. Science, Technology, Engineering and Mathematics (STEM) for those who want to be scientists, mathematicians, engineers, or those in the medical field. Humanities and Social Sciences (HUSS), for those who want to be researchers, educators, psychologists and the like. General Academic Strand (GAS) for those who are still in the midst of deciding what career track to pursue. Arts and Design for those creative minds who want to pursue careers in graphics and animation. Sports Studies for those who want to have careers in the field of sports and there are also non-academic strands such as Technology and Livelihood (TVL) which has sub-specializations like hairdressing, food and beverage service, agriculture, computer technology and others which can be promoted to a ladderized program depending on the school chosen.

The idea of having this K12 program for the students is one way to be globally competitive in the future producing the best of the best where the skills are concerned, turning them into the 21st -century learners. As the year 2000, dubbed as the new millennium carrying over the 21st -century skills a student must possess, has made technology a necessity. A student must be technologically savvy to blend well with the expectations of the 21st century, where information, media, and technology literacy has been part of the skills needed to attain the goal of being a 21st- century learner. Information Technology had been included in the curriculum from the basics of computer learning to the different applications. Students had a grand time registering in different social media accounts. Research became fun and challenging because of the different search engines, there are the applications for writing, graphics, and others which provided comfort and easy access for every student. For every need, there is a technological application appropriate and earning the moniker of being digital natives even up to socialization and interaction processes, everything was done through digital or virtual means. Gone were the days of writing a short letter to a crush or someone whom you admired for quite some time, indulging in long conversations using a telephone which is a sign of gratitude to Alexander Graham Bell, but now every android or smartphone became a common commodity in markets internationally so that a person cannot be ignorant in using an analog telephone. Even the lingo used in texting as opposed to the spelling of English words, using short-cut methods to save space. Nobody uses a typewriter anymore in doing forms or reports, there is a computer that makes encoding easier and has all the requirements. Abacus and calculators are set aside because, in every smartphone, there is already a calculator included.

There are advantages and disadvantages of technology in education but still, it is a far cry from what had happened the past year when COVID19 struck. People were caught unprepared and too many daunting questions poured in but without exact answers. People were forced to stay at home because of safety and health protocols. Technology came in handy because it is something to do to ease boredom through games, social media, and other applications.

But still, even with technology at hand, there have been reports of mental issues such as depression, bipolar stress disorder, and others. Some even committed suicide because of the changes that took place and one field which has been greatly affected by this is the educational system.

Education Amidst the Pandemic

The transition has been so fast that a lot of people were caught unprepared, frazzled by the demands and expectations. The educational system has been compared to a roller coaster ride because the primary focus is the welfare of the students. After many years of having face to face learning, where teachers occupy the front part of the room, that there is an interaction between teacher and her students or students with their classmates, now everything has to be done through virtual learning or, in a nutshell, a part of remote or distance learning. There have been many learning management platforms being promoted or advocated such as google classroom, Schoology, zoom, and others but still the word here is ONLINE which means interaction, teaching and discussion are done virtually where you can see your classmates but you can't touch them or hug them or play with them. Everything has to be done with internet connectivity, even presentations and lessons.

It is fortunate for those families with internet connectivity, they can enroll in online courses or engage in virtual or digital learning but what about those families which cannot afford digital resources. The Department of Education provided an answer for that through the modular in print modality wherein parents go to schools to retrieve printed modules for their children to answer weekly. The basis for the grades will be on the scores of the corrected modules and the summative examinations given before the end of each grading period. Additional modalities which can serve as supplementary learning are TV-Based Instruction (TVBI) and Radio Based Instruction (RBI). There are also asynchronous materials given to students wherein they can send their answers to assignments and activities through social media or emails.

Even with these different modalities, a blending or a mixture of two or more modalities cannot equate with the active learning done face-face not only because of the strategies implemented by the teacher but by the interaction of students which promotes a more holistic type of learning. With the question of the duration of this distance learning now comes the doubt on how quality education is being promoted.

Two Sides to the Coin

With distance learning being implemented, the parents have bigger roles in motivating their children to this type of learning. It does not begin and end with a parent operating the laptop or desktop for his child to start learning digitally neither does it start and end with a parent going to school to retrieve and return the answered modules but what happens inside the house on how the parent guides and helps the child to adjust to this mode of learning is what counts.

Remembering the pre-colonial times where there were no printed materials to teach the children, it looked to the mother as the first teacher, as what Rizal had attested that his mother Teodora Alonzo was his teacher, the person who taught him how to read and write and even share the values of hard work, being diligent and industrious as what the story behind the moth and the flame emphasized. There were no printed materials to depend on but the simple teachings of mothers to children which were handed from one generation to another. It does not necessarily be a bulk of printed materials and digital resources to measure an educated person, there is also the need to imbibe good and moral values to make him an educated one.

The ability to read, write and count was needed and fundamental, even a farmer's son can learn these abilities without formal schooling just like what our ancestors did, they had makeshift classes under the mango tree as symbolically represented by Rizal during his Dapitan exile. The use of his senses became the first encouragement needed to learn. Common sense and critical thinking are not gotten from any books printed or otherwise, they are inherent in a person. How he thinks, forms words, concepts or perceptions are all parts of learning.

This is what the pandemic has brought us to, the going back to the grassroots, or to the basics of what is fundamental and what is important. The different activities students indulge in within the confines of their homes can be considered learning, such as growing plants or doing backyard gardening, recycling waste materials, doing artwork and other creative projects, cooking, and baking to their hearts' desire, are all part of learning.

Learning does not confine to technological use of either reading printed or digital materials. It can be in different forms with various structures or patterns. In these trying times, there is no room for limitations on what or how a person must learn, what counts more is the continuing desire to discover and learn new things which can be helpful in the future and with the collaborative skills being part of the 21st -century skills being ingrained in a student, come closer and binding ties with the family which indeed have become the biggest advantage of this pandemic.

Conclusion

Back to the basics has been one lesson in this time, there is no room for complaints or whining, this is a period wherein we need to assess our strengths and improve on our weaknesses. The pandemic has been a big challenge for every individual, but it does not mean that we have to be pessimistic about it, but should rather look on the bright side, that despite the tribulations, we are all functioning the best way we can, we have opened our hearts and minds to our fellowmen. We have been flexible on how to adapt to the changes going around us.

We have gone back to simple lifestyles appreciating what we have, and not necessarily on what we want but more on what we need. We have found allies in God, the Department of Education, our family, and our friends (offline or online). God has been telling us for some time to be contented with our lot but still, we find happiness in material things rather than with the love surrounding us.

As of the present time, the lesson we continue to live on is how to survive beautifully in these trying times and we all know the answer to that, but we remain hardened by it and refuse to listen but then just like any challenges that come our way, this too will pass and, hopefully, the realization will come sooner.

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The Role of Multimedia in ESL Classroom: An Overview from Teaching Perspective

Md. Mahroof Hossain

Abstract

In the era of 21st Century, to make teaching more effective and interesting for learners, technology plays a vital role. Teaching refers to an act of stimulus for the psychological and intellectual growth of a person. Learning technology refers to the technological tools which assist learning, teaching and assessment. So, we can say that today's pedagogy is combination of teaching and technology which helps the learning process for both teachers and learners. In this learning process the multimedia is a better tool to explore the new teaching method. Multimedia in ESL classroom provides an opportunity for both teachers and students to make learning and teaching more interesting with illustrated features, so that learners become motivated to learn. This article aims to analyze the role of multimedia in ESL (English as Second Language) classroom with its useful strategies, the role of teachers dealing with multimedia assisted teaching and implementation of multimedia in ESL classroom in the context of teaching perspective.

Key Words: Multimedia, Teaching, English as Second Language (ESL), ESL Classroom, Motivation, Pedagogy

1. Introduction

English is the worldwide language, as it is the most widely spoken language in the world. It has transfused across the world as it is spoken as the second language in many countries. English language always has an advantaged position in Bangladesh. There is always a panic among the students to learn English and for this reason the students consistently lose interest in learning the language. To overcome these obstacles, teachers must implement motivating and artistic methods to make learners learn English in a smooth way. They should generate interest among students. As the students show much attention in using new technology, the teachers can make use of the new technologies to improve the English language teaching. This can result in an operative and meaningful way to learn language in the ESL classroom. Generating a good environment for learning and teaching is one of the most motivating features of learning process and it is also one of the toughest tasks to master. For those new to the teaching profession, failure to set the precise manner will greatly impede their effectiveness as a teacher. Approaches that worked effectively for many years suddenly became futile in the aspect of new challenges today's students are facing in the classroom. Becoming a teacher of ESL implies the process of becoming a member of that community of preparation.

'The Information and Communication Technology revolution is fast changing the world and creating a generation that is media hungry and technologically savvy. The new generation is using digital media for learning and communicating.' (Tapscott, 2008).

'The advent of multimedia and multimedia technologies has changed the way educators teach and students learn. With multimedia, the communication of the information can be done in a more effective manner, and

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it can be an effective instructional medium for delivering information. Multimedia application design offers new insights into the learning process of the designer and forces him or her to represent information and knowledge in a new and innovative way.' (Neo and Neo, 2000)

'Multimedia 'provides' a means to supplement a presenter's efforts to garner attention, increase retention, improve comprehension and to bring an audience into agreement', which consequently results in people remembering 20% of what they see, 40% of what they see and hear, but about 75% of what they see and hear and do simultaneously.' (Linstrom, 2004)

Multimedia in education has been tremendously productive in teaching individuals a varied range of subjects. Multimedia is altering the way we connect with each other. The methods by which we send and receive messages is more effectively done and better understood. While a lecture can be extremely informative, a lecture that incorporates pictures or video, images etc. can assist an individual's learning and intercept information much more successfully.

2. Multimedia in the ESL Classroom Teaching

The world around us has become a technological world. In the case of educational world, it is no exception. Because of this technological development, students and teachers are creating stimulating and groundbreaking ways to make learning more vibrant, longer lasting and more applicable to the world outside the classroom. Multimedia technology plays a constructive role in improving activities and initiatives of students and teaching effectively in the classrooms.

ESL classroom, in a country can be defined where English is not the first language. Students share the same language and culture. The teacher may be the only native English speaker they have exposure to. With the pace of time English language models change swiftly, there has been a noteworthy growth of literature regarding the use of technology in English language teaching. These literatures plainly accept technology as the most vital part in teaching. Such an inclination has emphasized on an essential role of technology that has been central for the teachers. As the popularity of English is increasing day by day and worldwide, the teachers of English feel the need of shift in their language teaching methods. There are teachers who use the 'leading edge' of technological and scientific development' (Young and Bush 2). But majority of teachers still teach in the traditional manner.

To keep pace with English language teaching with more confidence, they have to stride into the arena of multimedia technology. Here multimedia technology refers to computer- based collaborative applications that use both the hardware and software, letting people share their ideas and information. It is an arrangement of text, graphics, animation, video, and sound. With the fast growth of science and technology, the usage of multimedia technology in language teaching has generated a favorable context for reforming and exploring English Language teaching models in the new era. This implication features the use of audio, visual and animation effects in the English language teaching classrooms. Technological modernizations should go hand in hand with the progress of English and change the way in which we make interaction.

As we are living in the 'age of technology', many teachers are still uncomfortable with the idea of incorporating it into classrooms. There are many reasons behind this, including lack of preparation and tools,

opposing perceptions about technology in general and a lack of knowledge with regard to the effectiveness of classroom technologies.

Graddol (1999) states that:

‘Technology lies at the heart of the globalization process affecting education work and culture. The use of English language has increased rapidly after 1960. At present the role and status of English is that it is the language of social context, political and socio-cultural context, business, education, industries media, library communication across borders and key subject in curriculum and language of imparting education.’

Despite the technological advancement in teaching profession, nothing can fully replace an experienced teacher, technology only acts as a helping hand for teachers to run smoothly and deliver lecture in the classroom. The teaching principle should acknowledge new technologies and functions where they make available something conclusively useful and never allow the machines to take over the role of the teacher.

3. Elements of the Ideal Multimedia Enabled Classroom

When we take class in Multimedia Enabled Classroom then we have to consider that multimedia has two key uses:

- i. Spontaneous demonstration of information through text, graphics, images, audio, and video.
- ii. Use of different applications to access the needed information.

Multimedia is composed of various components: text, graphics, animation, sound, and video. These components can contribute differentially to learning of material.

Text: It is major element in all multimedia applications. It conveys most information (Vanghan, 2004). We can use ordinary text or different special effects for emphasis or explaining in English teaching. To catch the reader’s attention, teachers can use various font size, color, and style to convey information, stress a certain word or phrase.

Graphics: It refers to image, and pictures, such as chart, diagram, and photograph, which contains no movement. According to Andrew Wright’s Book --‘Picture for language learning’, graphics can stimulate interesting activities and enhance motivation, improve understanding ability of language, and offer especial reference object and topic (Wright, 2003). Graphics play a vital role in language teaching process.

Animation: Animation is the rapid display of a system of images of 2D or 3D artwork, to create an illusion of movement. It displays basic graph with simple subject matter to a detailed image with complex movements. Assisted by this use of animation teachers can highlight key knowledge points and heighten students’ motivation (Vanghan, 2004)

Sound: It is speech, music, or any other sound that is stored and produced by computers. It has more benefits than tape recorder. In language teaching, sound plays a vital role as it is related to pronunciation. In multimedia class, teacher can use more vivid and fruitful sounds to support students’ English learning.

Video: It is the noticeable part of a television transmission and broadcasts visual images of stationary or moving objects. Compared with animation, video can offer more vivid information, but it will consume more storage space than animation. (Vanghan, 2004)

In traditional classroom, most English teachers are used to using some orthodox equipment, such as blackboard, chalk, tape recorders and so on. However, we can find more modern equipment in a multimedia classroom.

To ensure that learners can obtain information in a spontaneous way in the environment of multimedia English language teaching classroom, an illustration of a distinctive one-multimedia- PC classroom, setting is important and essential.

- i.** MPC- Multimedia Personal Computer.
- ii.** VCD/DVD player- Video Compound Disk/ Digital Video Disk.
- iii.** Amplifier and Hi-fi acoustic system.
- iv.** Screen/Curtain
- v.** Projecting Apparatus.
- vi.** The access to Internet
- vii.** Cassette Tapes recorded
- viii.** Camera Recorder
- ix.** Overhead/ Slide Projector

4. The Role of Teachers in Multimedia Classroom

It has been observed by the Educationists, Researchers and Administrators that the use of the multimedia in educational institutions brings a change in learning and teaching patterns. For the changing pattern of teaching and learning scenario teachers have some important roles in the usage of multimedia. They are as follows:

- i.** Facilitator and Guide: To act as a facilitator, teachers must know more than they would as direct givers of information. As a facilitator he or she cannot depend on just one or two texts, he or she should have a variety of knowledge of using available materials for improving students' language skills. It will not be wise to consider language textbook as the only source of information. Multimedia offers sound and visuals, electronic dictionaries and encyclopedias which are available for instant reference. Not only that, online- newspapers provide up to date information on current affairs in the countries of the target language. Teachers should have the knowledge how to make proper use of all the materials effectively. As facilitators, teachers have to be flexible, responding to the needs that students have.
- ii.** Integrator: It is not enough for teachers to have the knowledge of the functions of different media available. They should also have the knowledge of when best to implement them. Teachers in the learning process of learners, they need to guide learners in the use of word-processing, graphics, and presentation programs. Integration of audio-visual elements will bring home to learners the fact that the foreign language environment of the target language is as vibrant and multifaceted as the society in which they live.
- iii.** Researcher: It is a prerequisite criterion for teachers to have knowledge of how and where they can access information for their own and for the learners' use. Knowledge and competent use of search engines and reliable information sources are important. To have knowledge with the use of multimedia

tools for language presentation will enable teachers to increase their own linguistic and professional competence and increase their confidence in the use of the language.

- iv. Designer: To create a successful learning environment, teachers need to learn how to combine learning activities and materials to guide their learners for successful execution. It is the teacher's role to research and evaluate source materials, setting the overall aims and objectives and breaking down tasks into meaningful and manageable sequences.
- v. Collaborator: Collaboration with colleagues will lighten the burden and make the efforts more fruitful and rewarding. Cooperation within a specific teaching institution will prove more efficient, but the new technology will provide possibilities for exchange, between institution and beyond borders. Teachers, having less knowledge about language use and language teaching, could well profit from such internet exchanges.

5. Strategies of Using Multimedia

I. Combination of modern teaching methods with traditional teaching methods.

There is no question about that modern teaching methods have many advantages over traditional ones. A multimedia program can provide immediate feedback on the correctness of the learners' response compared to traditional textbook or workbook. Because of the complex nature of using multimedia, still traditional teaching methods are being used because of their own strong points. If there is a combination of the traditional teaching strong points with modern teaching methods, then it will not only raise classroom teaching quality and efficiency, but also improve teaching and learning environment between teachers and students.

II. Viewing multimedia as the assistance to teaching

Multimedia features including sound, animation, videos, and records allow computers as model skills to help students and teachers assess them. But using multimedia in teaching means it just assists the teaching and learning process but cannot take place all the other teaching methods. It will not be right for the teachers not taking notice of textbooks when they are designing lecture plan. It is clear, that multimedia can only help English teaching, teachers should get a clear idea of how and when to make good use of them. The use of the multimedia application technology aims to enrich teaching, but teaching is not intended for multimedia. In today's technological advancement era, there is no doubt that teaching needs multimedia, but using multimedia does not mean enhancing teaching efficiency. Therefore, multimedia can only be used as a supplement to classroom English teaching.

III. Building the ideal relationship between teachers and students

The use of multimedia technology can make teaching efficient and do part of work instead of teachers. But it is totally wrong to hold the view that machine can take the place of human beings. Instead, it becomes more challenging for the teachers now that the expectations are more complex. In other words, in the information age, the role of teachers has also changed, moving from a traditional teaching role to being 'facilitators' when learners can take advantage of the true potential of multimedia as learning tools. At any time, teachers' explanation plays an extreme part, which is a language part and cannot be substituted by any teaching methods. In the past, students were thought of to be passive knowledge receivers. However, the role of students with

learning has changed in the information age. There is a movement towards learner-centered approaches. How actively students participate in the learning situation is an important parameter for the learning environment.

IV. Strengthening teacher training

Multimedia assisted English teaching requires proper training and experience. It is a challenge for teachers using multimedia because of heavy preparation work and increased workload. In the light of this fact, the teachers should be trained with the use of modern equipment. They should be familiar with the operation. They should know well about modern educational theories and techniques.

6. Advantages of Using Multimedia in Teaching

The continuous development of technology and new methods of teaching is the main factor for bringing changes in teaching and learning process. Emergence of the internet has challenged the teaching of English, as a result the modern teaching and learning has introduced many/ various and new ways of teaching. The role of the teachers has also changed radically as teachers have to keep in mind the students' interest in English learning and increase the efficiency of teaching during class. Among the use of different types of technology in teaching, multimedia has been proven to be a golden mean in coping with these problems. In the multimedia teaching, with eyes looking, ears listening, mouth speaking, hand writing, brains keeping active, students will greatly improve their passion for learning, leading to higher class efficiency.

The implementation of multimedia will allow teachers to take full advantage of technology to teach English as a Second Language to non-native speaking students.

i. Motivates students to learn English

The traditional teaching methods are not interesting and do not motivate the students to learn English in the English language classroom. The use of multimedia with the help of audio, visual and animation effects, motivates the students to learn English quickly and effectively.

ii. Develops students' communicative skills

Learning English language effectively is very difficult through the traditional teaching because it hampers the students' capacity to understand the structure, meaning and function of the language. But now multimedia technology has been a great help to integrate teaching and learning and provides the students greater incentives, carry forward students' 'future competitiveness at the workplace' (Healey et. al. 11)

For Suleyman Nihat Sad, the utilization of multimedia technology, 'breaks the monotony of traditional class teaching and is enjoyable and simulating.' (35)

iii. Widens students' knowledge about the culture of language

To have a broad knowledge about the culture of the language in ESL classroom, is another advantage of multimedia in the classroom. Implementation of the multimedia in teaching provides students more opportunities than in the case of traditional teaching where sources of receiving knowledge is limited, textbook cannot compete with real –life language materials in ESL classroom which will attract students' attention. 'Multimedia provides abundant information, students gain the knowledge unconsciously about linguistic factors, such as the customs and cultural background of the target language. (Pun, 2013: 31)

iv. Creates a harmonious environment for learning the Four Skills of English Language

In the English teaching process, there are four areas which students master, namely: Listening, Speaking, Reading, and Writing. Teaching with multimedia creates harmonious environment among these four skills. Moreover, it presents good learning scenario, maximizes practice in four basic skills and motivates students to take part in class activities.

v. Improves teaching efficiency

Using multimedia technology in the language classrooms improves teaching contents and makes the best of class time. It breaks the teacher- centered traditional teaching method and fundamentally improves the teachers' teaching efficiency and becomes 'central to language practice' (Motteram)

vi. Provides students opportunities to gain more information

The use of multimedia widens the path to gain knowledge by offering them abundant information, more than what is found in the textbook/s.

vii. Promotes interaction between teachers and students

The use of multimedia helps both the students and teachers to make a lively and spontaneous interaction to make the learning process easier and creates problem solving atmosphere.

7. Disadvantages/Limitations of Using Multimedia in Teaching

The introduction of multimedia in the teaching area breaks the original conventional model associated with 'blackboard and chalk' and provides opportunities to create new modernized teaching methods to overcome the drawbacks of traditional teaching. It changes the dry learning content into vivid, interesting, visual, audible, and dynamic content.

In spite of that, using multimedia technology in ESL classroom has many problems too.

i. Emphasis on the supplementary of effective teaching

Multimedia technology, used in ESL classroom as a supplementary tool for English language teaching, is not an end in itself, as the blackboard is 'supplemented by the overhead projector, another excellent medium for the teacher dominated classroom, as well as by early computer software programs. (Warschauer 2). As the modern teaching emphasizes that teachers play the role of facilitator to the students, but if the teachers are more dependent on multimedia devices during their teaching, they may turn into slaves to multimedia technology and may not be able to perform their roles properly assigned to them. On the other hand, many teachers are active in using multimedia technology, but they are not proficient enough to handle it properly. The teachers stand by the computers all the time and students are just concentrating on the screen, the teachers cannot/do not have the direct eye contact with the students. The development of multimedia technology in the language classroom is considered effective but many benefits of the traditional teaching model have been forgotten. Therefore, the teachers should understand that multimedia should be used as a supplementary tool rather than a main tool of teaching in ESL classroom.

ii. Lack of communication between teachers and students

One of the basic things in ESL classroom is that there should be a lot of communicative activities in the language classrooms. The teachers should teach the students on how to pronounce certain

words, to comprehend the sentences, to improve thought patterns and to express what they have learned. The use of audio, visual and textual effect in the multimedia classrooms enhance the interest of the students, but the students will have a very limited time for speaking/oral communication. The video and audio of multimedia technology affects the students' initiative to think and speak. The ESL classrooms turn into a show case and the students are considered only as viewers rather than the active participants in the classrooms.

iii. Lack of real-time teaching

In ESL classroom, to play an active role, both the teachers and students need a lot of discussion which is formed through questions and answers. The teacher asks real-time questions and guides the students to think, and to give the answers. For example, "students need to be given maximum opportunity for authentic social interaction." (Warschauer 3).

However, the teachers, with the help of multimedia technology, prepare the pre-arranged courseware for the language teaching that lacks real-time effect in the classrooms and the students become unable to give feedback to their teachers. The students should be given scope for thinking, analyzing, and exploring their own world.

iv. Abstract thinking may be replaced by imaginable thinking

With the use of multimedia technology, the students easily understand the content but their thinking capacity in some cases gets restricted, thereby gradually their logical thinking fades away. In the students' learning process, the knowledge of perceptual recognition to rational apprehension is very important.

v. Expensive way of conducting language classes

Using Multimedia Technology in English language teaching is an expensive way of conducting language classes, which may not be fulfilled (Panthee 39). Keeping this fact in mind, the administrators and policy makers should not only help language teachers realize the potential benefits of technology and prompt them to learn to use technology in their teaching, but they should understand 'the significant role of technology so they foster the learning process by providing the necessary structure, support and infrastructure.' (Healey et.al). The language learning programs start with expenses that are related to implementing new technologies in education.

vi. Lack of special skill

There are many multimedia teachers who just have half-baked knowledge. It is a challenge for teachers to use multimedia equipment sometimes. The work-load of the teachers increases because of the use of virtual technology. As in multimedia technology computer operation experience is needed but owing to traditional educational system, many teachers are not good at computers. Because of lack of proficient operation of multimedia, some teachers waste certain time in operating the computers. The unskilled operation on computer would affect the instruction flow which in turn would demotivate students, if it happens frequently in the class.

8. Conclusion

It is urgent that education needs to be modernized in rapidly modernizing society and multimedia is an important aspect in modern education. The changing role of education is currently being reinforced with

the integration of multimedia technology and this has led a new paradigm in education and the evolution of new concepts in content development, and a number of innovative methods by which information can be communicated to the learner. The main purpose of using multimedia technology in language teaching is to determine students' motivation and learning interest in the English language. To achieve this goal, the language teachers should create a favorable environment for English language teaching, which should be based on the availability of information and teaching materials. The language teachers should maintain the students' communicative competence through multimedia technology. The utilization of multimedia technology can fully improve the students' thinking and practical language skills. In sum, regardless of the difficulties lying ahead, we must admit that multimedia does make a revolutionary impact on language teaching.

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INNOVATIVE SCHOOL EXPERIMENTS

Experiential Learning

Priyanka Goel

Abstract

This study focuses on the need of “Experiential learning” in school learning process and its long- term benefits. Experiential Learning enhances the practical application of the knowledge and skill to develop competence. It can be effectively used in school learning, higher education, and other areas of educational learning. It shifts the child from rote learning to learning by doing and through illustrative experiences. This is very important in view of the demands of the present situation and the future in the wake of changes due to technological and research revolution in the field of robotics, artificial intelligence, virtual reality etc. In order to live up to these demands and changes, the Union Cabinet of Indian Government has approved the New Education Policy (NEP) on 29th July 2020. NEP focuses on Experiential Learning methods which will enhance the learning by doing, abolish rote learning methods and minimize the fear of examinations from the minds of learners.

Kolb’s experiential learning cycle, though explains the different stages of learning in students, but it is silent on how to provide concrete experiential learning based on the type of content especially in school curriculum. The New Experiential Learning Model, that is “Content Based Experiential Learning Model” (CBELM) well explains how to give content-based experiences to learners at the school level and how to teach various projectable and non-projectable topics. Due to its futuristic approach and providing various experiences i.e., concrete and illustrative based on the content of the different subjects, CBELM is strongly recommended in the school learning process.

Key Words: Traditional Classroom Teaching, Experiential Learning, New Education Policy (NEP), Kolb’s Experiential Learning, Content Based Experiential Learning Model, Concrete, Illustrative Experience.

Introduction

Experiential learning can be explained as a process of learning through experiences or learning by doing. It discourages rote learning and enables students to enhance their skills and competence. It involves accepting challenges, then reflecting on experiences and applying those experiences for growth and learning. As the saying goes, learners retain 75% of what they do, compared to 5% of what they hear or 10% of what they read. It has utmost importance in the present demand of the technological revolution in the field of robotics, artificial intelligence, virtual reality etc., and also research and development in these areas.

Need of Experiential Learning in Traditional Classroom

In India and many other countries, most of the educational institutes follow traditional classroom teaching. Transformation of knowledge stops in traditional classroom teaching once the teacher stops teaching. So we can say that traditional classroom teaching is more teacher centered. This encourages more rote learning and cramming of subject rather than developing learners’ senses towards skills and real experiences.

By incorporating experiential learning into school curriculum learning, we can make students reflect better and to connect effectively with the content learned in the classroom to real-world situations.

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In the developing and under- developed countries, very less number of students opt for research work as compared to the universities of advanced countries. So, to increase opportunities of research and development for them, active learning should be involved in classroom teaching where students will take central role in their own learning. They can become more creative and can be inventors and discoverers.

As students engage in hands-on tasks, they will find some approaches work better than others. They discard the methods that don not work, but the act of trying something and then abandoning it – ordinarily considered a “mistake” – becomes a valuable part of the learning process. Students will learn not to fear mistakes, but to value them. Playing an active role in the learning process can lead to students experiencing greater gratification in learning.

A Brief History

The proof of experiential learning can be traced from ancient times. “Aristotle”, the Greek philosopher wrote in his book that “we learn things by doing them”. This clearly shows that the concept of experiential learning was there in ancient times. “Gurukuls” existed in ancient India and teaching through “experiential learning” was prevalent there. Students in Gurukuls used to learn by getting direct and indirect experiences on a daily basis. In mythology also there are many examples of experiential learning and one such example is the story of “*Eklavya*” when he learnt archery by watching the actions of Guru Dronacharya - a clear example of illustrative experience.

Clinical psychologist, Jean Piaget, rightly quoted that “Goal of schools should be to create persons who can do new things, can invent, discover and create new things rather than just doing things what generations have done in the past.”

Strengths of Experiential Learning

Experiential learning has many significant benefits:

- It shows the direction to the learners. Learners learn by watching the actions being performed before them and then reflecting upon the experience.
- It provides experiences beyond the classroom. The learners can perform or repeat the learnt content away from the classroom also.
- It focuses on the learning process for the individual. To know about animals, for example, it is better to visit zoos rather than reading about them or just seeing the pictures.
- This helps in making discoveries and getting knowledge first-hand rather than just hearing/ following others’ experiences.
- As learning through experiences is self-learnt, it is lasting in nature and can be applied for advance-level learning.

New Education Policy (NEP) And Experiential Learning

The Union Cabinet of Indian Government approved the New Education Policy-2020 (NEP) on 29th July 2020. According to this policy the curriculum of the school in our country will be changed from 10+2 to

5+3+3+4. The Indian government approved the New Education Policy in 2021. In the new education policy, the format of 10 + 2 has been completely abolished. Till now the school curriculum in our country runs according to 10 + 2 but now it will be according to 5+ 3+ 3+ 4. This means that one part of pre-primary classes, then second phase of primary classes, followed by 3 years of middle classes and the last from the 9th to the 12th. The policy recommends that experiential learning should be provided at each stage of school education. Till now sporadic attempts could be seen in some selected schools, but elsewhere the same old techniques are still in vogue. These sporadic attempts are made by some teachers by virtue of their own experiences or on the basis of some knowledge gathered from the literature of some western educationists.

Kolb's Experiential Learning Theory

“Learning is the process whereby knowledge is created through the transformation of experience”

Kolb's Experiential Learning Theory (ELT) is a learning theory developed by David A. Kolb, who published his model in 1984.

The theory presents a way of structuring a session or a whole course using a learning cycle. The different stages of the cycle are associated with distinct learning styles.

Kolb's Experiential Learning Model

Kolb's Experiential Learning Theory works on a four-stage cycle of learning.

Kolb's Learning Cycle (Figure 1) is based on the Jean Piaget's focus on the fact that learners create knowledge through interactions with the environment.

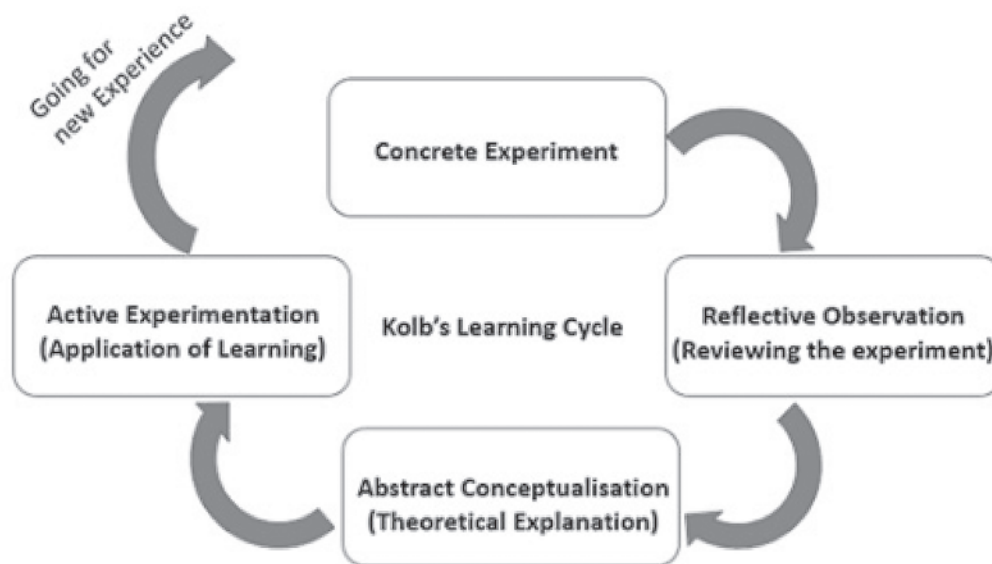


Figure 1

1. Concrete Experience: Kolb's learning process cycle begins with a concrete experience. In a concrete experience, each learner engages himself/herself in an activity or task. Since student is engaged in active experience, the likelihood is that effective learning takes place.

2. Reflective Observation: After engaging in the concrete experience, the learner steps back to reflect on the task. This stage in the learning cycle allows the learner to ask questions and discuss the experience with others. It amounts to looking back at how the experience took place and this is a sort of looking back at the process of gaining experience.

3. Abstract Conceptualization: This is the stage when the learner is in a position to explain the content/activity learnt theoretically. He/she can comprehend any question relating to the content/activity learnt. This may be similar to the narration of the story or any part of the story of a movie or play that a person happens to see in a theatre.

4. Active Experimentation: Learners return to participating in a task, this time with the goal of applying their conclusions to new experiences. They are able to make predictions, analyze tasks, and make plans for the acquired knowledge in the future.

Limitations of Kolb's Experiential Learning

Although Kolb's learning techniques provide all round development and create skills in specific areas, but it has not focused on the concept of concrete experience. If it implies laying hands on experience, then how the concrete experiences should be provided for the abstract concepts, like beauty, truth, anger, etc. It is unable to explain how to give Content Based Experiential Learning, that is, how to create learning experiences for the different types of contents, i.e. the non-projectable and the projectable ones.

Secondly, it shows the learning cycle which closes at one point. Actually, it should have been spiral-shaped, as the content learnt at the completion of the cycle is continued for learning the related higher level concepts. The scope of learning new avenues or new thought process becomes feeble in this case. However, Kolb does say that learning gained through concrete experiences can be applied for learning higher level of concepts.

Content Based Experiential Learning Model (CBELM)

Depending upon the nature of subjects, school students of different classes come across different types of course-contents. Sometimes they are absorbed in learning non-projectable activities and abstract concepts. Experiential Learning may be conveniently provided for practical-oriented topics, but the problem arises when teachers have to transact the contents of theoretical nature. An attempt has been made to develop a model that can provide experiential learning in communicating different types of contents.

This model has been designated as "Content-based Experiential Learning Model (CBELM)". This model was developed by Bhatia and Joshi (2021)

According to this model, Experiential Learning may be interpreted in two broad categories:

A) Laying Hands on experiences: Experiential Learning provided by laying hand on experience, i.e., through Project Method under which one learns by doing.

B) Illustrative experiences: The other category is by providing experience through illustrative means, viz. through suitable examples accessible to the learner, role plays, animated or still videos, sensory experiences, etc.

This model has been designed to provide the need-based experience to the learners as per the need of the situation.

Stages of CBELM

I. Assessing the Background Knowledge – The teacher is expected to know the learner’s background knowledge relating to the topic that he/she may already be knowing it, or it may be ascertained by asking a few entry-level questions.

Questions Tagged

After this phase, the learner should be able to answer the following questions:

- Did your teacher ask some questions before you entered the experiential learning stage?
- Could you answer all the questions, if not which question/s you could not answer?
- Was your knowledge updated before you were allowed to enter the experiential phase?

II. Providing Relevant Experience – All the communicable content cannot be transacted through ‘having hands on experience’. All the non-projectable topics may require different types of experiences, like showing real objects, models, videos, etc.

Questions Tagged

- Which type of experience did you have for learning the topic?
- Was this experience relevant?
- Did you come across any difficulty during the experiential stage?
- What did you learn through this experience?

III. Learner’s Role during Experiential Phase – Whatever experiential learning source has been determined for the learner; he/ she uses it for learning the content.

Questions Tagged

*Which topic did you learn through the experiential source?

- What all did you do to learn this topic?
- What was the role of your teacher during your learning phase?

IV. Reviewing the Learning – At this phase, the learner just reflects and reviews what he/she has learnt. This is the stage of contemplation and self-assessment.

Questions Tagged

- Can you recall step by step how you learnt the topic?
- Did you get stuck up at any stage of learning? If yes, how was it resolved?
- Do you accept the validity of the source of experiential learning used for you ?
- Are you fully satisfied with your learning?

V. Opening up of Further Avenues of Learning – After the desired content has been learnt, the learner develops confidence and is determined to use it for further learning of the related topics. The facilitator then, determines the topics to be transacted and envisages the further sources of experiential learning for the learner. The experiential knowledge, so gained, can be applied in new situations.

Questions Tagged

- Can you confidently explain what you have learned?
- Will you be able to apply the newly gained knowledge in new situations?
- Can you name a new situation where you will be able to apply the knowledge gained by this model?

CBELM has been illustrated through the following spiral-shaped cycle (Figure 2) given below:

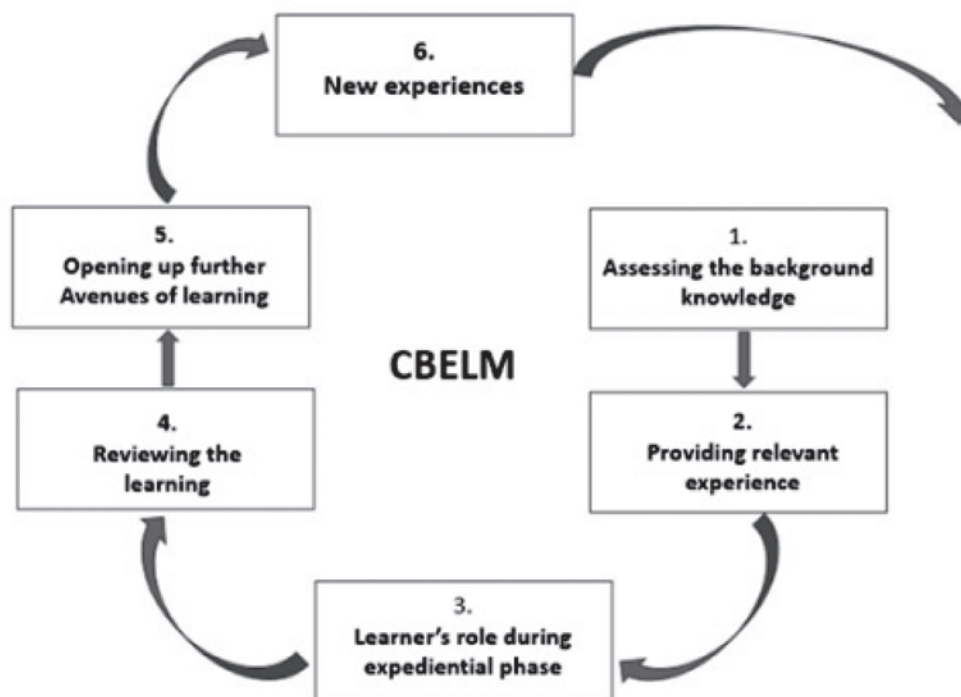


Figure 2

Strengths of CBELM

- i. **Content-based Experiences** – The nature of experiences followed in this model is content-based. Students may have hand on experience for projectable topics. For the non-projectable topics, illustrative experiences may be provided to them. They may go through different types of illustrative experiences, like suitable examples, real objects, models, role plays, story-telling, still and animated videos, etc.
- ii. **Stages of the Learning Model** – This model is divided into five stages, viz.(i) assessing the learner's background knowledge, (ii) providing experience through a suitable source,(iii) gaining experiential learning, (iv)reviewing the content learnt and then(v) developing competence to apply knowledge in new situations.
- iii. **Learning-Maturity Strengthened at each Subsequent Stage** – After getting experience from a suitable source, a learner is able to apply the learning in new situations at the completion of the learning cycle.
- iv. **Wide Scope** – This model has a much wider scope than those of other models in covering the spectrum of different subjects. In fact, any subject can be taught by following this model. This is so because it includes a wide range of experience-providing sources.
- v. **Scope of Developing Conceptual Skills** – After gaining the experience and after reviewing one's performance, one is able to develop the ability of describing the learnt matter theoretically. This strengthens one's conceptual ability.

What are the Principles of CBELM?

1. **Content-based Experience** – This model emphasizes on the principle that the experience to be provided to a learner, should be according to the nature of the content.
2. **Entry Level Knowledge** – This principle emphasizes the fact that best learning takes place when the learner has the required background knowledge which becomes the base of the desired learning.
3. **Experience Followed by Verifying Domains** – After having the hands-on experience or the illustrative experience, the learner is exposed to some domains, like reflection, analysis, and synthesis of learning. Finally, the learner is able to apply the learning in new situation/s.
4. **Learner's Active Involvement** – In order to make learning effective, it is necessary that the learner be actively involved in it. Teacher is there just as a facilitator. Students, after establishing their entry-level knowledge, engage themselves in gaining experiences, followed by reflection, analysis and synthesis of what has been learnt.
5. **Teacher as a Facilitator** – Teacher plays the role of a facilitator during the entire learning-process. His/her role is to ensure that the learner enters the experiential learning process with the requisite entry-level knowledge. Then he/she oversees the performance of the learner with the least intervention. He/she intervenes only when the learner deviates from the right path, otherwise the learner takes the responsibility of completing all the phases of this model.

6. **Evaluative Questions Tagged with each Phase** – CBELM is characterized with five phases. At the completion of each phase, some questions are asked from the learner. This is a befitting response to overcome the examination phobia existing in the modern examination system and rote-learning.
7. **Principle of Cooperation** – It has been seen that an atmosphere of cooperation prevails when the experiential learning is taking place. Each learner contributes and supplements each other's contribution in completing each phase of experiential learning.

Topics of Concrete and Illustrative Experiences

Some Experiential-Learning topics/sub-topics of the subject Science of different classes are given in the ANNEXURE.

Conclusion

After going through different aspects of "Experiential Learning, it may be concluded that for getting rid of the vice of rote learning and fear of examination, experiential learning process should be adopted and the same belief has been presented by many educationists and pedagogues who were involved in framing the NPE-2020, as also by many supporters of Experiential Learning, some of them have been included in the references of this article. CBELM, as explained above may encourage the research scholars to carry on research in this area.

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ANNEXURE

As the author of this article is a Science teacher, she has given the examples of some topics/sub-topics of Science of different classes and how the same should be transacted through Illustrative experiences or through laying hands on experiences/

Experiential Learning

Subject – EVS/Science

S.No.	Class	Topic/Sub-topic	Mode	Modalities
1.	I	Types of Plants	Laying Hands on Experience	Students will be shown real plants /animated videos/ charts and will be asked to identify the types of plants i.e., whether herbs, shrubs or tree.
2.	II	Sense Organs	Illustrative Experience	Students will be able to identify 5 sense organs and their senses. They will be able to solve the worksheet related with sense organs.
3.	III	Our friends- Animals	Illustrative Experience	Students will have the prior knowledge of “who eats what”. Videos will be shown of various animals and their eating habits. Charts showing various animals- students will identify the food they eat. Students will solve the puzzle relating to the feeding habits of animals.
4.	IV	Anita and Honeybees	Illustrative Experience	Pictorial depiction /chart/ Animated videos https://www.youtube.com/watch?v=3KQqSEXkTXY Students will be shown the animated videos and pictures showing the story of Anita who becomes Beekeeper. They will be given an activity of pictorial description in which they will be able to explain the process of Beekeeping and life cycle of a bee and the products obtained from Bee.
5.	V	Germination of Seeds	Laying Hands on Experience	Students will themselves sow some seeds in different pots and will observe the germination process. Through this they will get to know that all seeds do not grow into a new plant. Only seeds that get suitable conditions of air, water and warmth get germinated. Also they will observe stages of germination of a seed.

6.	VI	Separation of mixture	Laying Hands on Experience	Class activities/ Animated videos 1. https://www.youtube.com/watch?v=f2lBicRjfss 2. https://www.youtube.com/watch?v=0DU0VP5ICPA 3. https://www.youtube.com/watch?v=nGC9v5z-CHc 4. https://www.youtube.com/watch?v=d_4BxqQgWvw Students will perform the activities like sedimentation and decantation, filtration and magnetic separation.
7.	VII	Male and Female reproductive parts of a flower	laying Hands on Experience	Activity/ Animated videos https://www.youtube.com/watch?v=d_4BxqQgWvw Students will dissect the hibiscus flower and separate the male and female reproductive parts of flowers- Carpel and stamen.
8.	VIII	Types of forces	Laying Hands on Experience	Class activity/ Animated video https://www.youtube.com/watch?v=0vhaoZ0Wj5g Students will perform activity and watch animated video to know the effects of forces like force can change the shape of the object, change the size of the object, direction of the moving object, change the speed of the object and to stop the moving
9.	IX	Types of Mixtures: a) true solution b) colloids c) suspension	Laying Hands on Experience	Class activities with the help of different substances. https://www.youtube.com/watch?v=UktHPe4oQLc Students will observe the types of mixtures and identify them and categorise them as true solution, suspension and colloids on the basis of appearance, stability and filtration.
10.	X	Thermal decomposition reaction	Laying Hands on Experience:	Lab activity https://www.youtube.com/watch?v=UndMvcd7ZqY Students will learn by watching lab activity of heating ferrous sulphate into ferric oxide, sulphur dioxide and sulphur trioxide and identify as thermal decomposition.

Creative Writing Endeavours in Class: Drafting Print Advertisements

Jyoti Kohli

Abstract

This paper outlines a small endeavour to help Class XI learners develop Creative Writing skills with the help of authentic language learning materials. Learners' journey to drafting print advertisements with the help of facilitative tasks is documented. The tasks were created with built in scaffolding to help learners overcome their linguistic limitations. The gradual progression of tasks facilitates learners to move ahead with the process of creative drafting of a print advertisement.

Key Words : English language teaching, creative writing, learner centred, authentic material, task planning, in built scaffolding.

Introduction

While learning a second language, the learners learn to communicate with other people: to understand them, to talk to them, read what they have written and write to them. An integral part of participating fully in a new cultural setting is learning how to communicate with each other in writing. However, that is not the only reason to include writing as part of the second- language syllabus. Writing helps develop cognitive growth, organizational abilities, and the power to influence others through persuasion. Writing helps the learners reinforce the grammatical structures, idioms and vocabulary that have been transacted in class. Secondly, writing helps learners experiment with language. Not only do the learners become involved with the target language, writing, especially creative writing encourages them to use their imagination. Writing calls for use of thought, planning, organization and use of apt language to get the point across. The relationship between writing and thinking makes writing a valuable part of the language course.

Research indicates that creativity diminishes with age(Claxton et al, Vygotsky, Lehman). Creative Writing helps them remain creative through the use of their imagination and thinking out of the box. Learners who engage with creative expression are able to express their feelings, feel empathy for others and develop confidence in one's abilities.

Drafting print advertisements is a creative endeavour that is included in the ambit of +2 level learners. Advertisements provide the scope to enter a make believe situation by addressing an audience that your imagination deems appropriate for using the product at hand. Writing print advertisements calls for experimenting with language: brevity, experimental sentence structures, a punchline, and weaving a narrative in limited words and images are called for. Such creative endeavours provide learners with a break from the monotonous complexity of the new disciplines they are trying to get to grips with.

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Advertisements fit in well with the process approach to writing, where learners ask themselves not only questions about purpose, but also address processes such as How do I write this? Process approach calls for an exploration of the theme/ topic through writing, revisiting what has been written, consequently moving over to newer ideas.

The given set of tasks was devised with the express purpose of facilitating Class XI learners to become familiar with the process of framing print advertisements. They were taken through a set of tasks to identify features of advertisements, along with factors that shape the final advertisement, and finally frame a print advertisement. The tasks were scaffolded well to help the learners from state- run schools to be able to identify and use appropriate words and structures.

To begin with, the learners were asked to read sample advertisements and reflect on them in view of the key points given. The objectives for this task were

The learners would be able to:

- identify the components of an advertisement .
- analyse advertisements to identify the components present therein.

STEP A

Advertisement - A

Holiday Destination :

Chail (Himachal Pradesh)



Activities

Advertisement - B

Holiday Destination:

Corbett Riverside Resort



Activities

Advertisement - C

Holiday Destination :

Haridwar



Activities

Learners were asked to read the advertisements carefully, and identify the activities being offered in each advertisement. Next, they were asked to identify that in view of the activities, which age group seems to be the target audience. They were asked to notice the choice of words in each advertisement, and the impact these are likely to have on the reader. They were also asked to pay attention to the details such as the choice of the picture, captions that went with it, punch lines used, placement of the logo and contact details.

Learners were able to discern the difference in the choice of activities outlined in each advertisement. They were able to identify the target audience with a little prodding and cuing. They were able to discuss amongst themselves their preferences, in terms of places, activities and advertisements. Next, they were asked to go through the given table on a slide.

STEP B

Here some Key Points for writing that are Noticed by the Readers	
(1) Put your message in the headline:	(4) Use pictures that say something :
Put the special aspect of your destination /Package in the headline.	People like pictures. They are easy to 'read' use interesting pictures that make readers develop an interest in these.
(2) Try to be specific about the target group:	(5) Place your company logo clearly in the advertisement :
It should be clear from the advertisement; who is the advertisement aimed at? Try to be as specific as possible.	your logo will always remind people of what you are trying to sell. Use it on every thing.
(3) Use Positive words :	(6) Put a caption beside each picture:
You want to give a good impression of your destination, So use positive words such as "peaceful" "advertisement" "unique". Do not use negative words - say what your products is - not what is not.	when people see a picture, they look for a caption or a title. Most people do not read the rest of the advertisement.

Each point was read aloud, discussed, with examples from the given advertisements. Learners were able to develop an understanding of the key aspects that needed to be kept in mind when framing advertisements. They were reminded of the power of positivity, and asked to come up with words and adjectives that were positive. Next, the learners were asked to identify these six components in newer advertisements. They were asked to put ticks or crosses in the columns given.

STEP C

Read the table again. Look at the advertisements given below. Put a tick (•) in the box if the point is present in the advertisement given.

Components	1	2	3	4	5	6
Advertisement A						
Advertisement B						
Advertisement C						

Advertisement A



Advertisement B



Advertisement C



Learners did not require a long time for completing this task. Some of them discussed certain points with their partners. They seemed to appreciate this task. They were asked to look up advertisements of places of their own interest at home, and bring one advertisement which included the maximum number of features discussed.

The next class started with a discussion of the advertisements some learners had brought. The six components covered in the previous class were revised with the help of these advertisements and listed on the board. The tasks for the day were based on these objectives.

Objectives

The learners would be able to:

- work on the different components of advertisements.
- identify *the target population for advertisements*.
- suggest positive words and phrases describing holiday destination and activities,
- write captions for photographs, write an advertisement.
- write an advertisement.

Learners were divided into groups of four. Each group was presented with a set of postcards for different holiday destinations. Samples of two different holiday destinations are given here. They were asked to look at these closely, discuss amongst themselves and identify the place. Next, they were to identify the activity and its target population. They were asked to come up with positive words and phrases for each picture. A variety of expressions were encouraged. They were instructed that it is not mandatory to concur on the choice of words. They could list as many as they wanted. However, they ought to be able to explain their choices in view of the postcards.

STEP D

Sample Postcards:

Magnificent Kerala



Target People

Word\Phrases

Caption



Target People

Word\Phrases

Caption



Target People

Word\Phrases

Caption



Target People

Word\Phrases

Caption

Awesome Manali



Target People

Word\Phrases

Caption



Target People

Word\Phrases

Caption



Target People

Word\Phrases

Caption



Target People

Word\Phrases

Caption

Learners were a part of avid discussions. They were able to identify most places with ease. They came up with a number of creative expressions to describe each place. In the process they put their knowledge of geography to good use. They sought clarity regarding some postcard names of places and their significance. The post cards with adventurous themes were a great success and many of them expressed a desire to visit such places. Writing captions turned out to be quite competitive. They tried to outdo other groups. Hindi movies proved to be an inspiration too -- Masakali Kathakali, Fly with me, Come! Be a bird, Experience the snowflakes, Untouched Beauty..... and so on.

This first task had prepared them for the next step. Each group was asked to come up with a print advertisement for the place allocated to them. They had to devise an advertisement that would motivate others to visit the place. They could draw or use the post cards given to them. It took most groups another 7 to 10 minutes to agree upon a format and finalise their ad. The advertisements were lined up, read out and discussed.

As the last step, each group could either ask one question or give one suggestion to other groups. They had to write the questions/ suggestions on a piece of paper and present it to the concerned group. They were asked to review and finalise their advertisements before the next English class.

Most learners acknowledged that they had enjoyed the process of drafting and reviewing the advertisements. All the final advertisements were displayed for a week in the class.

Discussion

This set of tasks were first in a series of creative writing tasks to facilitate Class XI learners in becoming confident.

STEP A helped the learners in noticing details about print advertisements. It oriented them to vocabulary they needed to use at a later stage. It provided them with different samples of the same theme. It worked as a pre- writing task and prepared them for the identification of the specific components considered significant for the print advertisements.

STEP B crystallised what had been augmented earlier. It provided them with the Must Do's for writing print ads.

STEP C helped them in analysing the advertisements vis- a- vis the components, helping them in identifying the manner in which these are knitted together in the advertisements. These steps are extremely significant for the purpose of teaching. Though most learners may come across advertisements in various newspapers or magazines, yet they may not pay attention to the details that go into their making. The process approach to writing mandates that enough effort needs to go into learner preparation. Not only should they be prepared for the content and its organization, but significant attention needs to be paid to the nuances of its features. Creative Writing endeavours cannot begin with free tasks. The issues of form, content and linguistic readiness need to be catered to.

STEP D comprised a heavily guided task that helped the learners engage with one step at a time. The inherent steps in the task scaffolded the learners to gradually move ahead towards the drafting of the advertisement. Keeping in view the limited functionality of learners in the target language, learners were divided into groups of four so that they would be able to accomplish the tasks collectively. Each group was provided with a different set of postcards so that the variety of induce would lead to the emergence of a variety of advertisements.

The different sets added to the learners' enthusiasm and sense of accomplishment. Guidance inherent in the postcards proved to be quite facilitative for the learners.

Takeaways for Teachers

- Creativity of learners needs to be nurtured. Opportunities for Creative Writing need to be created within class time.
- Readiness to facilitate and scaffold learners' creative endeavours is needed on part of teachers.
- Teachers' eyes need to be trained to recognize authentic material that can be used in class to cue learners.
- Task planning needs to be taken up such that cues are embedded in the process itself. Each preceding step can prepare the learners for the one that follows.
- Tasks need to be such that drafting and re- drafting are a part of the process of writing itself.
- The tasks and themes delineated by the teacher ought to be engaging for learners.

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This activity was conducted by the Author as part of her PhD Coursework in a school.

An Innovative Way of Balancing Chemical Equations

Ravijot Sandhu

Abstract

Chemical equations are balanced in order to satisfy the Law of Conservation of Mass and to establish the mole relationship needed for stoichiometric calculations. It has been observed that students find balancing of chemical equations difficult. Review of the related literature also shows that balancing of chemical equations is difficult for students across the globe. In this paper an attempt has been made to show an innovative way of balancing chemical equations during teaching-learning process. The innovative way also enhances the learning curve and interest quotient amongst students.

Key Words: Innovative ways, Balancing of equations, Children with visual impairment, Coefficients. Subscripts.

Introduction and Review of Literature

A chemical reaction can be represented by a chemical equation. This means whenever a chemical change occurs, we can say a chemical reaction has taken place. The chemical reaction needs to be balanced as it is only rearrangement of atoms. Atoms are neither created nor destroyed during a chemical reaction. Therefore, the chemical reaction needs to be balanced to follow the law of conservation of mass. In chemistry, the Balancing of Equations has been introduced at the secondary level of school education.

Researchers and science educators found that varied factors contributed to students' difficulties about balancing chemical equations.

Researches have shown that the understanding, balancing, and interpreting chemical equations depend on understanding the structure and physical state of the reactants and products, the dynamic nature of particular interaction, the qualitative relationships among the particles, and the large number of particles involved (Ben-Zui et al., 1987; Ross 1989).

Nakhleh 1992, attributed students' prescientific conceptions of chemical equilibrium to the lack of chemical knowledge concerning how to regard and apply symbolism of a chemical equation.

It has been pointed out that the lack of mastering conceptual ecology of chemistry contributed to students' difficulties (Hesse & Andersson 1992). It has also been found that students' understanding of chemical formulas significantly influences overall equation balancing performance (Staver & Jacks 1988).

Researches have also concluded that many students do not differentiate between subscripts of chemical formulas and coefficients in chemical equations. Also, they possess a poor understanding of those two concepts and are willing to violate the chemical equation balancing rules (Savoy 1988; Schmidt 1984, 1986, 1989; Yaroch 1985).

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Savoy, 1988 believes that the lack of knowledge of valency numbers and a failure to understand concepts, such as atomicity, use of brackets, and the significance of subscripts and coefficients, contribute to students' difficulties.

Gabel et al., 1987 and Yaroch 1984, 1985 concluded that the lack of performing simple arithmetic operations involved the lack of understanding of the chemical concepts and their significance as well as students' inability to read and interpret scientific language—all contributed to students' difficulties in chemistry. It has also been found that the beginners equate chemical equations with actual reactions (Filgueiras, 1992).

As a teacher-researcher, while teaching students of Grade X from last 27 years, it has been observed that **students face difficulty in learning balancing of equations**. Review of the related literature strengthened the belief of the researcher to create innovative way for teaching-learning of balancing of chemical equations. In the beginning of researcher's career, she used to transact the topic of **Balancing of Chemical Equations** by using 'chalk and talk' method; by writing unbalanced equations on the black board and involving students to balance these equations by inviting them one by one to the blackboard. This was probably because she was trained in her pre-service professional training to teach this topic in this manner only. Over the years, teacher-researcher realised that students find this topic as a burden and stressful. This she realized by taking feedback from her students and following were students' responses:

Students: *We find the balancing of equations difficult and the reactions along with the coefficients. Some students said they don't understand why they can't change the subscript instead of coefficient!*

The researcher also enquired about the experiences of her fellow colleagues about this topic.

Following were the responses-

Teacher 1: *It's difficult for students even to remember the correct symbols, formulae and valencies, as a result they would make mistakes while balancing the equations.*

Teacher 2: *I have to struggle to make students visualise the abstract concept about how to represent the actual reaction happening in their test tubes or beakers in chemical equations format....They often ask questions like why we take two Mg atoms and not four to represent 'Burning of Magnesium ribbon in air?' As shown in equation $2 \text{Mg} + \text{O}_2 \rightarrow 2 \text{MgO}$*

Teacher 3: *Some students consider arrow ($\rightarrow$) in the reaction as 'equal to' ($=$) as how it is in the quadratic equations and some students, instead of placing coefficients in front of atom or molecule, simply add extra element!*

Teacher 4: *Some students master the technique of balancing a chemical equation by picturing a chemical equation as a mathematical puzzle in which the number of atoms on each side of the equation has to be equal to each other.*

Similarly, many more teachers showed equal discomfort in teaching this topic.

Researcher also tried to make this topic interesting using ICT, showing students online lessons and videos to strengthen this topic.

Literature shows that very limited research studies have been done on teaching-learning strategies of Balancing of Equations. Considering this a universal problem, researcher developed an innovative teaching-learning strategy to make this topic interesting.

And the Journey Began

A holistic lesson developed by a teacher requires the inclusion of all three domains in constructing learning tasks for students, which include cognitive (thinking), affective (emotions or feeling) and Psychomotor (Physical or kinesthetics) to be achieved.

During teaching-learning of balancing chemical equations, researcher improvised 'Hit and Trial' method, and invented most suitable strategy to make students visualize about the balancing of atoms on both the reactants and products side.

Students were asked to bring colourful chart papers or any available colourful sheets, clay/ locally available mud to make dough balls etc. Researcher also provided materials such as, chart paper strips, colourful sketch pens, coloured clay etc., to students. Students were also encouraged to share their materials.

Science through Games

First challenge was to find an easy way to recapitulate formulae writing. Grade X class of 42 students was divided into 7 groups and students were made to do an ice breaker to recall the symbols and valencies of elements. For those who had difficulty recalling correct symbols, formulae and valencies, they were made to play '**Elementola' Science Game**, in which teacher with the help of students prepare slips/ tickets having a box with nine squares with symbols of any 5 of the first twenty elements in the periodic table written in random squares. It was ensured that all the tickets did not have 5 symbols of same elements. To start the game the facilitator picked up a coin with symbols and atomic numbers written on it from the bowl and spoke aloud either the name or atomic number of the element.

(Coins were made from locally available materials or used bottle caps).

Players/students strike out symbol of that element if it is there on their ticket. The student who is first to strike out all the elements in the given ticket was declared the winner!

For Children with Visual Impairment (CWVI), tickets were made in Braille and tactile (NCERT 2020).

Staver & Jacks 1988 found that students' understanding of chemical formulas significantly influences overall chemical equation balancing performance. Another **Science Game 'Ion Combos'** was played in the classroom to practice making chemical formulae from the given set of cards having cations and anions written on them. *The objective was to explore students' conceptions of a chemical formula's significance, recognition, manipulation, and writing.* (Al-kunified, Ali Abdallah, 1993)

After intervention, an assessment sheet was given to ascertain whether there was any improvement in their understanding and competency of writing chemical formulae.

Science through Activity

Researcher first demonstrated an activity of '**Burning of Magnesium Ribbon**'. After observing the burning of Magnesium ribbon, students were asked to write the chemical reaction in a sentence form. Different responses were-

- i. 5 students said -Magnesium ribbon burnt with white smoke
- ii. 8 students said -Sparkling white light is seen and ash is formed
- iii. 3 students said -The magnesium burned easily.
- iv. 6 students said -We got ashes.
- v. 8 students said -We got white substance.
- vi. 7 students said -The magnesium is flammable so it caught fire
- vii. 5 students said -The magnesium reacted with the fire.

Teacher noticed that students have described the product (magnesium oxide) as ash. She explained that the magnesium strip on burning in air turned into white ash ie magnesium oxide.

She helped students to arrive at the chemical reaction in a sentence form.

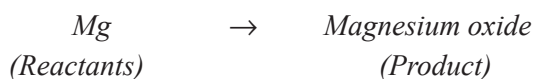
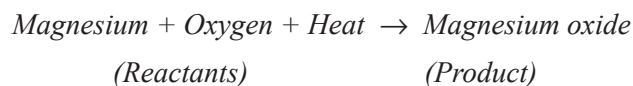
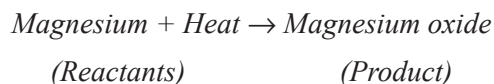
STEP 1: Writing the chemical reaction in a sentence form-

"When a magnesium ribbon is burnt in oxygen, it gets converted to magnesium oxide".

STEP 2: Writing the chemical reaction in the form of a word-equation.

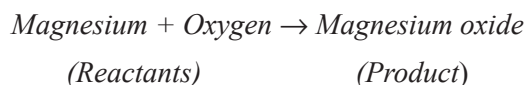
Since the description in a sentence form is quite long, the simplest way to write it in the short form is by writing a word-equation.

Students exhibited variety of responses -



It was interesting to note that twelve students indicated in their responses that the heat was one of the reactants. 14 students ignored the presence of the oxygen as one of the reactants but considered it in the product. After having discussion with students and explaining them by giving more examples such as burning

of coal etc., students realized that burning of magnesium ribbon is possible only in the presence of oxygen. The researcher helped students to arrive at the word-equation for the above reaction –



The students were told to identify reactants and products from the above reaction. 85 % of the students gave correct answers which were shared in the classroom: **the substances that undergo chemical change in the reaction i.e magnesium and oxygen, were the reactants and the new substance i.e magnesium oxide, formed during the reaction, was the product.**

Then was the time to emphasise on the importance of placing arrow and plus sign (+). A word-equation shows change of reactants to products through an arrow placed between them. The reactants are written on the left-hand side (LHS) with a plus sign (+) between them. Similarly, products are written on the right-hand side (RHS) with a plus sign (+) between them. Always remember that **the arrowhead points towards the products, and shows the direction of the reaction.**

STEP 3: Writing of Chemical equations:

Chemical reactions can be made more concise and useful if we use the language of chemistry i.e .chemical formulae instead of words.

By using the formulae of magnesium, oxygen and magnesium oxide, the above word-equation was written as shown in Figure 1:

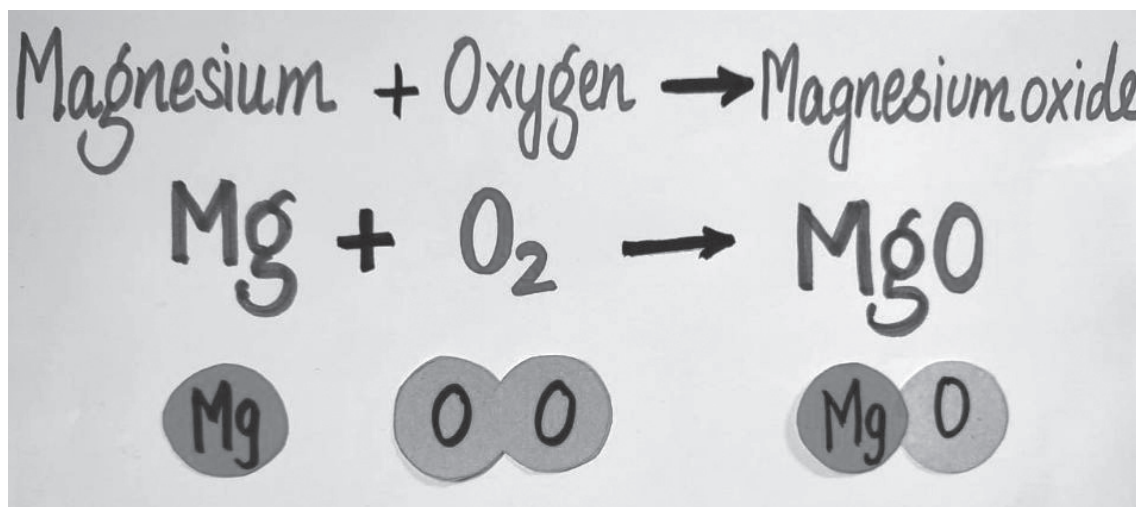


Figure 1

STEP 4: Now students were motivated to Count and Compare the Number of Atoms of Each Element on the LHS and RHS of the Arrow by probing questions such as-

Is the number of atoms of each element the same on both the sides?

If not, then the equation is unbalanced because the mass is not the same on both sides of the equation.

Such a chemical equation is a **skeletal chemical equation for a reaction** (Figure 2).

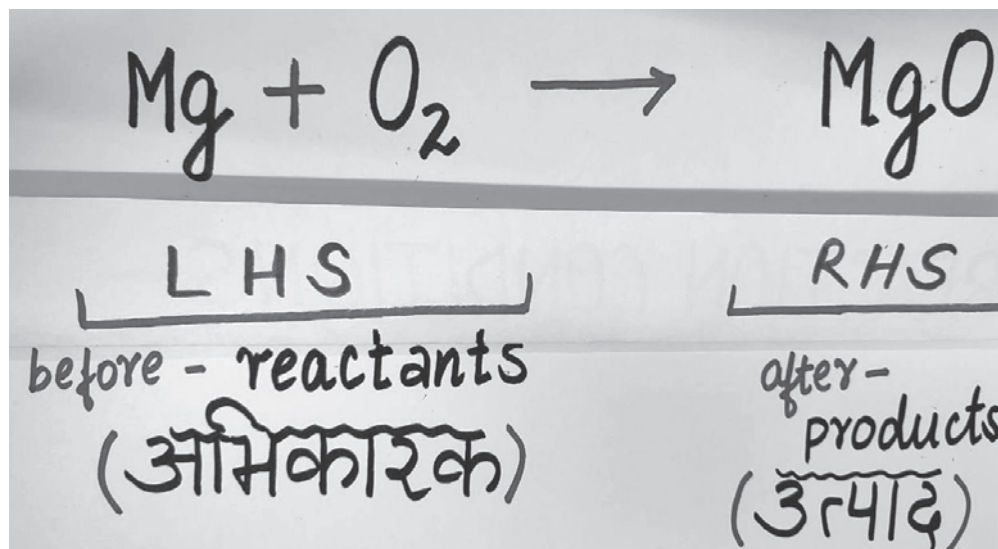
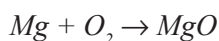


Figure 2

This equation is a skeletal chemical equation for the burning of magnesium in air because it is unbalanced.

Students were made to recall about the **law of conservation of mass**, which they have learnt in their previous classes; mass can neither be created nor destroyed in a chemical reaction. That is, the **total mass of the elements present in the products of a chemical reaction has to be equal to the total mass of the elements present in the reactants** (Figure 3). In other words, the number of atoms of each element remains the same, before and after a chemical reaction.

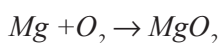
Hence, we need to balance a skeletal chemical equation.



Students were quick to observe that on LHS there is one atom of magnesium, two atoms of oxygen and on the RHS there is one atom each of magnesium and oxygen.

*Some students wondered- why do we need to balance equations? Some even asked questions such as: will our marks get deducted in exam/test if we do not balance the chemical equations? **Unbalanced equations in science aren't particularly useful to us and we have to make them balanced before we can use them for problem solving or doing calculations.***

12 students assumed that to balance a chemical equation you make the left side equal to the right side.... same elements on both the sides... Few students indicated in their answers that the product was MgO_2 . They combined the reactants (Mg and O_2) and completed the formula equation. For example, one student wrote the following equation:



Let's Clear Our Concepts: Science Through Concept Clarification

Next step was to make them differentiate between - Coefficients and Subscripts. Many students struggle because they are not sure which number they have to change in order to balance an equation. Ben-Zui, Eylon, and Silberstein 1987; Hackling and Garnett 1985; Savoy 1988; and Yarroch 1989 found in their studies that students lacked understanding of the significance and function of coefficients and subscripts in formulas and equations. Besides, Lazonby, Morris, and Waddington 1982; Savoy 1988; Schmidt 1984; and Yarroch 1985 concluded from their studies that students confused stoichiometric coefficients in equations with subscripts in formulas.

Students were told that when they balance an equation they can change only coefficients as shown in Figure 3. (*Coefficients are the numbers in front of the molecules or atoms*).

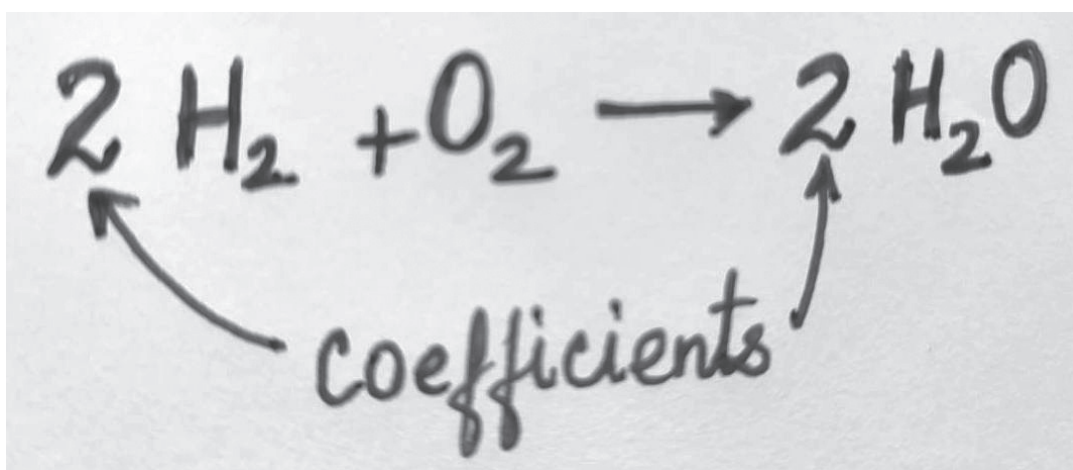


Figure 3

Subscript are the smaller numbers found after atoms as shown in Figure 4. These cannot be changed when balancing chemical equations.

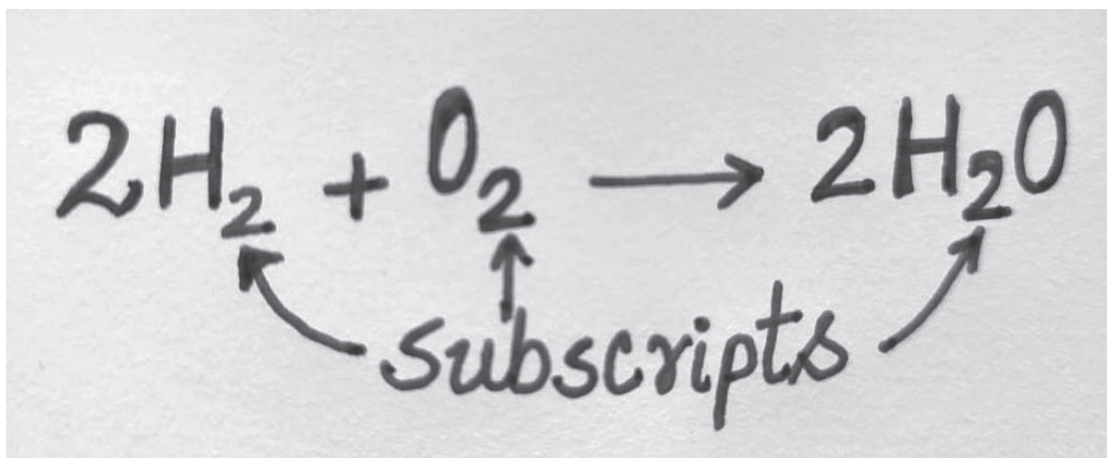


Figure 4

Subscripts tell us how many atoms of a given element are in one molecule whereas, coefficients tell us how many of that molecule or atoms are present in the reaction.

After the students were convinced and satisfied that why one cannot change the subscript only then we moved on.....

Science through Art form:

Visualization of number of atoms or molecules taking part in a chemical reaction:

After interaction with the students over the years during teaching-learning, it was clear to the researcher that the students used their everyday language to understand the chemical reactions. To **understand the concepts behind the balancing a chemical equation, the researcher made an attempt to utilize an innovative way of teaching-learning of balancing of a chemical equation to help the students to visualise number of atoms and molecules taking part in the chemical reaction** by placing paper cutouts in circular shape or clay balls or colourful buttons or sticker bindis etc., under the written skeletal chemical equations. The class was full of fun and laughter as students helped each other in preparing various cut outs as shown in Figure 5.

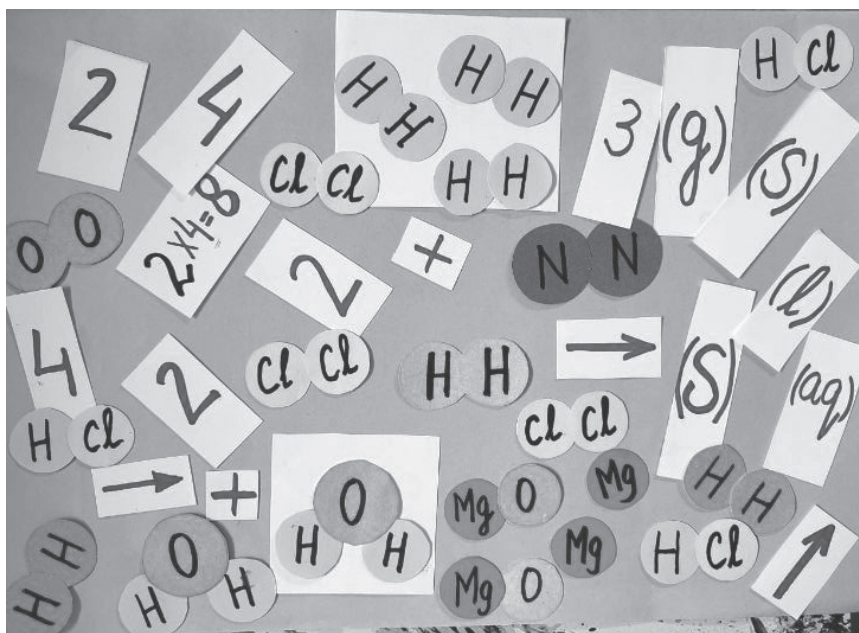


Figure 5

The students' demonstrated Magnesium atom with one circle of orange colour cut out and Oxygen molecule with two circles attached with each other of different colour say green as shown in Figure 6. The product Magnesium oxide was represented with one circle cut out of orange attached to green circle. Such coloured cut outs were easy for students to see that both the colour cutouts were not equal in number on LHS and RHS. **The researcher represented the same chemical equation using different coloured buttons for Children with Visual Impairment (CWVI) to touch and feel the number of atoms/ molecules** as shown in Figure 7

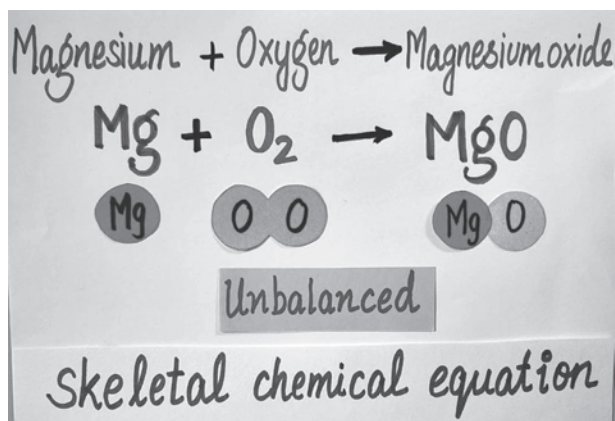


Figure 6

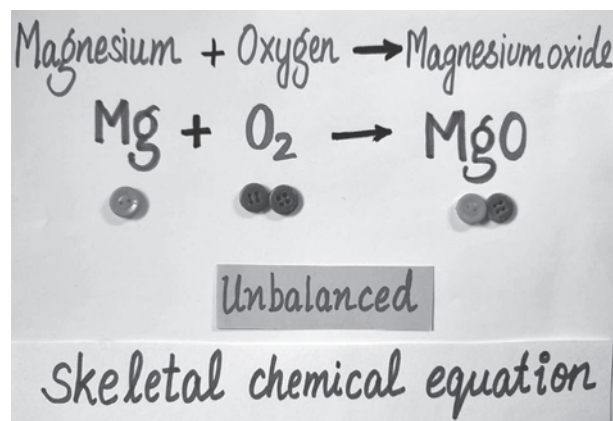


Figure 7

For CWVI were also were excited like sighted students to tell that how many atoms need to be adjusted to balance the chemical equation.

This becomes interesting for students as it is like solving a bit of a puzzle by making few adjustments.

Figure 8 and Figure 9 show balanced chemical equation with same number of buttons or paper cutouts on LHS and RHS.

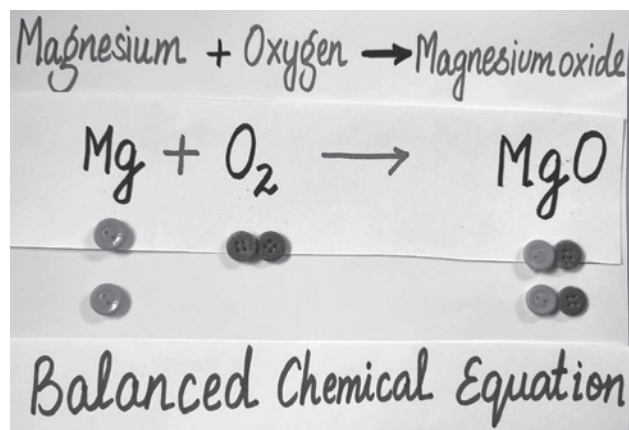


Figure 8

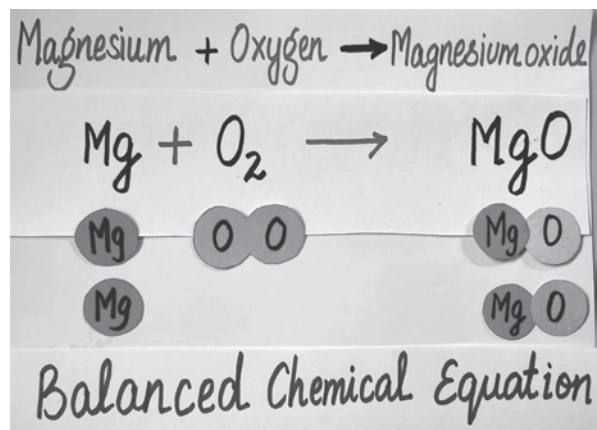


Figure 9

Students were motivated to play till they get same number of atoms on each side. Students had fun in doing this activity.

After the coloured paper cutouts or clay balls or buttons (representation of atoms) were equal on LHS and RHS then cut outs of coefficients (2) were kept accordingly in front of the Magnesium atom on LHS and Magnesium oxide on RHS as shown in Figures 10 and 11.

By now students were excited and it was clear to them that number of magnesium and oxygen atoms on both the sides of the arrow was two each, though on LHS two Magnesium atoms were present and on RHS Magnesium was a part of the molecule. Visually impaired students were also happy as they were made to feel the number of atoms represented by colourful buttons or clay dough or soil or crumpled paper balls of different shapes.

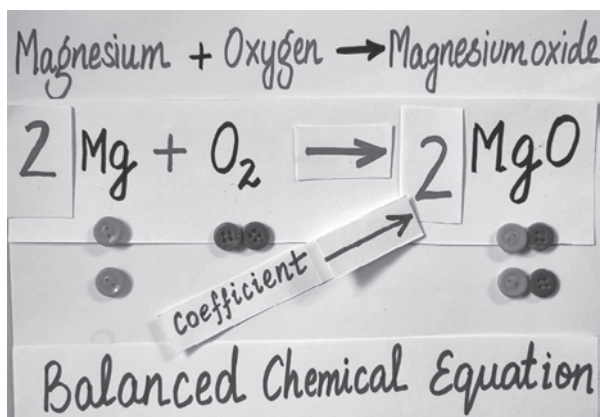


Figure 10

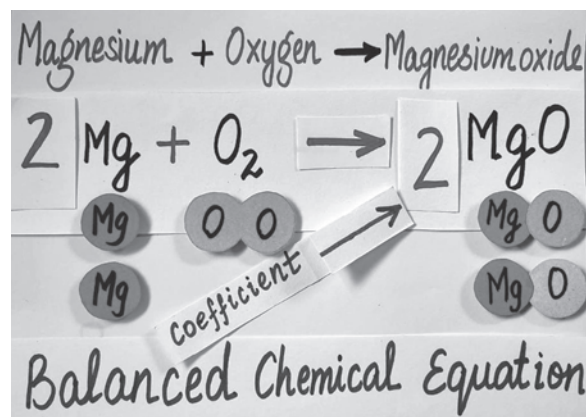


Figure 11

Science through Task

To further strengthen the concept and assess the students understanding, the class was once again divided into 4 groups and each group was assigned a chemical equation to balance. This was as innovative and engaging assignment. These kinds of peer and self-assessment can foster a number of skills, such as reflection, critical thinking and self-awareness among students.

Group 1: Hydrogen gas and Chlorine gas combine to make Hydrochloric acid.

This group was told to make clay ball visuals to show the atoms and molecules participating in the reaction. Their presentation is shown in Figure 12 and Figure 13.

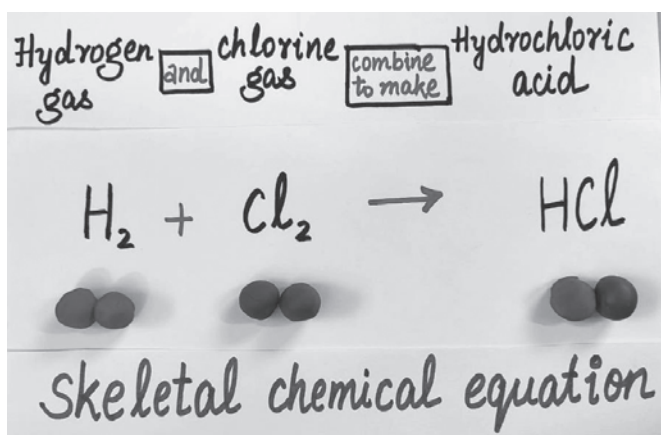


Figure 12

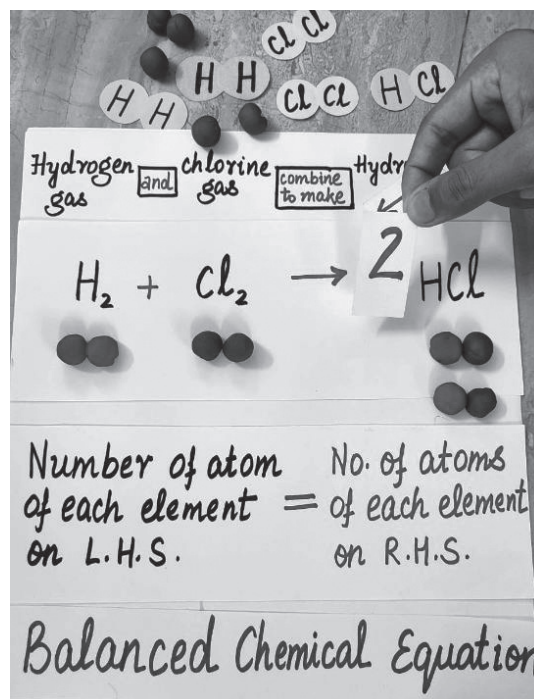


Figure 13

Group 2: Hydrogen gas and Oxygen gas combine to form Water. Group 2 was told to make round/ circle paper structures to show the atoms and molecules participating in the reaction as shown in Figure 14 and Figure 15.

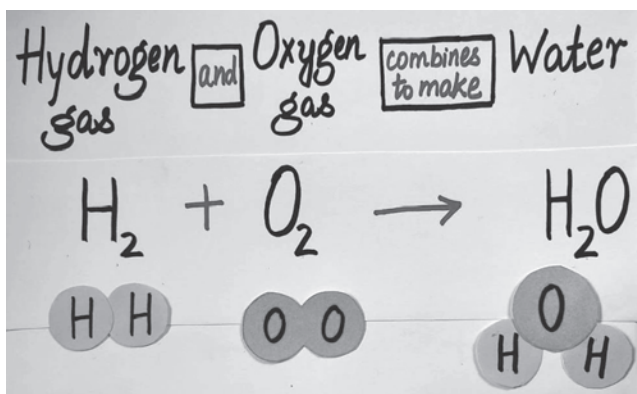


Figure 14

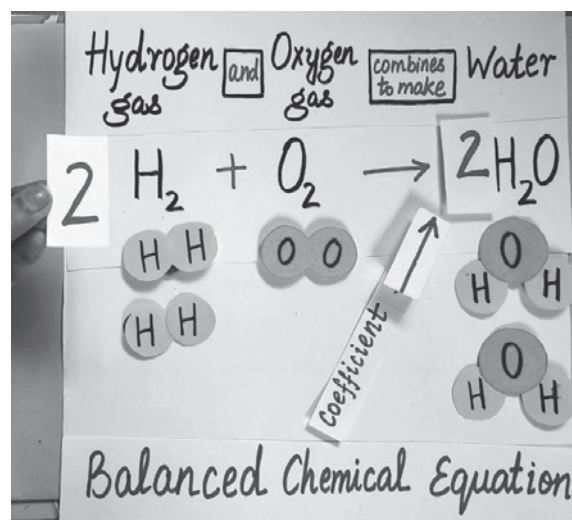
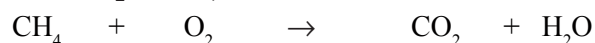


Figure 15

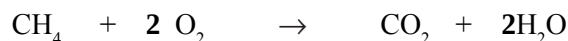
Group 3: Methane gas on reaction with Oxygen form Carbon dioxide gas and Water.

Group 3 was told to make paper structures of different shapes to show the atoms and molecules participating in the reaction.

Unbalanced (skeletal chemical equation)



Balanced Chemical Equation-



Group 3 students reported that it was much easier to make the number of molecules on reactants and products sides equal as they simply made sure that there were equal numbers of shapes on both the sides.

Group 4: Iron reacts with moisture (water) to form rust (ferric oxide) and hydrogen gas

The students were told that to balance chemical equations they cannot always be using visuals or drawings. The visuals were used to help to understand the concept better. Actually to balance equations they have to use charts or tables and basic mathematics.

Group 4 were told to make tables/ charts to show the atoms and molecules participating in the reaction. These charts or tables help to keep track of atoms on both sides.

Once again students were taken through journey of Balancing of Equations and made to hop on imaginary bus which will halt at various stops-

STOP 1: Write the skeletal chemical equation as shown in Figure 16.

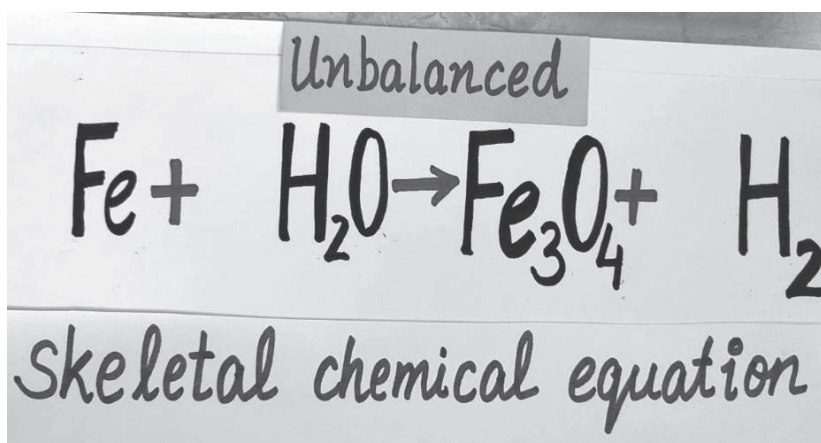


Figure 16

STOP 2: List the number of atoms of different elements present in the unbalanced equation (Figure 17)

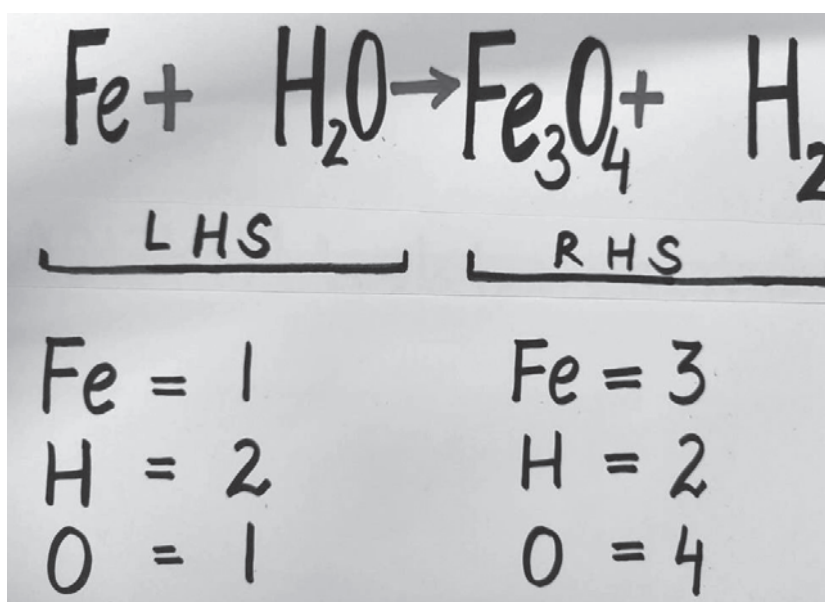


Figure 17

STOP 3: It is often convenient to start balancing with the compound that contains the maximum number of atoms. It may be a reactant or a product. In that compound, select the element which has the maximum number of atoms. Using these criteria, we select Fe_3O_4 and the element oxygen in it. There are four oxygen atoms on the RHS and only one on the LHS.

To balance the oxygen atoms –

Students here were reminded that to equalise the number of atoms, we cannot alter the formulae of the compounds or elements involved in the reactions, they were quick to answer that to balance oxygen atoms we can put coefficient '4' as $4 \text{H}_2\text{O}$ (Figure 18) and not H_2O_4 .

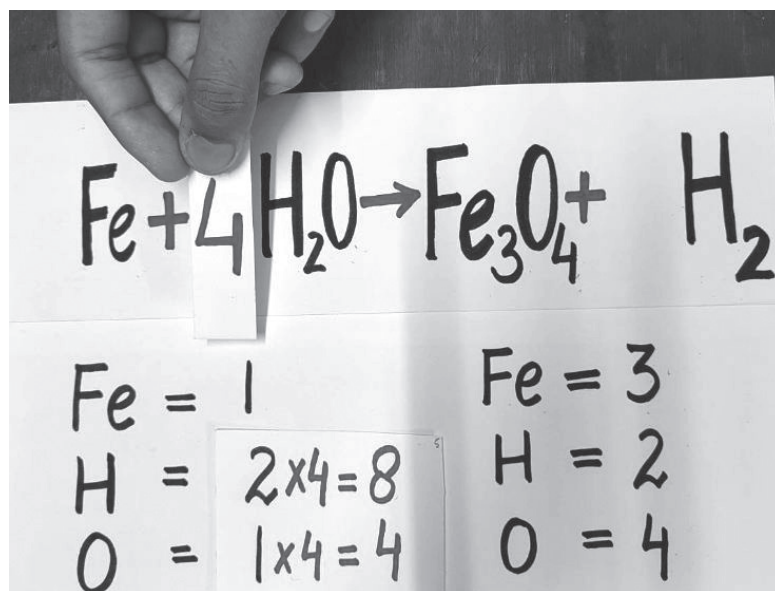
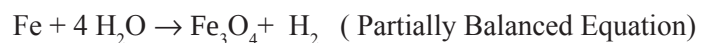


Figure 18

Now the partly balanced equation becomes –



STOP 4: Fe and H were still not balanced. Students were encouraged to pick any of these elements to proceed further. So first they balanced hydrogen. To equalize the number of H atoms, they made the number of molecules of hydrogen as four on RHS. (Figure 19)

The equation became-

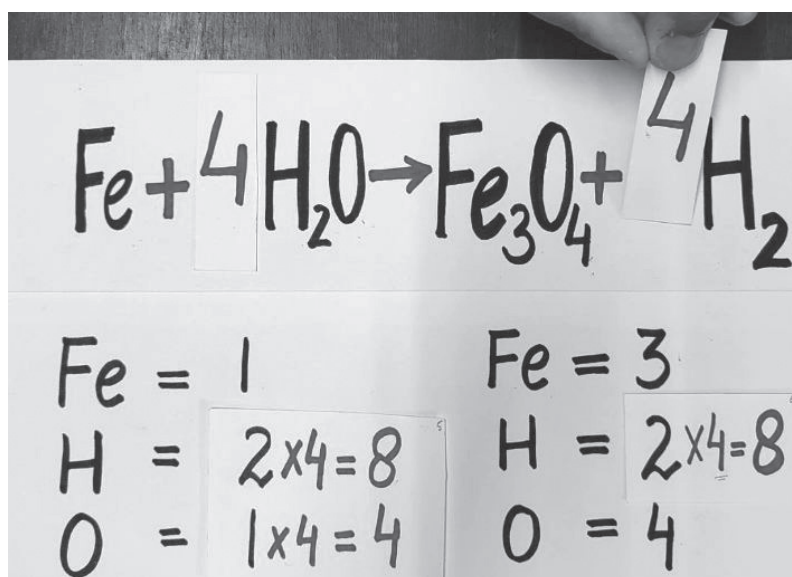
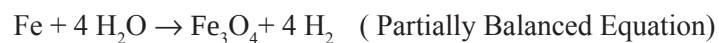


Figure 19

STOP 5: Then they picked up the third element Fe and balanced it by adding coefficient 3 to make 3 atoms of Fe on LHS. (Figure20)

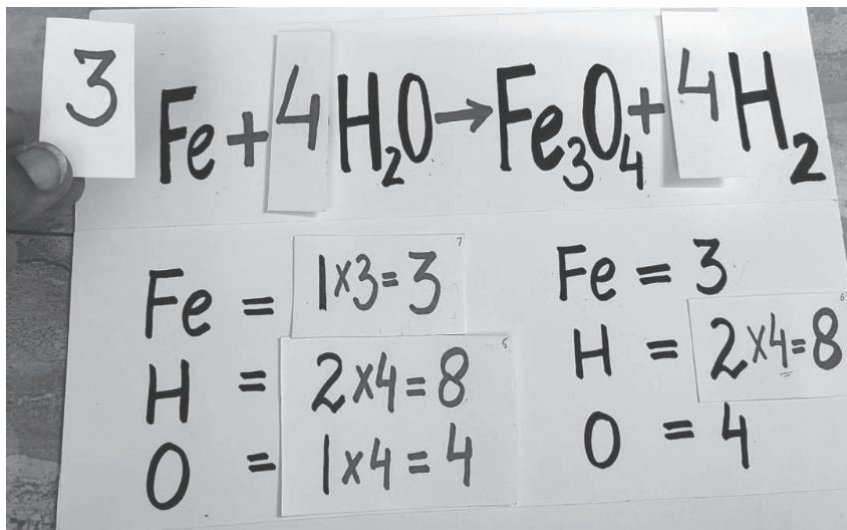


Figure 20



STOP 6: Students here were told that to make a chemical equation more informative, the physical states of the reactants and products are mentioned along with their chemical formulae.

The balanced equation thus became- (Figure 21)

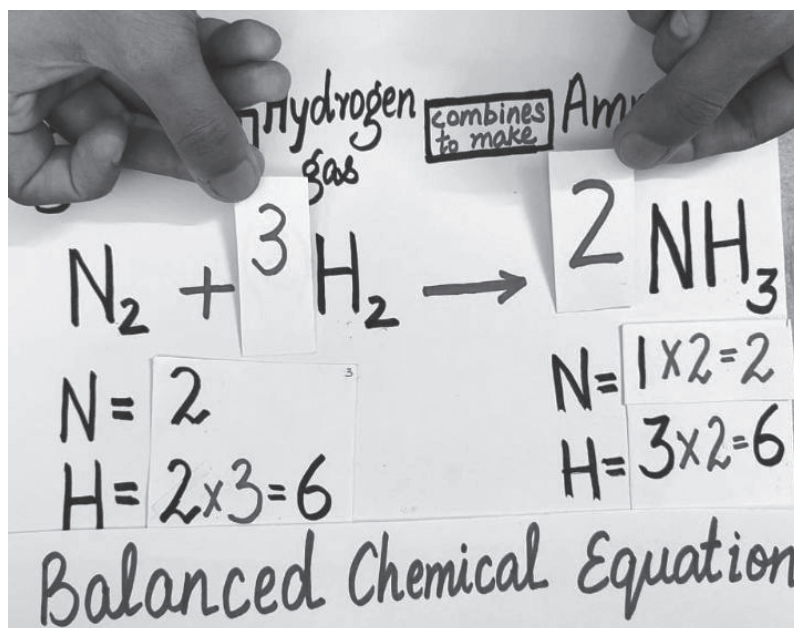


Figure 21

Assessment Task:

Towards the end of the session all the students were given the reaction -

“Nitrogen gas and Hydrogen gas combine to form Ammonia” to balance. Almost all the students balanced it correctly, some used the cut out method and others used the tabular form. (Figures 22 and 23) Students’ excitement new no bound when they placed the correct coefficient in front of the molecules.

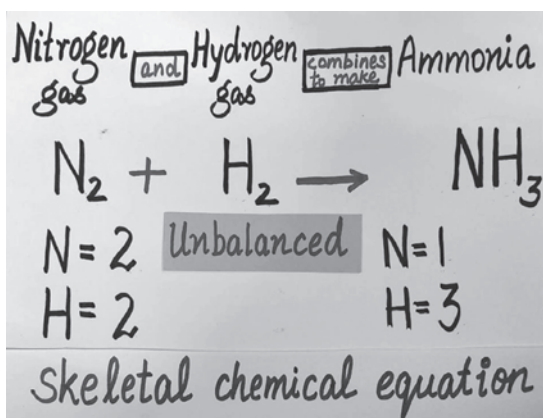


Figure 22

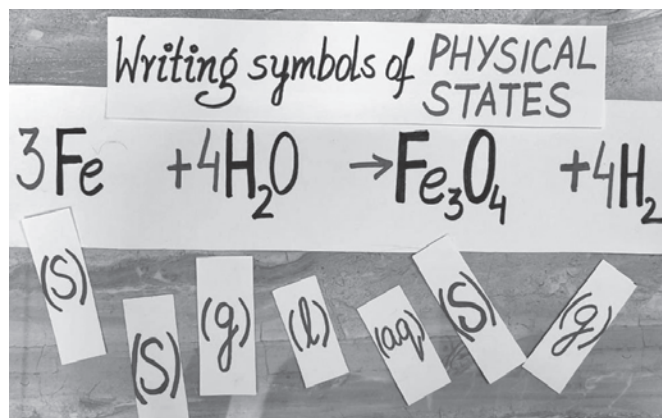


Figure 23

Conclusion

Students were interviewed when the session was over (Annexure 1) and to assess students’ understanding of the basic chemical concepts involved in writing of Chemical equation: recognition, manipulation, writing, balancing, the meaning of plus sign (+) in each side, the meaning of arrow sign ($\rightarrow$), role of coefficient, the relation between subscript and coefficient.

The interview session allowed students to ask questions, to clarify actual ambiguities before answering and also giving flexibility in discussing reasons for particular answers (Gilbert, Osborne, & Fensham 1982). It was clear from their answers that now students were able to visualize the microscopic level of chemical reactions while balancing Chemical Equations. This became possible only when a culture of excitement, curiosity, open thinking and exploration was created. It was observed that the students who participated in this study attempted all the questions related to the Balancing of Chemical Equations and gave correct responses in the term end exam as well, which established that there was retention of the concepts taught through innovative ways. An important implication of the study is that teaching-learning of Balancing of Chemical Equations by Innovative methods resulted in high level of achievement in terms of scores and deep understanding of concepts. In classrooms, there are different categories of learners who have varying needs. Therefore, different methods must be adopted in the planning and delivery of lessons to ensure that such needs are addressed.

An important implication of the study is that curriculum planners can take a hint from the curious questions/ responses of the learners and design innovative models/games on the science topics. In an increasingly complex and changing pedagogical context, it is vital for teachers to move away from traditional way of teaching and embrace pedagogical shift in science education by providing more opportunities to students for scientific exploration and making it inclusive and meaningful.

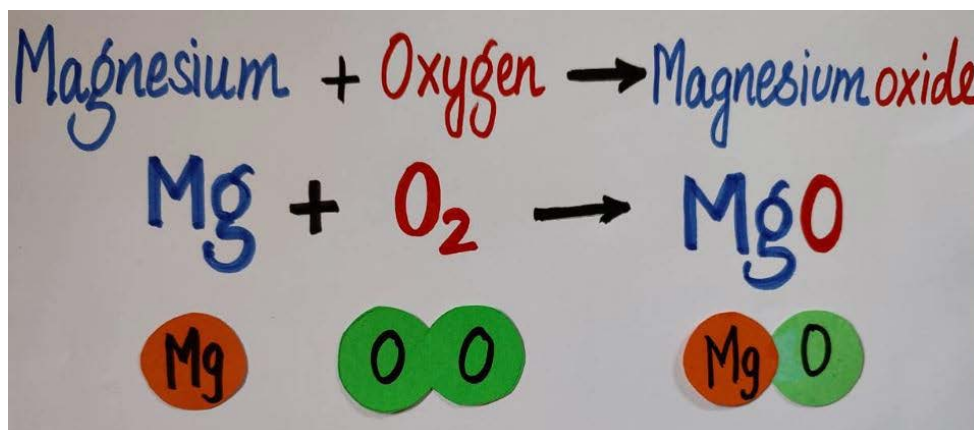


Figure 1

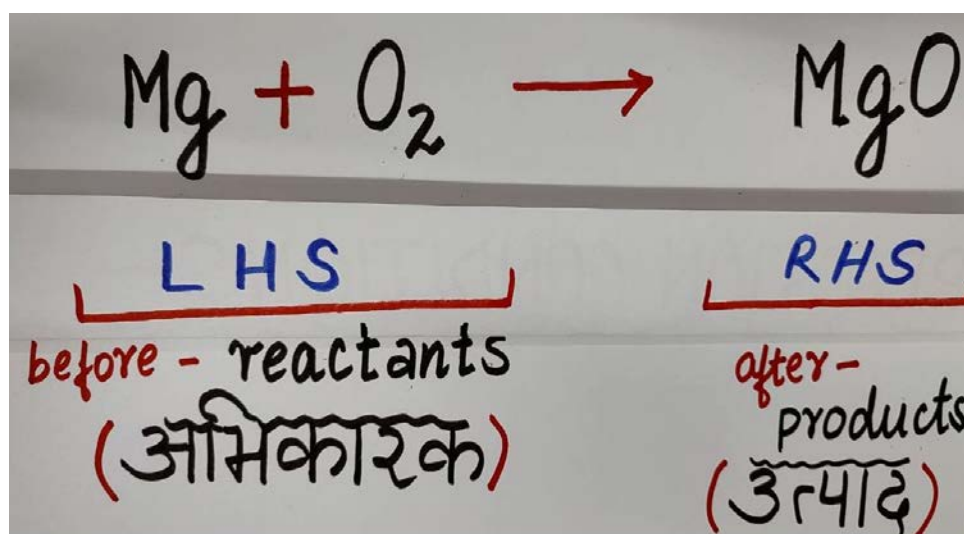


Figure 2

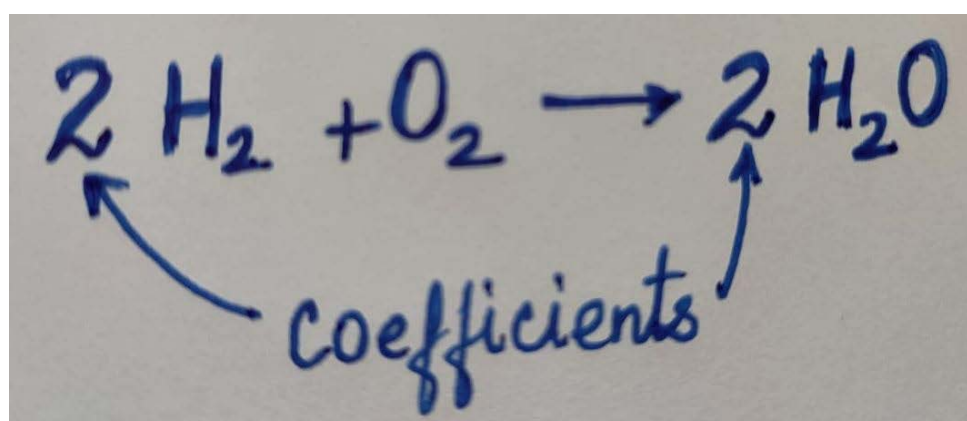


Figure 3

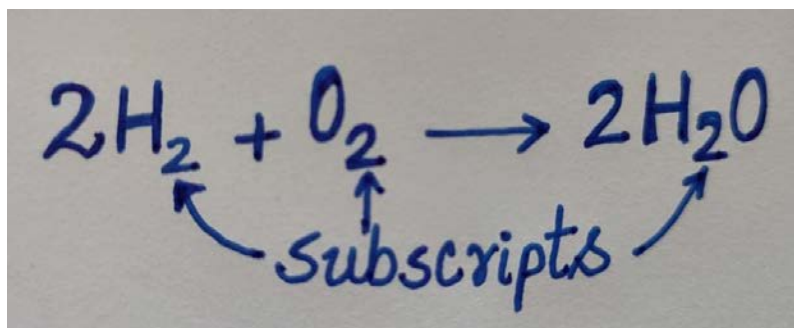


Figure 4

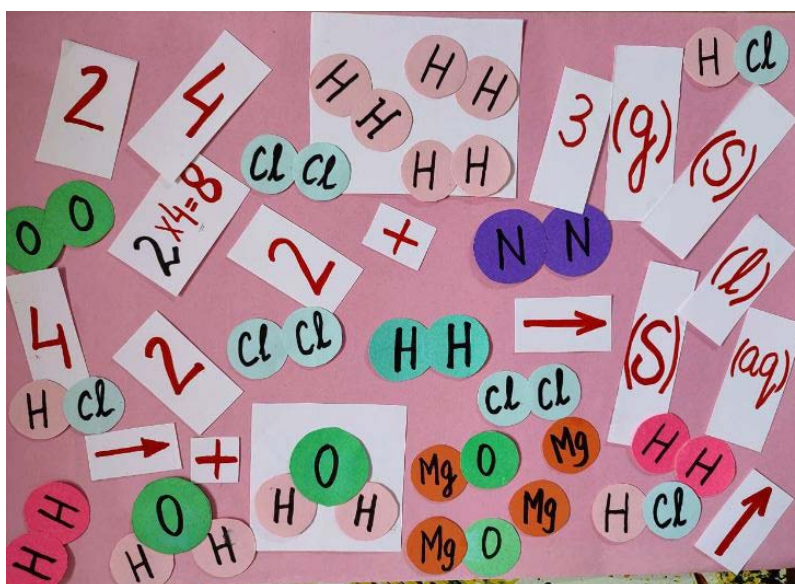


Figure 5

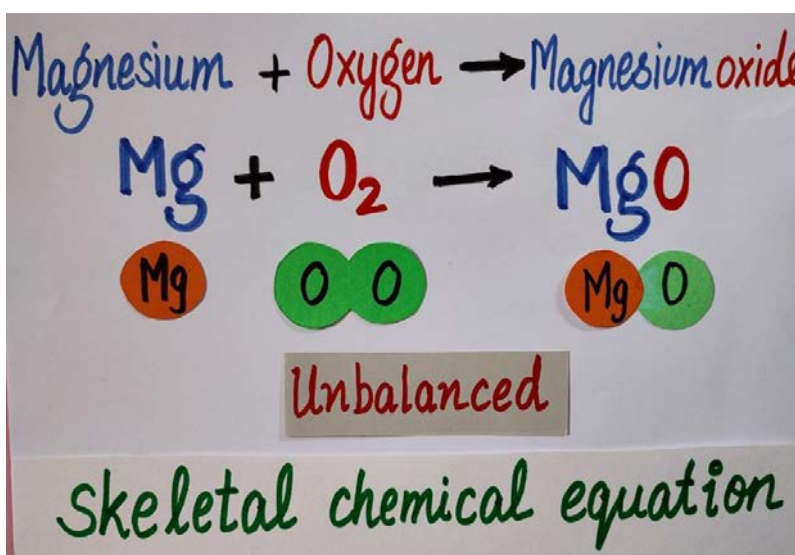


Figure 6

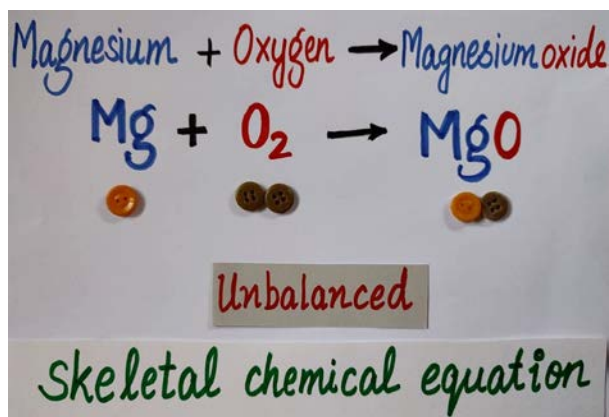


Figure 7

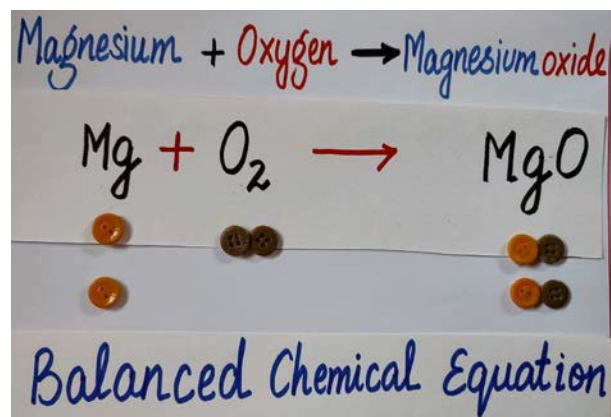


Figure 8

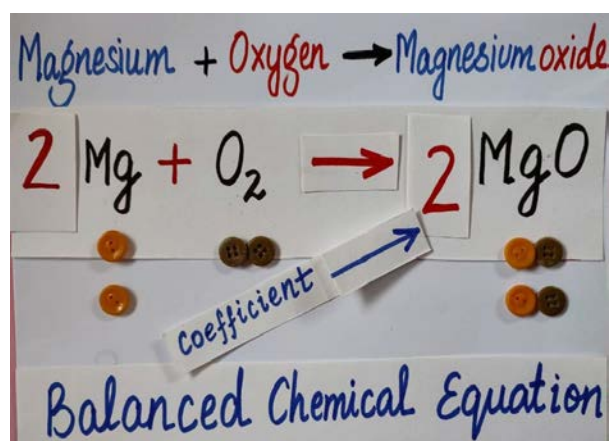


Figure 10

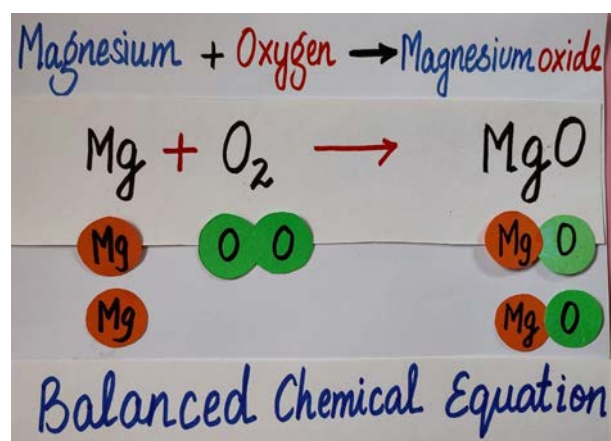


Figure 9

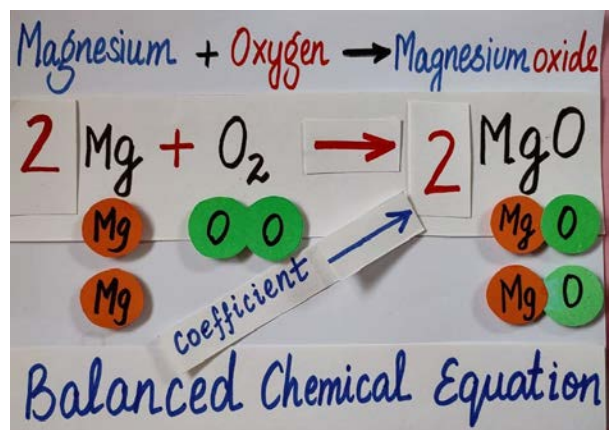


Figure 11

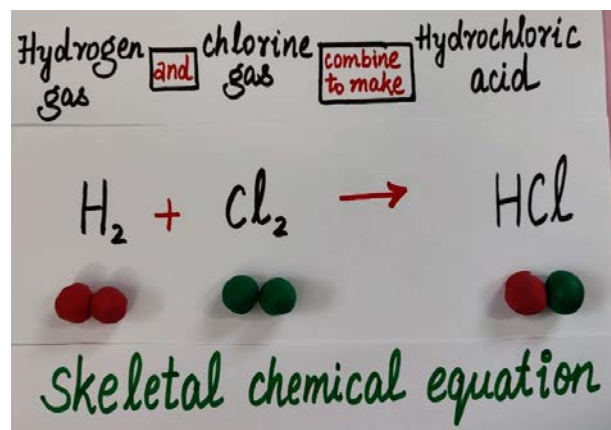


Figure 12

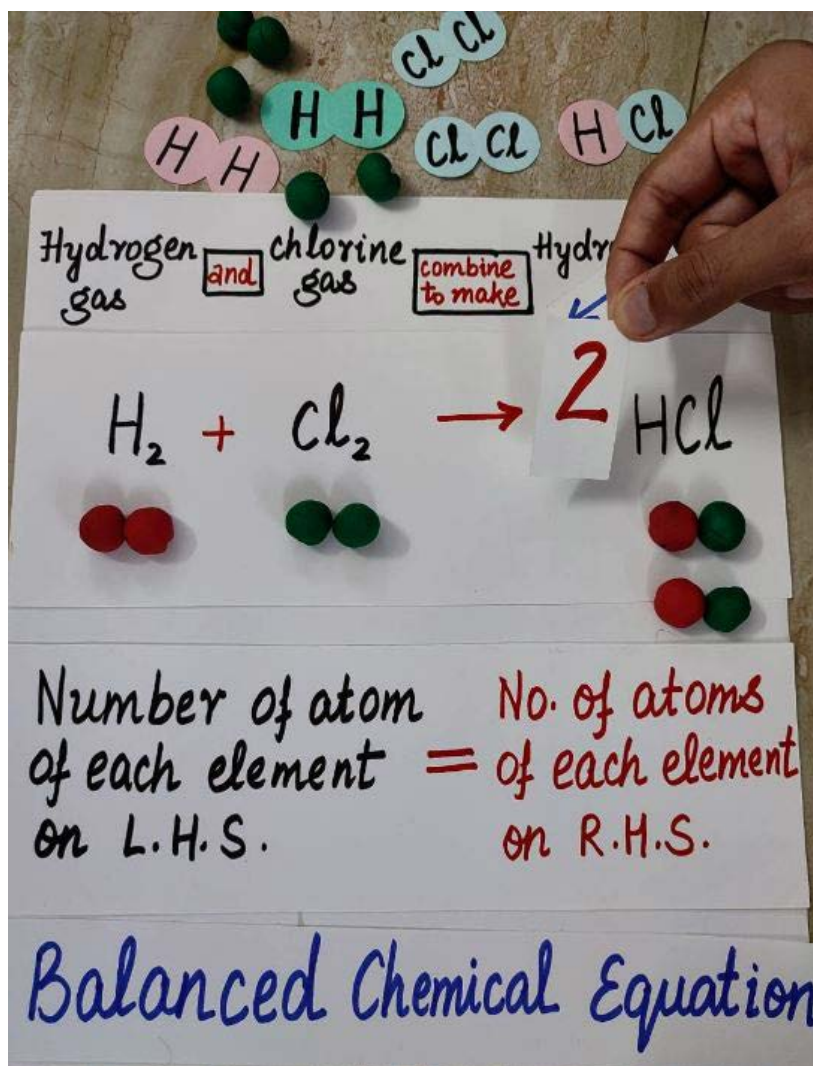


Figure 13

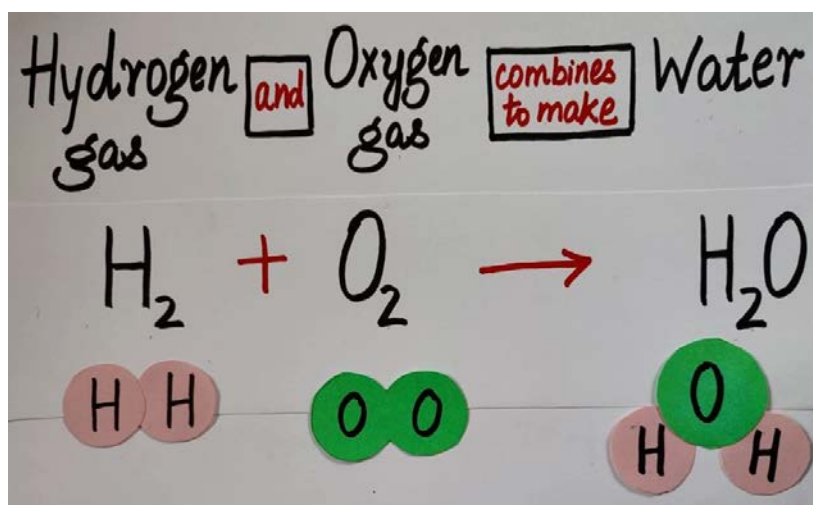


Figure 14

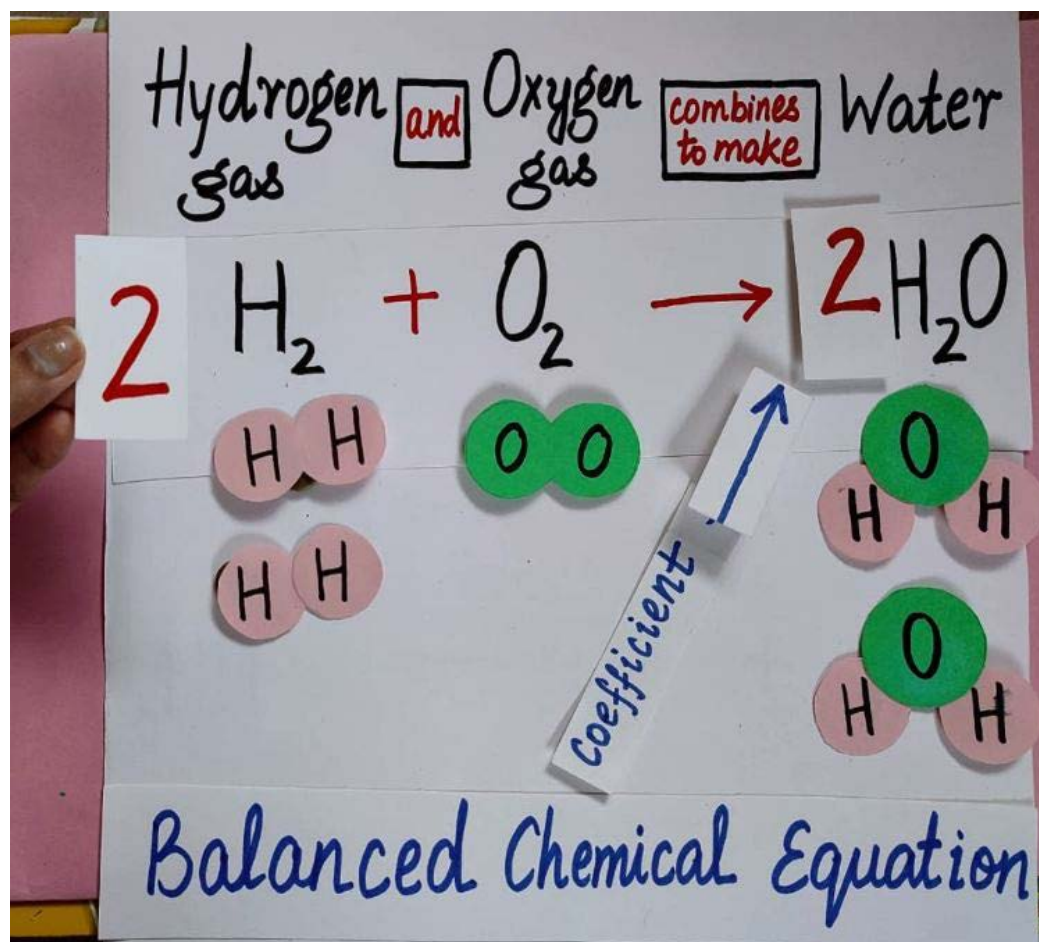


Figure 15

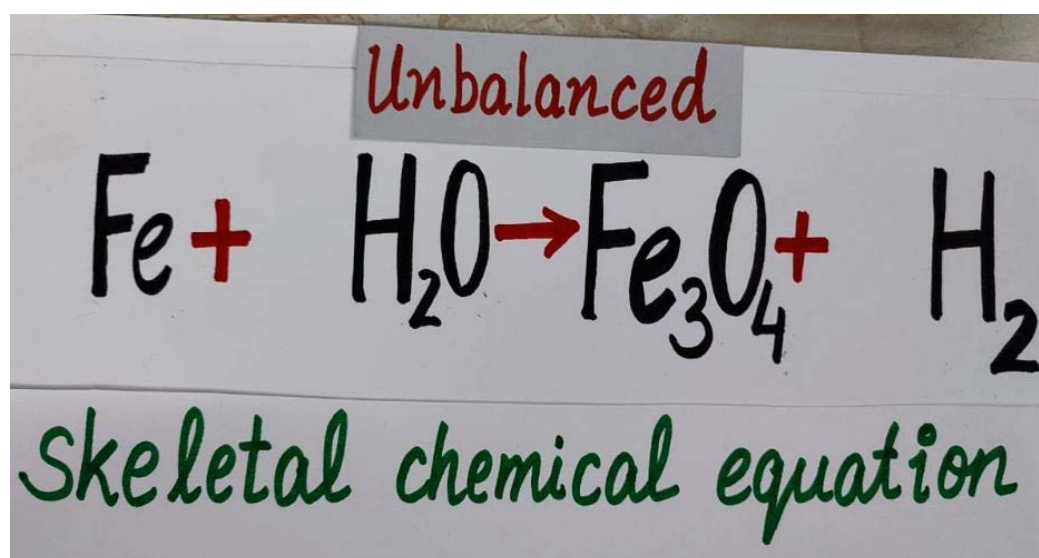


Figure 16

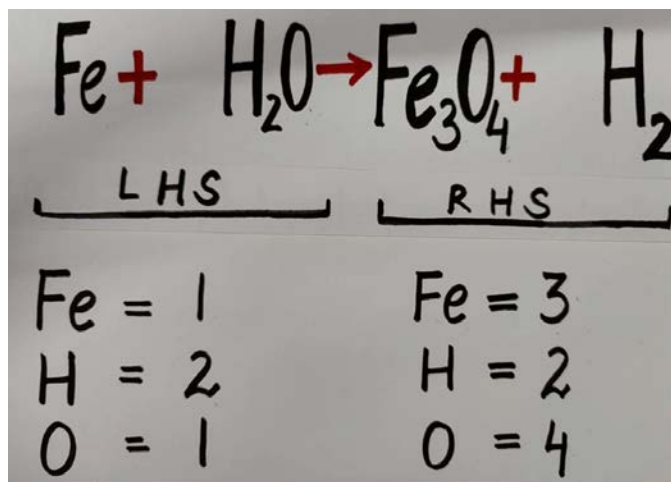


Figure 17

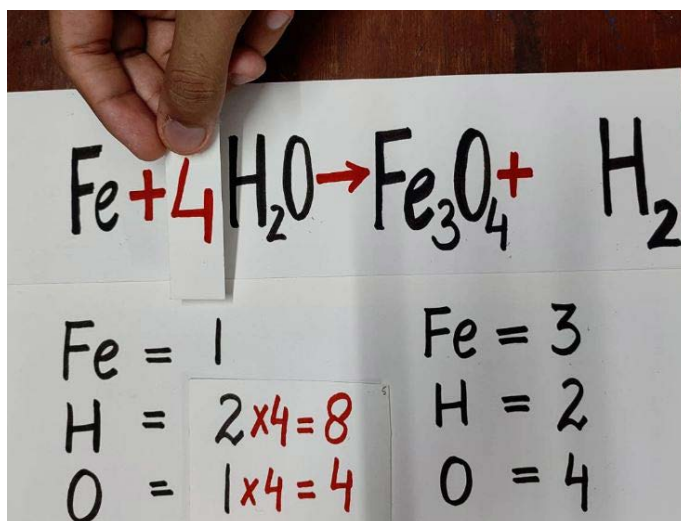


Figure 18

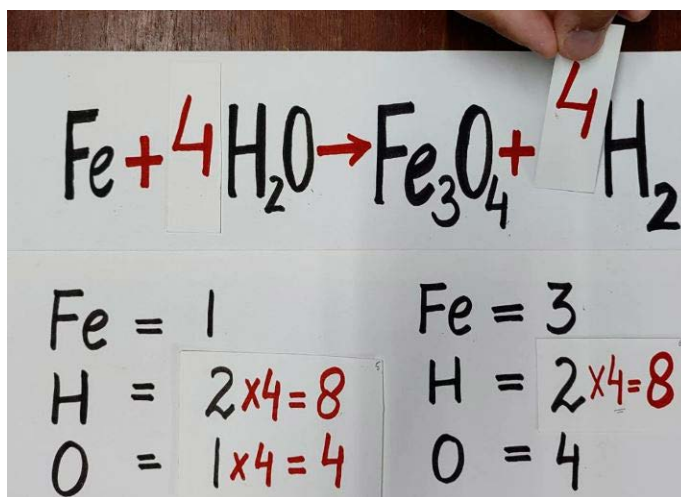


Figure 19

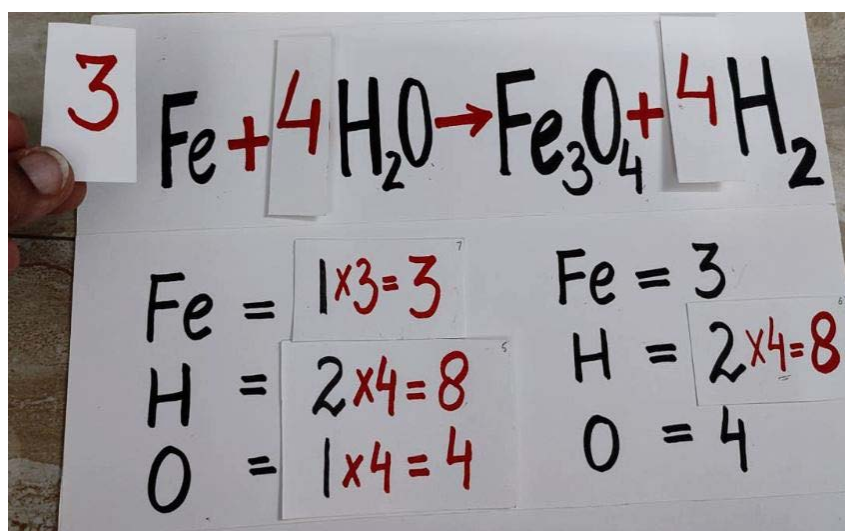


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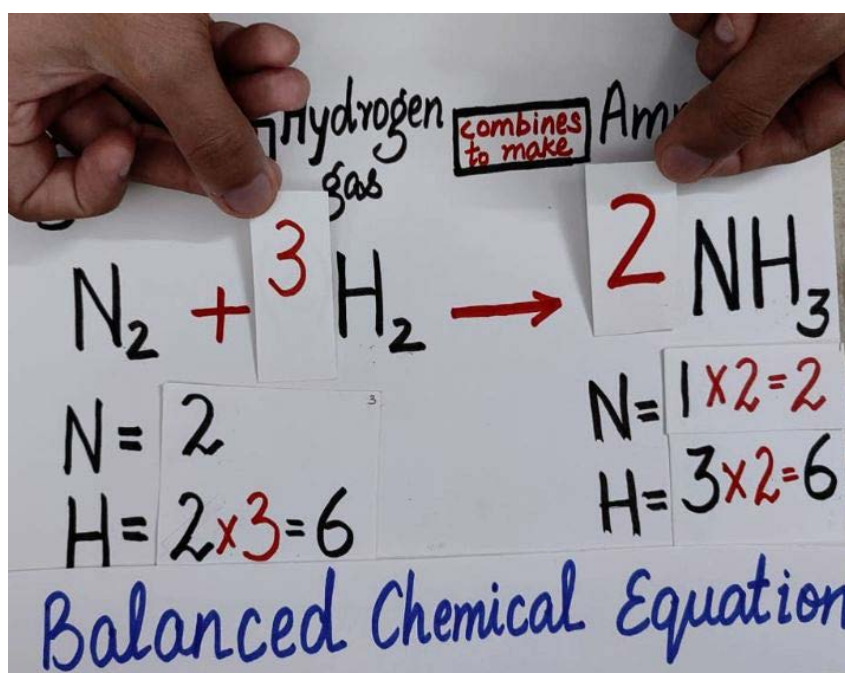


Figure 21

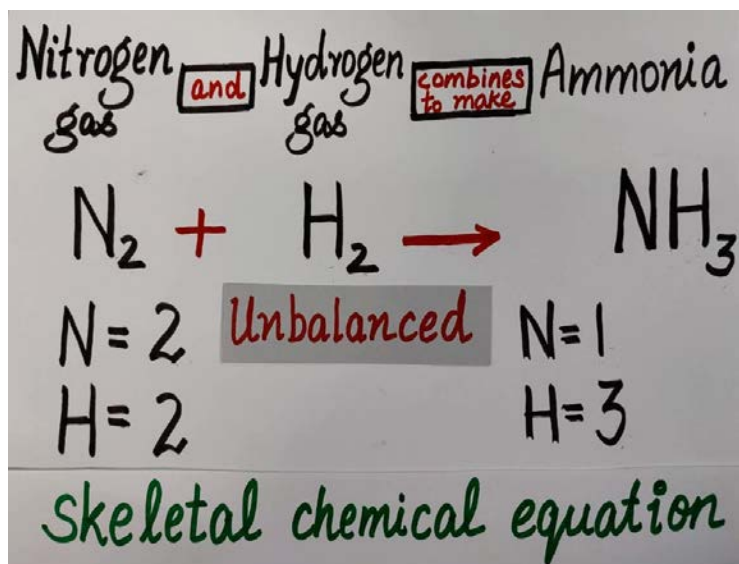


Figure 22

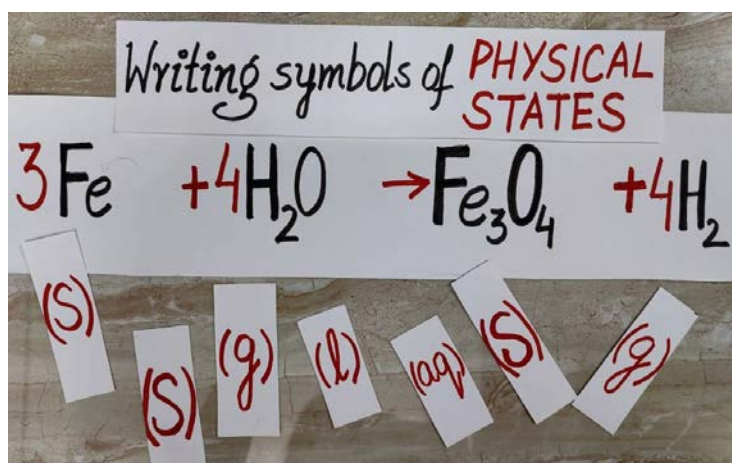


Figure 23

Annexure 1

Interview Questions (Al-kunifed, Ali Abdallah, 1993)

What is the significance of a chemical equation?

What is the role of arrow ($\rightarrow$) in a chemical equation?

How do you read the plus (+) signs on the left and on the right side of the chemical equation?

What is the difference between Coefficient and Sub-script ?

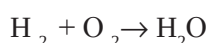
What is the need to balance a chemical equation?

Do you use chemical symbols or chemical formulas while writing a chemical equation?

What does a chemical symbol represent?

What does a chemical formula represent?

While balancing the following equation-



One student balanced it as $\text{H}_2 + \text{O}_2 \rightarrow \text{H}_2\text{O}_2$.

What is this correct way of Balancing a Chemical Equation.

What is the difference between the left and right sides of the chemical equation?

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—John Dewey (USA)

“Education means enabling the mind to find out that ultimate truth which emancipates us from the bondage of dust and gives us wealth not of things but of inner light, not of power but of love. It is a process of enlightenment. It is divine wealth. It helps in realization of truth.”

—Rabindra Nath Tagore (India)

“Education should aim at all round development of the child. It is in this way, the child will develop into a good citizen. The objective of education is the realization of a faithful, pure, inviolable and hence holy life.”

—Friedrich Frobel (Germany)

“The great aim of education is not knowledge, but action.”

—Herbert Spencer (England)

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