

A two-day National Conference on "Education for a Holistic Future: A NAAC Perspective" was held on 1st and 2nd February, 2024 at Women's Christian College, Chennai. This was an attempt to explore the current trends in the teaching-learning process in an institution and aligning the pedagogy with the various criteria defined by NAAC to bring about a holistic and sustainable academic environment.

Various papers on multidisciplinary aspects related to different methods involved in the teaching-learning process were presented at the conference and selected for publication in the book after scrutiny. The papers presented included research-based articles on topics related to Innovations in Curriculum, Skill Development and Employability, Mental and Emotional well-being, Physical and Extension Activities for a Holistic Development, Research and Development, Leadership and Management, Multidisciplinary Approach to Education, Industry-Academia Collaboration and Entrepreneurship, Infrastructure Facilities and Development in Institutions, and Institutional Vision, Values and Practices.

This book is thus an attempt to bring together various pedagogical approaches that are necessary for the growth of the college community. We hope that this book will be the way forward to enhance the NAAC defined multidisciplinary approach towards a holistic education.

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HOLISTIC PEDAGOGICAL APPROACHES



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**Research and Development Cell
Internal Quality Assurance Cell**

of

Women's Christian College, Chennai

An Autonomous Institution affiliated to the University of Madras
Re-accredited by NAAC in 2019 with Grade A+
College with Potential for Excellence



Holistic Pedagogical Approaches

RESEARCH AND DEVELOPMENT CELL
INTERNAL QUALITY ASSURANCE CELL
of
WOMEN'S CHRISTIAN COLLEGE, CHENNAI

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on
“EDUCATION FOR A HOLISTIC FUTURE: A NAAC
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Message

Education for a Holistic Future has been the dream of the founding societies of Women's Christian College as enshrined in the vision statement of the college. For more than a century women have been moulded by these principles as the college worked in every possible way to cater to contribution to society through integrity and leadership and accelerating knowledge growth.

The college has been providing a rich learning experience that provides a broad liberal arts foundation and deep subject-area expertise which is consolidated in the classroom and also through community engagement. This conference has provided us with a platform to discuss and debate with like-minded colleagues on how to keep being relevant in a changing society with the tenets put forward by NAAC. I am sure that the learning experience is going to be a vital component for enriching education in the years to come.

Date : 19.1.2024

Lilian Jasper
Principal

Acknowledgements

It is with a feeling of tremendous gratitude that we thank our Principal Dr. Lilian I. Jasper, College Management, and the Bursar for encouraging us to convene a National Conference and supporting us in every way possible, and especially towards providing us with financial support towards this Book publication. This Book titled Holistic Pedagogical Approaches is a compilation of articles based on research, outreach activities, systematic reviews and projects conducted by students, research scholars and faculty belonging to different disciplines. We would like to thank the participants who have presented their work at the conference, and translated this into a publication, which was included as Chapters in this Book. Our heartfelt gratitude is also due to the Resource Persons who have given their valuable time, ideas and a brief description of their presentation. We wish to thank Mr. Olivannan and Ms. Arsha of Emerald Publishers for the help rendered in publishing the book. Above all, we would like to thank God Almighty for the abundant grace bestowed on us.

THE EDITORIAL TEAM

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Introduction

The National Conference on “Education for a Holistic Future: A NAAC perspective” on February 1st and 2nd, 2024 was an attempt to explore the current trends in pedagogical approaches across all disciplines, and its impact on academic progress and the community at large. The growth of a nation is directly related to the holistic development of communities in the rural and urban areas. And for this to be a sustainable achievement, education is the key. In today’s scenario, it is important to focus on providing a learning environment for the overall well-being of the college community. The focus should be on integrating aspects related to social, physical, emotional, and ethical concerns of students and every single person in an Institution. These aspects are also emphasised by the National Accreditation and Assessment Council (NAAC), which investigates a holistic approach to education focussing on not just an improvement in the teaching-learning process, but also enhancing skills needed for employability in the future. Thus, keeping in mind the criteria defined by NAAC for bringing about a holistic development in the college community for a sustainable future, the Research and Development Cell and the Internal Quality Assurance Cell of the college jointly organized this Conference.

In the global context, holistic education is critical not just to maintain a sustainable academic environment, but also to translate knowledge into an impactful outcome for the betterment

of society. An environment focusing on good communication skills, critical thinking and creative innovation will help academic institutions cultivate a holistic perspective on acquiring knowledge, and provide the necessary platform for catering to changes in education and technology at the global level. With this in mind, the objectives of the conference included exploring a holistic approach to Academia bringing in a salubrious environment for the overall development of the entire college community.

The main themes of the conference included Innovations in Curriculum, Skill Development and Employability, Mental and Emotional well-being, Physical and Extension Activities for a Holistic Development, Research and Development, Leadership and Management, Multidisciplinary Approach to Education, Industry-Academia Collaboration and Entrepreneurship, Infrastructure Facilities and Development in Institutions, and Institutional Vision, Values and Practices. Many eminent resource persons from India were invited for this conference to deliberate on issues concerned with the focus areas. Student participation from across colleges in Chennai contributed to the success of this conference. Various papers on multidisciplinary aspects related to different methods involved in the teaching-learning process were presented at the conference and selected for publication in the book after scrutiny. The papers presented included research-based articles on topics related to the main themes of the conference.

This book is thus an attempt to bring together various pedagogical approaches that are necessary for the growth of the college community. This will not only pave the way for a healthy future in terms of emotional, social, financial and intellectual well-being, but also contribute to the Nation's economic growth.

A Brief Write-up from the Resource Persons

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Topic: "Research, Innovation, and Extension in Education for a Holistic Future"

Education is an essential part of one's preparation for the future. Providing opportunities for students is the responsibility of educators who are also preparing for their own future. What the future holds is not very clear to anyone and it is therefore quite difficult to prepare for it. Educators have a greater role to play as they can shape the future instead of merely preparing for it.

Research, Innovation, and Extension are consciously or sub-consciously happening in every area of our lives. Sometimes, we fail to recognise them and feel that they are not happening as they often evolve slowly. The pace at which it is happening and the area in which it is happening may not be the same for all institutions or departments within an institution. WCC, for example, is not what it was 50 or even 20 years ago. Some changes and development have been driven from the outside and some have come from within.

As an institution, what are the diverse opportunities for WCC and which of them should it choose? As this conference is from a NAAC perspective, the set of seven criteria chosen by NAAC to serve as the basis of its assessment procedures become your basis as well. For Autonomous Colleges, Research, Innovation, and Extension account for 150 points of the total 1000. Within that, Extensions Activities have the highest weight of 50 points and Research Publications and Awards come next with 30 points. Therefore, these are the areas on which WCC should focus on to get a high NAAC grade and the many advantages that come along with it. Having been through the NAAC process a few times, WCC should be able to accurately evaluate itself now and chart the way ahead. The talk will provide a few pointers and some encouragement to rise to new heights.

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Topic: "Towards a Holistic Education -- A NAAC Perspective"

Human beings are complex and composite wholes and, therefore, the education they receive should also be holistic. But, unfortunately, the kind of education that is imparted in most higher educational institutions is fragmented, with a preponderant focus on rationality with disciplinary boundaries rigidly configured. The emotional and spiritual dimensions are glossed over. In a sense, this is a fall-out of the Cartesian paradigm with its excessive emphasis on reason.

One of the seventeen SDGs adopted by all United Nations Member States in 2015 is SDG 4 titled "Ensure inclusive and

equitable quality education and promote lifelong learning opportunities for all". To achieve this goal, almost all countries have taken steps with different strategies to improve the quality of education, both school and collegiate education, with the aim of making education holistic so that it is meaningful and relevant to our times. A UNESCO document titled "A Holistic and Integrated Approach to Values Education for Human Development" points out that "Education must contribute to the all-round development of each individual – mind and body, intelligence, sensitivity, aesthetic sense, personal responsibility and spiritual values".

What is holistic education? Miller in *What are schools for: Holistic education in American culture* points out that "Holistic education is not to be defined as a particular method or technique; it must be seen as a paradigm, a set of basic assumptions and principles that can be applied in diverse ways". In other words, it is not yet another concept or theory, but a way of thinking and living—a *Weltanschauung*.

Miller in *The Holistic Curriculum* hints that the term 'holistic' "implies spirituality, or a sense of the sacred". Highlighting the relational dimension of holistic education, he remarks: "The focus of holistic education is on relationships: the relationship between linear thinking and intuition, the relationship between mind and body, the relationships among various domains of knowledge, the relationship between the individual and community, the relationship to the earth, and the relationship to our souls. In the holistic curriculum the student examines these relationships so that they gain both an awareness of them and the skills necessary to transform the relationships where appropriate".

Holistic education is three-dimensional. It aims to address the whole person who is a blend of body (physical), mind (intellectual),

heart (emotional) and soul (moral or ethical). Put differently, it includes the physical, cognitive, emotional, social, artistic/aesthetic, spiritual and moral dimensions of individuals. Secondly, it emphasises connectivity. It underlines the fact that all elements in the universe are somehow interconnected. Students should be helped to realize that connectedness catalyses learning, both academically and non-academically. Thirdly, holistic education is not an end in itself. It is a means to creating a better society marked by interconnectedness and, for a person who has received holistic education is other-centred and reaches out to not only his/her human counterparts but to non-humans as well.

In India, academic and accrediting bodies such as the UGC and NAAC, both directly and tangentially, have motivated and spurred higher educational institutions to adopt a holistic curriculum with the aim of shaping and developing the learner into a whole person—physically, intellectually, ethically, spiritually and relationally. While the UGC, a regulatory body, has a direct say on curriculum design, teaching-learning process, and evaluation procedures, NAAC, an assessment and accrediting agency, can only indirectly suggest academic reforms.

A close look at the seven criteria of NAAC clarifies beyond doubt that NAAC wants higher educational institutions to impart a holistic education to create a better tomorrow. NAAC explicitly suggests that the curriculum should be multidisciplinary and NEP 2020 too points out that higher education should transcend disciplinary silos and become multidisciplinary. NAAC calls for cross-cutting research which is inherently multidisciplinary. It underlines experiential learning and technology-assisted teaching-learning. Additionally, it motivates students to be multicultural and

clarifies that the ethos of higher educational institutions should be inclusive and pluralistic. By assigning a key role to mentoring, NAAC postulates that students should grow not only physically and intellectually but also emotionally and morally. It also insists that students learn to sustain the precarious ecosystem and be sensitive to gender, regional and linguistic differences and learn to appreciate diversity. In other words, NAAC strives to promote a holistic education to ensure that students become well-rounded individuals who will reach out to the disadvantaged sections through extension and outreach activities and work for and along with them to create an equitable world.

As academics, we need to ensure that our curriculum is holistic in the sense that it is inter- and multidisciplinary with a good grounding in humanities, especially philosophy, both Eastern and Western. The curriculum should enable students to connect linear, rational thinking with intuitive thinking, the mind with the heart and the hand, and humans with non-humans. A curriculum that is multidisciplinary, research with a human dimension, mentoring, extension and outreach activities organized throughout the year, compulsory sports and yoga sessions and core papers on Professional Ethics and Environment Sustainability will transform students into well-rounded individuals.

Gandhi's views on holistic education are profound. He declared: "I hold that true education of the intellect can only come through a proper exercise and training of the bodily organs, e.g., hands, feet, eyes, ears, nose, etc. In other words, an intelligent use of the bodily organs in a child provides the best and quickest way of developing his intellect. But unless the development of the mind and body goes hand in hand with a corresponding awakening of

the soul, the former alone would prove to be a poor lopsided affair. By spiritual training I mean education of the heart. A proper and all-round development of the mind, therefore, can take place only when it proceeds *pari passu* with the education of the physical and spiritual faculties of the child. They constitute an indivisible whole. According to this theory, therefore, it would be a gross fallacy to suppose that they can be developed piecemeal or independently of one another”.

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Topic: Achieving Sustainable Development Goals – Role of Educational Institutions

Awareness on Sustainable Development Goals among the current and future generations are critical to ensure the sustainability of earth and its resources. Educational institutions can play a major role by demonstrating sustainable practices and governance in their campuses. College campuses play a significant role in sustainable development cities due to the huge amounts of land and human resources consumed on campuses. A healthy competition among institutions can facilitate and motivate several measures to be adopted towards sustainability in colleges. Several good examples of sustainability are reported. A comprehensive index to quantify and compare performances of colleges has been used. However, gaps exist within the currently existing Campus Sustainability Assessment Tools (CSAT) that have been developed. 15 dimensions that govern the design of sustainable campuses,

and the most predominant dimensions were environmental, educational and governance dimensions.

Several parameters such as water, waste, energy, buildings transport are included in the environmental dimension. The courses offered and research undertaken in sustainability are categorised in educational domain and diversity, inclusivity , financial sustainability are included in governance. Promoting science of the environment, society and entrepreneurship are key to educate the students, policy makers and society in sustainable development goals . Women have played and are playing significant roles in implementing sustainability for several corporates. Institutions should serve as training grounds to nurture the inherent passion towards sustainability in women and make campuses, homes and working places best examples to emulate.

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Topic: “Innovative Teaching and Learning Strategies and Tools to enhance Quality of Learning in Higher Education”

The National Assessment and Accreditation Council (NAAC) is an autonomous institution established by the UGC with the prime agenda of assessing and accrediting institutions of higher learning with all objectives of helping them to work continuously to enhance the quality on higher education. The mandate of NAAC as reflected in its vision statement is in making quality assurance an integral part of the functioning of Higher Education Institutions (HEIs). Since its inception, the NAAC has been working towards improving the quality of higher education in

India. For the couple of the years NAAC has incorporated “Institutional preparedness for NEP 2020” in the Self Study Report of the HEIs.

National Education Policy of India (NEP) 2020 is crafted to provide Holistic, Student-Centric, Flexible and Multidisciplinary Education. The new education policy came up with an aim to provide a quality education system to all students, irrespective of their place of residence with particular focus on historically marginalized, disadvantaged, and underrepresented groups. Education should have equality, accessibility, affordability, accountability, and reachability among all. Owing to that NEP is promoting distance education/online education and online courses along with other reforms. This is very much demanded as over the next decade, India would have the highest population of young people in the world, more than 50% below the age of 35 years aspiring for high-quality education. To meet the challenges with limited higher educational institutions, resources, etc., digital transformation of higher education is necessary and here to stay. “A digital campus is the need of the hour”. Moreover, Digital India is the 21st century’s slogan of India’s strength.

The COVID-19 pandemic has brought significant changes to the education system. Digital transformation was already taking place in the higher education sector before Covid-19 hit, but the pandemic has rushed up the process significantly. Online learning has changed not just where students learn, but how. Faculty members need to keep up with students’ interests and how they want to be taught. Moreover, learned people said that “Teachers are the pillars of the successful implementation of NEP 2020”.

The biggest challenge for any teacher is grabbing each student's attention and transferring ideas effectively to create a long-lasting impression whether it is virtual or offline class. To undertake the challenge of a virtual class where eye-contact is lacking, the teacher needs to implement innovative ideas that make the learning experience much more interesting for the students. For this purpose, innovative teaching and learning strategies and tools are very much required and helpful. Each teacher needs to explore these strategies in this digital era for effective learning to happen through involvement of all students to be attentive, enthusiastic, and collaborative to gain the required skills. Hence, I am putting an effort here to present various teaching and learning strategies and tools which improves and promote the teachers' effort to enhance the quality of learning in higher education.

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Topic: "Psychological factors related to Academic success and Psychological well-being"

Psychological factors related to academic success and well-being in higher education are a multidimensional construct. Researchers in the field of psychology agree that attending college / university can be very stressful for students especially when they have to go through the process of adapting and adjusting to new educational and social environments, mingling with new and different friends from diverse backgrounds and experiences holding different

cultural values and norms, high self-expectations and new modes of conversation, in addition to coping with academic demands (Chen, et. al., 2013). Students need support in developing attitudes and behaviours that will optimise their learning experience and outcomes.

Higher education in India

According to the All-India Survey on Higher Education (AISHE) 2020-21 report, the Gross Enrolment Ratio (GER) in higher education in India was 27.1 percent. The GER for male students was 29.3 percent, and for female students, it was 24.9 percent. The highest GER was recorded in Tamil Nadu (49.3 percent), and the lowest GER was recorded in Bihar (14.9 percent). The report also stated that out of the total enrolment in higher education, 51.6 percent of students were enrolled in undergraduate programs, 26.2 percent in postgraduate programs, and 22.2 percent in Ph.D. programs. There are 51,649 higher education institutions in India, with a total enrolment of 40.15 million students and 15.12 million teachers.

Considering the large numbers of people engaged in the process of higher education, namely, academicians, counsellors, mentors and the students themselves, clarity is required about the significance of personality characteristics being the predictors and determinants of academic success and psychological wellbeing.

Definition of Psychological Well-being

From the components of academic success as explained in self-determination theory (Deci & Ryan, 2008), students have inherent motivation to absorb, explore autonomously and

without hindrances. They also seek to master their surroundings as they relate with others maintaining positive self-esteem and psychological competence. Personality traits play key roles in ensuring perseverance in students, personal well-being and motivation to succeed and achieve their goals.

- Psychological well-being can be defined as the individual's feeling of **happiness** and satisfaction with self-activities and accomplishments, by meeting the daily demands and having a **personal sense of meaning** (Diener, 1984; Keyes, 2006).
- Psychological wellbeing is the process of **positive assessment** of the individual's life and personal history, and the feeling of **constant personal growth and development**, that is built on a quality of relationship with others which are underscored by the individual **innate abilities**. (Ryff, & Keyes, 1995).

Challenges in higher education

Pursuing a program in higher education can be challenging for students especially as they perceive the limitation of the resources available to them. If these stresses are not identified and resolved, it could have a domino effect on their academic success, interpersonal relationships and well-being resulting in long-term negative outcomes.

- Dropout is a negative outcome that has been documented. According to the National University of Educational Planning and Administration (NUEPA), the dropout rate for higher education in India is 25% (2023). They identified reasons such as financial constraints, lack of academic preparation, personal problems, and lack of support from family, friends and teachers.

- Under achievement among students is another negative outcome (Nwosu et al., 2017).

Challenges faced by students

The difficulties faced by the individual student would be a unique combination of personality characteristics, situational demands, interpersonal supports, academic and emotional skills and financial support. Dealing with these issues would help the student enjoy a sense of psychological well-being.

Psychological factors associated with academic success and well-being

1. Personality factors
2. Mental toughness
3. Perfectionism
4. Academic qualities and skills
5. Teacher qualities

1. *Personality factors*

The Five Factor Personality Model (Costa & McCrae, 1992) has been widely used to study how personality factors influence academic outcomes. Osamika et al (2021) reported that there was a significant positive relationship between agreeableness, conscientiousness, openness to experience and psychological well-being; further, academic success was significantly positively associated with agreeableness, conscientiousness, and openness to experience and negatively associated with personality. Similar findings have been reported by Anglim et al., (2020) and Steel, et al. (2019).

2. *Mental toughness*

The attributes of mental toughness can be summarized as following: unshakeable confidence in one's own abilities; internalized motives to succeed and capability to focus on one's personal life, capability to recover from performance setbacks and sufficient mental control. (Li, 2022). Mental toughness refers to an attitude that allows a person to recover and grow despite trials or hardships (Jones, Hanton, & Connaughton, 2002). Linet al. (2017) demonstrated a positive correlation between MT and academic performance in higher education.

3. *Perfectionism*

Perfectionism presupposes that one must do better, in which case, perfectionism will inevitably affect people's long-term development and may lead to people not being able to change or improve themselves if they are under stress. A perfectionist sets goals that are often too high or unrealistic and then must make relentless efforts to meet those standards and measure self-worth independently, leading to self-criticism when standards are not met (Osenk, Williamson, & Wade, 2020).

4. *Academic qualities and skills*

A host of qualities and skills are required for positive outcomes in a learner's life. They may be summarized into three categories.

Personal skills	Interpersonal skills	Cognitive skills
Responsibility	Assertiveness	Critical thinking
Self-management	Communication	Technological skills
Tolerance for ambiguity	Collaboration	Study skills
Ease with diversity	Listening	Creative thinking
Personal goal-setting	Emotional perceptiveness	Ability to follow instruction
Independent work skills	Boundary setting	Being focused and involved

5. *Teacher characteristics for well-being and effectiveness*

Psychological characteristics in teaching encapsulate a complex set of motivations, emotions, cognitions, patterns of self-regulation, and personality aspects. Psychological qualities can impact 4 outcomes in the process of education.

- The first outcome is **teacher effectiveness**, which is commonly defined as teachers' performance in terms of effects on student learning.
- The second outcome is **teachers' well-being** which will decrease the high incidence of stress-related illnesses in the teachers' professional lives.
- The third outcome would be to decrease high teacher attrition rates (Borman & Dowling, 2008) and sustain **teacher retention and commitment**.
- The fourth outcome is the building and sustaining of high-quality **relationships** between teachers and key people in the educational context - students, administrators, parents, colleagues, and mentors (Roorda et al., 2011).

Eight psychological teacher characteristics that impact effectiveness and well-being (Bardach, Klassen & Perry, 2021) are:

Self-efficacy	Emotional intelligence
Causal attributions	Emotional labour
Teacher expectations	Enthusiasm
Personality	Mindfulness

Implications

The psychologic factors which have been highlighted have implications for teaching-learning practice. Connecting links have

been made between personality, mental toughness, academic skills, on the one hand, and academic success and well-being on the other. It is important to analyse, both generally and specifically, various factors that can influence students' performance. Interventions to develop the personality traits and hone academic skills could be offered to students. Teachers could suggest meaningful and authentic tasks in which students will see utility for future profession. Teachers could enhance their professional skills and well-being by engaging in self-care practices.

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Mr. Jayan Narayanan

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Founder – Toss the Coin

Topic: “Unleashing the Power of Creativity in the Workplace”

In the fast-paced and ever-evolving landscape of the professional world, one skill has become increasingly vital – creativity. Gone are the days when a rigid and linear approach to problem-solving was good enough. Today, organizations thrive on innovation, adaptability, and fresh ideas. For those who are just starting their career, understanding the importance of creativity in the workplace is not just an advantage; it's a necessity. Let's delve into the significance of creativity in an organization and the practical tips on how to foster and practice creativity at work.

The Significance of Creativity in the Workplace

1. Innovation and Adaptability:

Creativity is the driving force behind innovation. In a rapidly changing business environment, companies need to constantly evolve to stay competitive. Creative individuals bring fresh perspectives and innovative ideas to the table, helping organizations adapt to new challenges and seize opportunities. So, a “what next” attitude rather than a “this will do” attitude is imperative.

2. Creative Problem-Solving:

Creativity is an essential tool in problem-solving. Finding a just another solution to a problem doesn't suffice. The ability to think outside the box and approach challenges from different angles is crucial for overcoming obstacles. Individuals who can think creatively are better equipped to find inventive solutions to

complex problems, contributing significantly to the success of their teams and organizations.

3. Employee Engagement:

Creativity fosters a positive and engaging work environment. When employees are encouraged to express their creativity, they feel a sense of empowerment and ownership in their work. This, in turn, leads to increased job satisfaction and employee retention, creating a win-win situation for both the employees and the organization.

4. Competitive Edge:

In today's competitive job market, standing out is imperative. Demonstrating creativity in the workplace sets individuals apart. Employers value employees who can think creatively, as they bring a unique and valuable skill set to the team. The ability to contribute innovative ideas gives individuals a competitive edge in their careers.

How can organisations foster Creativity at Work

1. Embrace a Growth Mindset:

Cultivating a growth mindset is the first step towards fostering creativity. Understand that creativity is not a fixed trait but a skill that can be developed over time. Embrace challenges as opportunities to learn and grow, and encourage your peers to adopt the same mindset. There are a whole lot of brain activities on the internet to get started with. Make it a habit to do these creative tasks every week.

2. Diverse Perspectives:

Creativity thrives in diverse environments. Actively seek out diverse perspectives and opinions within your team. Different backgrounds and experiences bring a variety of ideas to the table, sparking creativity and fostering a culture of inclusion. Inclusivity is the key irrespective of what functions people belong to. Just encourage the habit of asking for thoughts!

3. Encourage Risk-Taking:

Creativity often involves taking risks. Encourage a culture where individuals feel safe to take calculated risks without fear of harsh consequences. This can lead to ground-breaking ideas and initiatives that might not have been explored in a more risk-averse environment.

4. Provide Learning Opportunities:

Continuous learning is essential for nurturing creativity. Encourage team members to attend workshops, conferences, and training sessions relevant to their field. Exposure to new ideas and perspectives will stimulate creativity and provide a fresh outlook on problem-solving.

5. Create a Creative Physical Environment:

The physical workspace plays a significant role in fostering creativity. Consider incorporating collaborative spaces, relaxation areas, and colourful elements in the office. These changes can positively impact the mood and mindset of employees, making the workplace a more conducive environment for creative thinking.

6. Promote Open Communication:

Create an open and transparent communication culture within the organization. Encourage team members to share their thoughts and ideas freely. Constructive feedback and open discussions can lead to the refinement and improvement of creative concepts.

7. Allocate Time for Creativity:

In the hustle and bustle of daily tasks, it's easy to prioritize efficiency over creativity. However, allocating dedicated time for creative thinking can yield significant results. Schedule brainstorming sessions or creative workshops to give team members the time and space to explore new ideas.

8. Cultivate a Supportive Leadership Style:

Leaders play a crucial role in fostering creativity within a team. Adopt a leadership style that encourages autonomy, values creativity, and provides support. When employees feel supported and empowered, they are more likely to unleash their creative potential.

In a world where change is the only constant, the ability to think creatively is a valuable asset. For young employees, understanding the importance of creativity in the workplace is not just a professional advantage but a personal growth opportunity. By embracing creativity, individuals can contribute to their organization's success while enhancing their own skills and marketability. A clear roadmap helps to cultivate creativity at work, empower the younger generation to thrive in the dynamic and innovative workplaces of the future.

Dr. K. Niraimathi Anand

Director of Research Agency
Fenivi Research Solutions, Chennai

Topic: “Psychological factors related to Academic success and Psychological well-being”

The session will deal with the transformative journey from acquiring theoretical knowledge to actively applying it in real-world contexts. Participants will gain insights into the importance of bridging the gap between academia and practicality, emphasizing the impact of turning knowledge into action. This presentation aims to inspire participants to view their education as a dynamic tool for change, encouraging them to actively engage with their learning and translate knowledge into meaningful actions that contribute to personal and societal advancement.

The key points will include the following:

- Rethinking Learning Paradigms
- Practical Application in Real-world scenario
- Experiential Learning Opportunities
- Building Critical Thinking Skills
- Problem-Solving
- Case Studies of Success
- Cultivating a Culture of Action
- Technology and Innovation in Action
- The Role of Mentorship
- Preparing for a Purposeful Future

Ms. Sheba Devraj

Founder and Coach
Creed Strength and Conditioning Studio,
Chennai

Topic: “Fitness for a Quality Life”

Addressing the topic “fitness for a quality life”, this is predominantly the need of the hour. Post-COVID there is an increased awareness on the need to adhere to fitness as a part of life. While some are starting at where they are, others are still sceptical. I’ll be discussing on what exactly fitness means and how it’ll improve your overall quality of life.

The earlier you start, the better it is, especially for women. As students, it’s critical for you to include fitness as part of your day, to manage both your physical and mental health.

Ms. Deepa Muthukumarasamy Founder and CEO- Some More Foods Private Limited, Tirupur

Topic: “From Classroom to CEO: How My Education Paved the Way for Some More Foods”

Hi, I’m Deepa Muthukumarasamy, the proud Founder and CEO of Some More Foods Private Limited. My journey into entrepreneurship was ignited after completing my post-graduation in Foods and Nutrition from Women's Christian College, Chennai. When I became a mom, introducing weaning foods to my son uncovered a concerning trend in the market – an inundation of highly processed, preservative-laden baby foods. Recognizing a gap between the nutritional needs of infants and the available products, I decided to take matters into my own hands. My education in Foods and Nutrition became the cornerstone of my entrepreneurial venture.

In 2013, I founded Some More Foods as a proprietary firm, focusing on crafting nutritious baby food formulations. My academic background not only equipped me with the knowledge to create these formulations but also empowered me to collaborate with friends who were nutritionists in renowned hospitals. Together, we fine-tuned our products based on valuable customer feedback.

As an entrepreneur, my education provided the foundation for understanding the intricacies of nutrition and formulating products that cater to the genuine needs of consumers. It wasn't just about creating a product; it was about filling a void in the market with something wholesome and beneficial for infants.

The next crucial step in my entrepreneurial journey was navigating the go-to-market strategy. Education instilled good communication skills in me, allowing me to meet professionals like paediatricians to validate the products. After testing the products with young mothers, they appreciated our formulations, becoming our initial paying customers. We launched the brand **Some More**, starting with our first product, Complete Health Mix. Encouraged by positive feedback, we expanded our product portfolio and introduced an exclusive weaning food brand called **First Spoon**. We now offer millet-based value-added products for all ages under the brand **Some More**.

In our student days, teamwork was crucial for project success, and the same principle applies to the entrepreneurial journey. As we tapped new markets, the skills acquired in managing a team helped me navigate the challenges of scaling by bringing in people with the right skillsets.

Most importantly, education equips one with leadership qualities, aiding in making crucial decisions as the enterprise

scales. Overall, education is crucial for personal and professional development. Fostering a culture of innovation, education prepares students for the uncertainties in the entrepreneurial journey, cultivating risk-taking abilities and overcoming challenges with acquired skillsets to seize opportunities in the market.

Promoting entrepreneurship in educational institutions through Entrepreneur Development Cells is a welcoming move. Students receive support like incubation, mentorship, and funding even at the idea stage, nurturing their creativity and critical thinking. This hands-on learning experience, coupled with access to modern tools, enables aspiring entrepreneurs to thrive and contribute to the economic development of the country.



Research and Development



Effective Communication Skills to Enhance Nutrition Knowledge on Fermented Foods among Female College Students

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Abstract

Introduction: *Effective communication skills are pivotal in the realm of nutrition education for conveying complex dietary information to diverse audiences. The objective of this study was to understand the importance of effective communication skills in enhancing nutrition knowledge pertaining to fermented foods among female college students.* **Methodology:** *An experimental research design with pre-test- post-test questionnaire was used to assess the nutrition knowledge of 77 students, who were selected based on convenience sampling technique from the Department of Home Science, Women's Christian College, Chennai. Communication tools such as PowerPoint, interactive discussion and lecture methods were incorporated in delivering the information.* **Findings:** *Based on the results, the participants' scores on overall knowledge related to fermented foods was found to be significantly ($p < 0.001$) higher after the conduct of the education program.* **Conclusion and Recommendation:** *Effective communication skills using lecture methods along with audio-visual aids was found*

to have a better impact on the participants' responses, and therefore, it is an important education tool to transfer knowledge into practice. Since this study also showed a significant improvement in knowledge pertaining to fermented foods, incorporating this in the daily diet will have a better impact on positive health outcomes.

Keywords: *Nutrition education program, Communication skills, Fermented foods*

Introduction

Increasing prevalence of non-communicable diseases among young adults worldwide is a growing concern. Failing to implement early interventions may lead to significant and enduring public health and economic burdens (O'Hearn et al., 2022). Transition from schools to colleges normally results in a lifestyle shift characterized by minimal physical activity, unhealthy dietary habits such as skipping meals, increased consumption of processed and ultra-processed foods and low intake of vegetables, as indicated by studies (Cuberos et al., 2017; Winpenny et al., 2018; Romero-Blanco et al., 2020). Specifically, students residing away from their parental homes exhibit a higher inclination towards poor-quality diets, marked by an elevated intake of fast foods (Barbara and Ferreira-Pego, 2020).

Moreover, the college population represents a vulnerable age group, as the transition to college life is a pivotal period for these young adults. They face a high perceived stress burden, which significantly impacts their psychological well-being (Tosevski, Milovancevic and Gajic, 2010). Consequently, they constitute a crucial target demographic for promoting healthy lifestyles to mitigate the risk of developing chronic non-communicable

diseases in adulthood (Lopez-Moreno et al., 2021). The suboptimal lifestyle associated with college life can negatively affect various nutritional factors (Navarro-Prado et al., 2018). Previous research studies have demonstrated the efficacy of nutrition education interventions among college students in fostering healthy eating habits (Shahril et al., 2013; Yolcuoglu and Kiziltan, 2021).

Effective communication skills are essential for nutrition professionals to translate science based facts into practical applications in the community. Numerous studies underscore the significance of communication skills in nutrition education. For instance, research by Persoskie and Nelson (2017) emphasizes that tailoring communication strategies to the specific needs and literacy levels of the audience enhances the efficacy of nutrition interventions. Additionally, the work of Contento et al. (2015) highlights that effective communication fosters positive behavioural changes by empowering individuals with the knowledge to make informed and healthier food choices.

Unhealthy dietary pattern is a cause of concern amongst young adults, leading to malnutrition related problems such as overweight, nutritional deficiencies and reproductive problems. To address these issues, healthy food options in the diet should be promoted from a young age. Fermented foods can be one of the healthy dietary choices that could be promoted among college students to help maintain better nutritional status. Various studies have highlighted the association between weight management and intake of fermented dairy products (Mozaffarian et al., 2011). Additionally, there is evidence suggesting a reduced risk of cardiovascular disease, type 2 diabetes, and mortality linked to yogurt consumption (Tapsell, 2015; Eussen et al., 2016). Furthermore, the consumption of fermented milk has been

associated with improved glucose metabolism and diminished muscle soreness following acute resistance exercise (Iwasa et al., 2013). Consumption of kimchi has been correlated with anti-diabetic and anti-obesity effects, and the intake of various fermented foods has been linked to mood and brain activity alterations, as well as changes in the gut microbiome (Han et al., 2015; Hilimire, DeVlyder and Forestell, 2015; Taylor et al., 2020). Fermented rice (Pazhayadhu) which is a traditional drink in many parts of India has also shown many health benefits (Ray et al., 2016). Nonetheless, existing reports have highlighted insufficient clinical trials, variations in the types of fermented foods under investigation, and inconsistencies among ethnic groups. These findings emphasize the need for additional studies to validate the potential benefits of consuming fermented foods (Sivamaruthi, Kesika and Chaiyasut, 2018). Therefore, this study aimed at understanding the importance of a nutrition education program using effective communication tools in disseminating knowledge among female college students, with specific emphasis on fermented foods.

Methodology

An experimental research design with pre-test- post-test questionnaire was used to assess the nutrition knowledge of 77 female students aged 18 to 25 years, who were selected based on convenience sampling technique from the Department of Home Science, Women's Christian College, Chennai. Of the 77 participants, 51 (66.23 %) were undergraduate students and 26 (33.87 %) were postgraduate students from the Department of Home Science. This study was approved by the Institutional Ethics Committee and registered under the Clinical Trials Registry of India (CTRI/2023/04/051510).

The nutrition education program was framed for a duration of one hour which included the following contents:

1. Importance of healthy Gut Microbiome, and Determinants
2. Health benefits of fermented foods, Microorganisms responsible in fermentation process
3. Importance of Probiotics in the diet
4. Difference between Fermented Foods & Probiotics
5. Emphasis on Indian Fermented Foods

Communication tools such as PowerPoint, interactive discussion and lecture methods were incorporated in delivering the information. A questionnaire on Knowledge related to fermented foods was given to the participants before the conduct of the education program. The program was scheduled for an hour, followed by a 'Question and Answer' session. One month after the conduct of the program, the same questionnaire was given to the participants to test the knowledge gained from the program. Pre-test and post-test scores were statistically tested using Student's Paired t-test.

Results and Discussion

Seventy-seven participants completed the pre and post-test assessment. Table 1 indicates the difference in the knowledge scores related to fermented foods before and after the conduct of the nutrition education program.

Table 1: Difference in Knowledge Scores before and after the Nutrition Education Program

Questionnaire	Mean \pm SD (n=77)	't' value	Level of Significance
Pre-test	15.80 \pm 14.75	1.99	0.000*
Post-test	1.78 0.43		

*($p < 0.001$)

From the above table, it is evident that the nutrition education program had a significant ($p < 0.001$) impact in increasing the knowledge of the participants related to fermented foods. Similar studies conducted by Gibbs and Chapman (2017) and Lai et al. (2019) which focussed on enhancing nutrition knowledge of the student communities in Australia and United Kingdom respectively, also indicated an improvement in the knowledge gained. They reported that the use of audio-visual aids helped retain most of the information conveyed in the education program, which had resulted in an improvement in the post-test scores.

Conclusion

Effective communication skills using lecture methods along with audio-visual aids was found to have a better impact on the participants' responses. Since this study also showed a significant ($p < 0.001$) improvement in knowledge pertaining to fermented foods, incorporating this in the daily diet will have a better impact on positive health outcomes. Despite transitions in lifestyle choices from school to college among young adults, nutrition education programs can be an effective platform to create awareness on healthy choices for positive health outcomes in the future.

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E-Commerce A Staircase for Economic Growth

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Abstract

E-commerce is growing steadily around the world due to the widespread use of smartphones and the internet at all societal levels, which has an impact on both marketers and consumers. In India's digital economy and retail sector, where hybrid forms of "online-offline" commerce have sparked twelve million new jobs. In this study, responses were collected from nearly 100 individuals to examine the perks of e-commerce on existing and future employment and its socio-economic benefits, also inspecting the attitudes and behaviours of users towards them. The analysis used in this study are Chart analysis, Correlation, and Rank analysis.

Keywords: *Ecommerce, employment opportunity, inclusive growth, economic development*

Review of Literature

Impact of Ecommerce on global business and opportunities -conceptual study by Dr Kiran S Nair (2017). The purpose of this study is the find out the growth and influence of E commerce and its effects on today's business aspects and job creation.

Ekundayo, Veronica, and Dorcas Adeleye Odunaike (2016). "E-Commerce: Changing the Face of Trade in the Twenty-First

Century". This paper will examine the meaning and scope of e-commerce, type of e-commerce, prospects and challenges which culminate in possible recommendations that will enhance the effectiveness of ecommerce in Nigeria.

Mandel, Michael (2017). "How ecommerce creates jobs and reduces income inequality.". This paper discusses how expansion of e-commerce is creating jobs and reducing income inequality.

Research Gap

There are many numbers of research studies that were done on the topic E Commerce by different authors. They used different variables in different situations. But our study is concerned with the impact of E Commerce on employment and its effect on the inclusive growth face of the economy.

Research Questions

- What's the impact of e-commerce on future employment?
- How e-commerce affects the inclusive growth of economic development?
- What are the perceptions of vendor and consumer on digital transformation?

Objectives

- To analyse the impact of Ecommerce on current and future employment.
- To understand the inclusive growth face of ecommerce in economic development.
- To know the perception of consumers and vendors futuristic thoughts on digital transformation.

Statement of Problem

The major problem prevailing in a developing country like India is unemployment and underdevelopment. Through E-commerce India achieves a more inclusive growth by creating large-scale employment opportunities, enabling first-generation entrepreneurs, skilling youth, empowering women, and contributing to economic development from all dimensions.

Scope of The Study

This study aims to analyse the impact of e-commerce on employment. It also attempts to understand the inclusive growth face of the e-commerce. Nowadays, people are becoming socially more aware and conscious about various digital transformations that affect their life. Thus, this study is important to analyse their perceptions about e-commerce.

Limitation of Study

This study is circulated to people who are familiar with e-commerce platforms and conducted with limited time and taken small number of samples. The study was mainly conducted Among The People Of Kottayam.

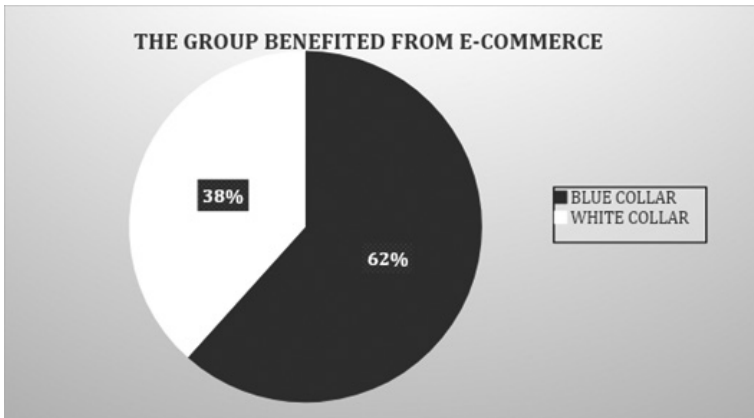
Research Methodology

This is an empirical study based on judgemental sampling method. Primary data was collected through Google forms. It was divided into four parts. Part-A consists of Demographic Profile, Part-B consists of the impact of e-commerce on employment, Part-C consists of inclusive growth face of e-commerce on the economy, Part-D consists of perceptions of vendors and consumers on digital transformation. This questionnaire was issued to 100 respondents through Google forms. Hypothesis framed based on

questionnaire. The tools used were chart analysis, correlation, and rank analysis.

Chart Analysis

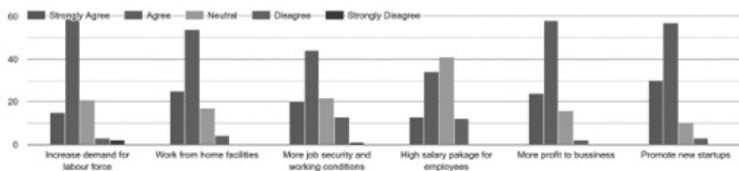
Pie-Chart



Interpretation

From this pie-chart we can infer that more employment will be created in the blue collar jobs (62%) than in the white collar jobs (38%) through the impact of e-commerce in the job market.

Bar Chart



Interpretation

From this bar chart it is understood that most of the respondents agree with the statement e-commerce creates improvements in all the dimensions of employment.

Correlation

Impact on Consumers Sector		Impact on Business Sector		Impact on Financial & Technical Sector	
Wide range of products & services	A1	No operational cost	B1	24x7 Banking service	C1
Save Money	A2	Global customers	B2	Fast Payment	C2
Save Time	A3	More marketing options	B3	Technical Advancement	C3
Service 24x7	A4	Promote small scale startups	B4		
		More Profits	B5		

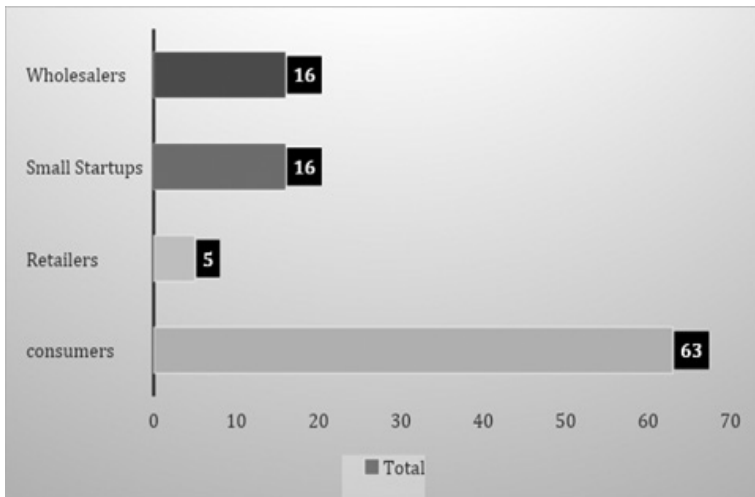
Pearson Correlation

	A1	A2	A3	A4	B1	B2	B3	B4	B5	C1	C2	C3
A1	1	.509	.496	.495	.225	.336	.437	.321	.058	.396	.231	.361
A2	.509	1	.588	.367	.253	.242	.319	.323	.246	.218	.208	.228
A3	.496	.588	1	.330	.359	.333	.322	.281	.197	.241	.380	.424
A4	.495	.367	.330	1	.267	.376	.544	.243	.309	.467	.385	.495
B1	.225	.253	.359	.267	1	.368	.415	.324	.407	.532	.454	.378
B2	.336	.242	.333	.376	.368	1	.658	.378	.418	.430	.538	.579
B3	.437	.319	.322	.544	.415	.658	1	.391	.521	.494	.514	.704
B4	.321	.323	.281	.243	.324	.378	.391	1	.413	.398	.335	.316
B5	.058	.246	.197	.309	.407	.418	.521	.413	1	.435	.542	.570
C1	.396	.218	.241	.467	.532	.430	.494	.398	.435	1	.586	.477
C2	.231	.208	.380	.385	.454	.538	.514	.335	.542	.586	1	.753
C3	.361	.228	.424	.495	.378	.579	.704	.316	.570	.477	.753	1

Interpretation

From the table it is inferred that impact of ecommerce on consumers, business, finance, and technology are positively related to each other. Thereby leading to an inclusive growth of economy.

Rank Correlation



Interpretation

From the table it is understood that (63%) consumers are benefited through this digital transformation. Followed by wholesalers and small startups (16%) creating massive employment opportunities.

Findings

- Majority of the respondents were females (65%) whereas only (35%) male attended the survey who belong to the age group of 17-25 years and under the occupation as students.

- Among the respondents 84% of them fall under the category of buyer, 4% as sellers and remaining 12 % who were both buyers and sellers.
- 77% of people make 15 to 35 orders in a month and only 17% of them make orders twice or thrice in a year.
- 88% supported the statement that e-commerce has increased the job vacancies and will increase much more in future.
- It was observed that more employment opportunities are available among blue collar jobs (62%) than white collar jobs (38%).
- 63% of consumers were benefited through the expansion of ecommerce and 16% of wholesalers and startups were also gained through this.
- 97% of respondents agree ecommerce is a great digital transformation witnessed by the world.

Suggestions

- Both the groups (blue collar, white collar) should be given equal opportunity of jobs.
- Ecommerce has a positive inclusive growth but its not strong enough to drive our country to development so more scope should be introduced in this field.

Conclusion

Ecommerce has created a multidimensional face for employment. It fosters growth in all the sectors of the economy eventually leading to economic development. It gave a new face of the market to consumers as well as to the business. Through more advancement in this field can make a progressed economy.

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Utilization of Spent Mushroom Substrate as a Potent Biofertilizer on Selected Plants

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Abstract

*Globally a huge quantity of agrowastes is used to produce edible mushrooms, but this generates a large amount of spent mushroom substrates (SMS) post-harvest. The current study was planned to utilize these spent mushroom substrates as a potent biofertilizer on a few selected plants. Pilot study was conducted on *Capsicum annum*, *Celosia* sp., *Ocimum basilicum*, *Cyamopsis tetragonoloba* and *Abelmoschus esculentus*, treatment with fresh SMS and spent mushroom compost. Fresh SMS did not show remarkable results in all the plants. Based on the effect of the spent mushroom substrate on these plants, *Cyamopsis tetragonoloba* and *Abelmoschus esculentus* were chosen as candidate plants for the present study. For each of the treatments, five replicates were maintained. The treated *C. tetragonoloba* plants grown with composted substrate showed an increased shoot height of 147.4 cm against 84.6 cm when compared to control plants after 75 days of treatment. Other parameters like number of fruits produced (63 vs 23), length of fruits (15.86 vs 11.56 cm), weight of fruits (214 vs 67 g), root collar diameter (3.58 vs 1.98 cm) and number of branches (6 vs 1) were also observed*

to be enhanced in the treated plants when compared to control. Similarly the increase in shoot height was also observed in treated plants of A. esculentus of 81.2 cm against 57.8 cm in the control plants and likewise with other parameters representing a gain in produce when compared to control. Thus usage of spent mushroom compost has proved to be beneficial in improving yield of the plants.

Keywords: *Plant growth promoters, Pleurotus florida, Biofertilizer, Spent mushroom substrate, Spent mushroom compost*

Introduction

Plants interact with microbes in their natural growing environments, and relationship between plants and diverse fungal species impact plants in a complex symbiotic, parasitic, and pathogenic ways. Studies show intensive investigation of plant growth regulators produced by mushrooms, and have succeeded in finding various regulators from mushroom-forming fungi: some of them form symbiotic relationship resulting in mycorrhizal association. While others are known to be growing in their vicinity, supplementing growth regulators, providing growth promoting compounds, without symbiosis. This enables the plants to uptake unavailable form of nutrients in an available form, which can in return enhance the nutrient uptake capacity of plants. Spent mushrooms will be collected from Mushroom House, Women's Christian College, Chennai, and processed to be tested for the growth promoting ability. Here the effect of growth promoter from mushroom spent substrate will be studied in detail using randomized block design.

Mushrooms are chosen for their delicacies, medicinal benefits and nutritional values (Rajaratnam *et al.*, 1997). Due to their beneficial qualities, global production of mushrooms has

increased drastically. Agro-waste from field, animal husbandry and poultrywastes are a few of the substrates used for mushroom cultivation as an ecofriendly approach. A huge amount of solid fermented waste is generated each year through mushroom cultivation worldwide. After harvesting mushrooms, the spent substrate is discarded or dumped as waste into the land. Production of the spent substrates globally accounts to be approximately 50 million ton. The piling up of the substrate becomes anaerobic and has been known to cause various environmental problems, including releasing offensive odors, run-off from piles contaminate groundwater and also pollutes nearby waterbodies (Beyer, 1996). Due to its composition (mainly high organic matter content), poorly stored spent mushroom substrate can pose environmental hazards through the development of pathogenic microflora and the spread of fungal diseases, uncontrolled waste biodegradation by microorganisms, and the consequent emission of greenhouse gases into the atmosphere; this is as well as the leaching of nutrients into surface and groundwater (Leong *et al.*, 2022). Efforts have been made to combat such pollution generated through solid fermented wastes and management of spent mushroom substrates, recomposting them to be good growing medium for cultivation of vegetable crops and other plants as an alternative to manure (Edyta and Jolanta, 2022). The other utilities of spent mushroom substrates like vermicomposting, bioremediation, organic-mineral fertilizer, etc., add boon to mushroom farming. Though attempts have been made to ameliorate management of mushroom spent substrate, it is still under dispute due to various deleterious reports.

Materials and Methods

The current study was conducted at Ayanavaram in the open terrace in grow bags. The experiments were conducted using modified methodology of Polat *et al.* (2009) using randomized block design. Throughout the study five replicates were maintained for each treatment.

Sample collection:

Seeds used for the study were obtained from local markets, Ayanavaram and Madhavaram, Chennai.

Selection of candidate plants

A pilot study was conducted with *Capsicum annuum*, *Celosia* sp., *Ocimum basilicum*, *Cyamopsis tetragonoloba* and *Abelmoschus esculentus* plants. Based on the effect of the spent mushroom substrate on these plants obtained, *Cyamopsis tetragonoloba*, and *Abelmoschus esculentus* were chosen as candidate organisms for the present study.

Preparation of the growth media:

Spent mushroom substrate was obtained from the mushroom house, Women's Christian College, Chennai. Fresh spent mushroom substrate, air dried substrate and composted spent mushroom substrates were used for the pilot study (Plate 1). The three treatments of 25% substrates were used with soil in a combination of red soil and sand in a ratio of 2:1. Best results were obtained with spent mushroom compost, which was used in the present study.

Plate 1

a) Spent Mushroom Substrate – air dried – ready for composting



b) Composted - Spent mushroom substrate – after 3 fortnights



Germination study and planting

Seeds were washed and were germinated in sterilized sand. The seedlings when attained 5 cm height, were transplanted on to the grow bags with the respective treatments. Soil without substrate was used as control.

Measuring Growth Parameters

Various growth parameters, viz., shoot height, root collar diameter, length of fruits were measured using a measuring tape; fresh weight of fruits was obtained using a weighing balance and number of branches and fruits were counted manually for all replicates.

Results and Discussion

Spent mushroom substrate is currently disposed as waste in many parts of India, which has been rationally increasing, which constitutes environmental problems. But if harnessed properly, the SMS can be planned to be used as a potent biofertilizer. Marques *et al.* (2014) used SMS for cultivation of *Lactuca sativa*. Peksen and Uzun (2008) in their research observed SMS to be rich in organic matter, supplementing macro and micronutrients to plants. Aldason *et al.* (2006) in their studies observed that leached SMS

brought about significant increase in shoot length and number of cucumber fruits.

Data from the current study shows that supplementation of spent mushroom compost increased in growth parameters. In a pilot study that was performed with *Capsicum annuum*, *Celosia* sp., *Ocimum basilicum*, *Cyamopsis tetragonoloba* and *Abelmoschus esculentus*, treatment with fresh SMS did not show remarkable results in all the plants. Based on the effect of the composted spent mushroom substrate on these plants, *Cyamopsis tetragonoloba* and *Abelmoschus esculentus* were chosen as candidate plants for the present study.

Spent mushroom substrate obtained from the Mushroom House, Women's Christian College, Chennai was air dried and allowed to compost for about 45 days and 25% of the compost was mixed with soil (Plate 1). Plants grown in grow bags with compost was used as treated, whereas the plants in grow bags without compost were considered as control.

Growth parameters, viz., shoot height, root collar diameter, number of branches, number of fruits and length of the fruits were observed and compared with the control plants.

Shoot Height

Shoot height of *Abelmoschus esculentus* grown in soil amended with spent mushroom compost showed an increase in growth 15 days after treatment when compared to the control plants (which did not have the spent mushroom compost amended). The growth obtained 15 days (treated 7.5 cm; control 5.18 cm) and 30 days (treated 18.2 cm; control 14.0 cm) after treatment did not show much difference, whereas in the subsequent period of the study recorded 45 days (treated 47.8 cm; control 28.6 cm), 60

days (treated 62 cm; control 43 cm) and 75 days (treated 81.2 cm; control 57.8 cm) after treatment, notable increase in growth rate was observed (Fig. 1).

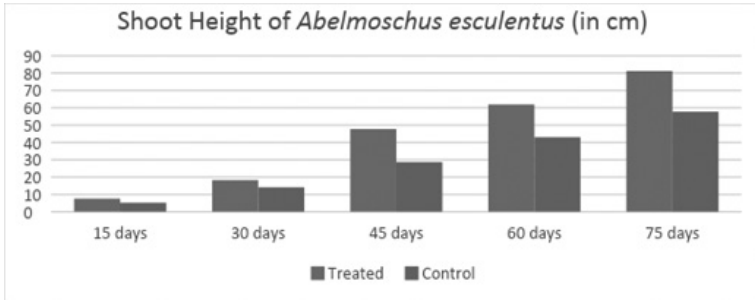


Fig: 1a

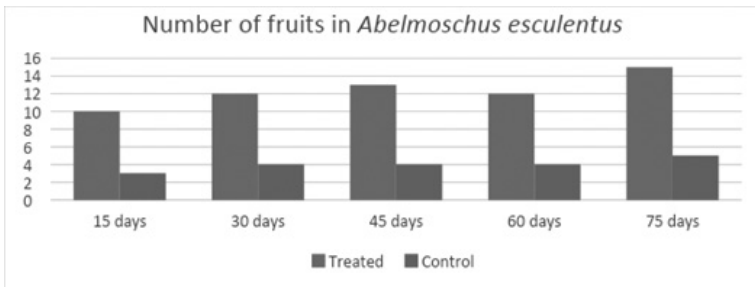


Fig: 1b

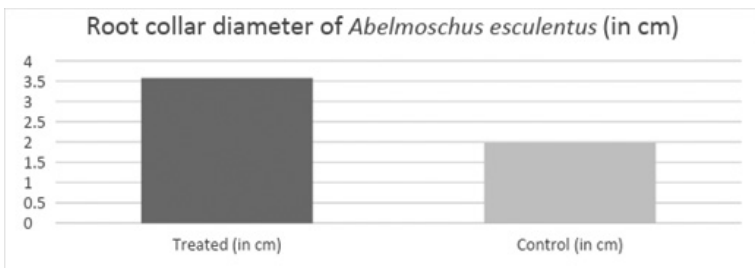


Fig: 1c

Cyamopsis tetragonoloba plants when treated with spent mushroom compost showed no difference in their growth 15 days after treatment (treated 5.0 cm; control 4.58 cm). Increased shoot height was observed 30 days after treatment showing 11.4 cm and 8.6 cm for control. Pronounced increase in shoot height was observed after 45 days of treatment (treated 36.8 cm; control 25.2 cm), 60 days (treated 87.6 cm; control 45.8 cm) and 75 days (treated 147.4 cm; control 84.6 cm) as shown in Plates 2, 3 and Figure 2.

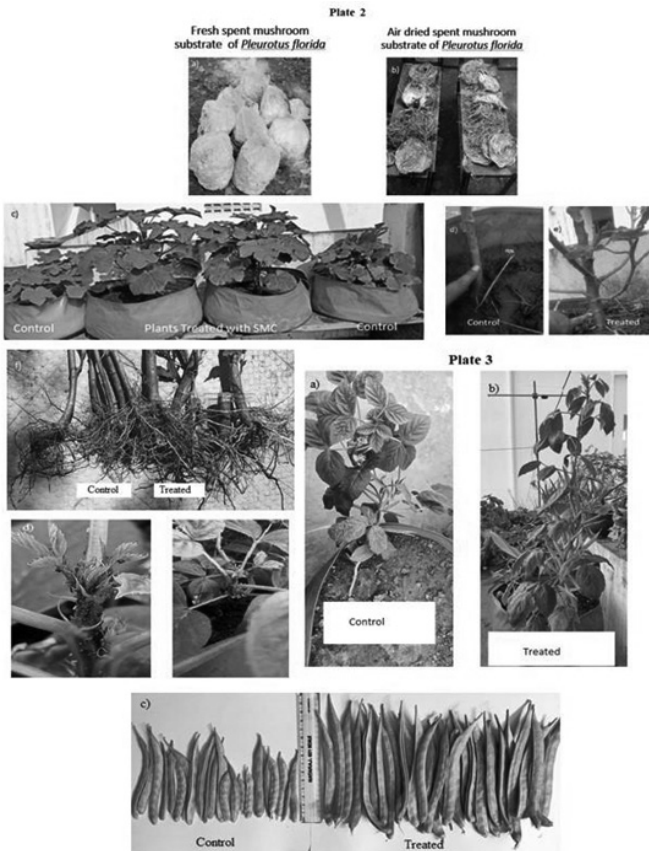


Figure 2 a.

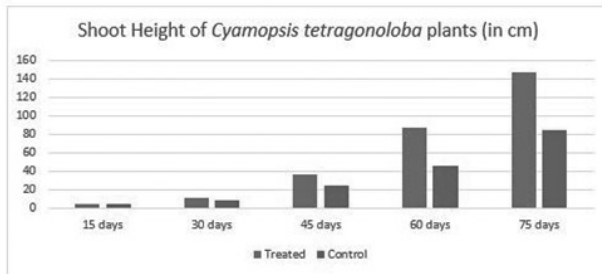


Figure 2 b.

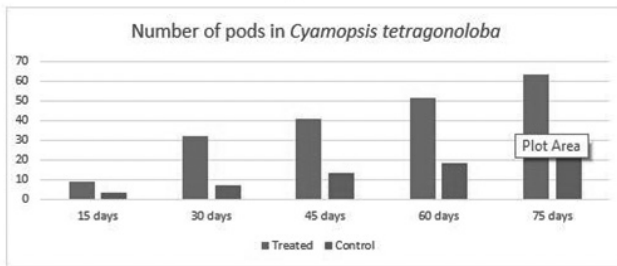
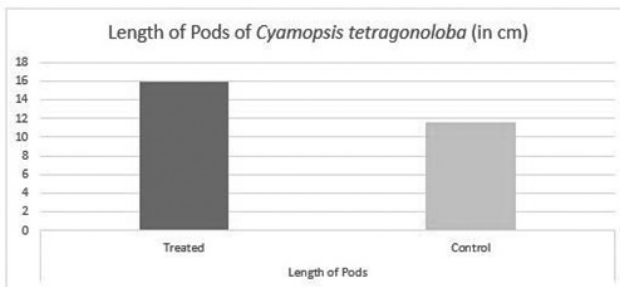


Figure 2c.



Number of Branches, Leaves and Fruits

In *A. esculentus* formation number of branches in the spent mushroom compost treated plants were higher, ranging from 5 to 7. On the contrary no side branches arose in the control plants, but for the main shoot system. As the number of branches increased,

the number of leaves in each branch added to the treated plants. Therefore, formation of buds and subsequently the number of fruits formation also increased in the treated plants when compared to control. This is at par with the results obtained by Huang *et al.*, (2023), who studied on the agro-based spent mushroom compost substrates that improves soil properties and microbial diversity in greenhouse tomatoes. In their study it was observed that the agro-based SMC substrate grooved cultivation system is recommended as an environmentally compatible practice for tomato growth in the greenhouse.

In *C. tetragonoloba* no difference side branches were observed in both treated and control plants. Though no branches arose, the formation of number of leaf, flowers and fruit setting greatly increased in the treated plants when compared to control as shown in Plates 2 & 3.

Root Collar Diameter

Plate 2 d, e and f shows the root collar diameter of *A. esculentus* plants. It is evident that the treated plants showed increased root collar diameter of 3.58 cm than that of the untreated plants (1.98 cm). The increase in root collar diameter and the formation of branches can be correlated to have shown through increase in yield of *A. esculentus* fruits. In the *C. tetragonoloba* plants there was no difference in the root collar diameter though, the number of leaves were increased and therefore the flower formation and fruit setting increased in the spent mushroom compost treated plants than the untreated ones.

Pest infestation

Growth increased with age of the plants as it is evident from the study that the spent mushroom compost treated plants showed

increased growth parameters and also increase in yield. Not only did the growth parameters showed an increase in both plants *A. esculentus* and *C. tetragonoloba* in the treated plants, but there was pest infestation by aphids which was observed in the control *C. tetragonoloba* plants (Plate 3 d, e), but no infestation was observed in the treated plants. Mealy bug and leaf miner infestation was observed in the control plants of *A. esculentus* plants that was not treated.

Conclusion

Spent mushroom substrate which is known to pose environmental pollution when not properly composted and disposed into the surroundings. On the other hand, when properly composted and used to treat plants, they are known to promote growth to certain plants. Apart from increased growth shown in the treated plants, the treated plants also showed resistance in pest infestation. Therefore, spent mushroom compost can be used as a potent biofertilizer to treat as a tonic to plant growth.

Acknowledgement

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Strategies Implemented to Raise the Standard of Scientific Research

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Abstract

The pursuit of sustained growth and innovation within organizations often hinges on effective Research and Development (R&D) strategies. This abstract encapsulates key insights into various strategies instrumental in achieving maximum growth through R&D initiatives. Colleges engage in R&D to push the boundaries of knowledge across various disciplines. Faculty and students undertake research projects, experiments, and studies aimed at expanding existing knowledge, discovering new theories, and innovating in their respective fields. In general, research and development activities are conducted by specialized units or centers belonging to a company or can be outsourced to a contract research organization, universities, or state agencies. R&D is always aimed at new findings, based on original concepts (and their interpretation) or hypotheses. R&D comprises creative work undertaken on a systematic basis to increase the stock of knowledge in various fields of science and technology and advance education, learning and expertise in the country's manpower. In the last decades international

knowledge, in natural sciences, social and economic fields, flows continuously and studies show that it is a major factor in world economic growth. Universities are an increasingly important component of scientific innovation and technological advances in many sectors of the economy and production.

Keywords: *Research and Development, biotechnology, medicinal plants, microorganisms*

Introduction

The PG & Research Department of Biotechnology was established in the year 2000. Over the last two decades, the department has seen twenty-three batches of students graduate. The department aims to promote the academic and research pursuits of their students through the faculty's vast expertise and institution's resources. Students are expected to actively participate in their six months project, summer internship that helps them gain hands-on experience in research and are encouraged to focus on critical thinking and problem-solving. This exposure equips them with essential skills that are valuable in their academic and professional journey. In 2009, the Department received approval to offer the M.Phil. programme. Another significant milestone came about in 2014, when the Department was approved by the University of Madras to offer both Full-Time and Part-Time Ph.D. programmes.

Research and Development (R&D) in the department represents a pivotal pillar of academic advancement, fostering innovation, knowledge creation, and technological progress across diverse fields and this encourages critical thinking, experimentation and collaboration among faculty, students, government institutions and industries. These partnerships foster knowledge exchange,

resource sharing and the application of research outcomes to address real-world challenges. Faculty members often spearhead research projects and delve into unexplored areas. The institution houses a state of art central instrumentation laboratory with cutting edge technology. Presently, there are fourteen research scholars under three recognised Ph.D. guides pursuing research in various fields of Biotechnology. The broad areas of research include microbiology, nanotechnology, environmental biotechnology, plant biology, plant genetics and molecular biology.

Exploring the Unseen World of Microbes

Microbiology is the scientific study of microorganisms, such as bacteria, viruses and fungi, and to understand their structure, function, behaviour, relationships and their innumerable benefits. Microorganisms play a multifaceted and crucial role in various research domains spanning from basic science to applied fields. Despite significant advancements, there are several unexplored or lesser-studied areas within microbial research that continue to intrigue scientists and offer avenues for further investigation. The aim of this research focuses on isolating organisms from various unexplored areas, followed by characterization of the organism for the presence of novel bioactive metabolites to study their potent biological applications. Some of the projects carried out in the field of microbiology include:

Food Industry

Food dyes are chemicals that were created to improve the appearance of food by adding artificial colour. Before food colours are used, they must be examined for any potential negative effects on human health. Certain colours are very carcinogenic, trigger allergic reactions, and may result in more severe health problems

such as adult Attention-Deficit Hyperactivity Disorder (ADHD). The project's goal is to investigate the ability of microorganisms to break down food colours, and it also emphasizes the importance of natural food colours vs synthetic colours.

Role of Probiotics in Cancer Treatment

Probiotics are essential for maintaining a healthy gut microbiome in human beings. The current study focuses on understanding the overall activity of the isolated microorganism and its role in reducing the risk and severity of chemotherapy-related toxicity and thus reducing side effects associated with cancer treatment.

Bacteriocins from Probiotics organisms

The synthesis of bacteriocins from probiotic organisms and the ensuing processes of purification and characterisation are the main subjects of this study. Numerous uses are found for the refined bacteriocins. The probiotic bacteria were isolated via the anaerobic chamber that the department supplied, then the isolated bacteria's characterisation. The bacteriocins were produced and purified in the laboratory utilising the available equipment.

Biodegradation of synthetic polymers

Despite the fact that synthetic polymers are useful for everything from electronics and construction to packaging, their limited biodegradability causes a large amount of plastic pollution that is bad for the environment, human health, and the ecological cycle. Hence synthetic polymer wastes are ubiquitous and they accumulate as recalcitrant compounds. The current study aims at biodegradation of synthetic

polymers using microorganisms. It focuses on microbial interactions with the polymers and biodegradation processes involved in bioremediation of these wastes.

Bioceramics

Many of the traditional ceramics on the market are made primarily of synthetic biomaterials. These come with several drawbacks, including poor biodegradability, toxicity risk, sturdy manufacturing processes, high cost, and more. The project's primary goal is to create ecologically conscious ceramics in an economical manner with natural biomaterials. The resources required for the project are being obtained from PG and the Department of Biotechnology project.

Harnessing Green Magic: Phytotherapeutic Wonders Unleashed

Medicinal plants encompass innumerable active compounds that have multifarious biological applications. They have no side effects, are economical and are widely available. Screening of these metabolites helps formulate drugs that possess antibacterial, antioxidant, hepatoprotective, anti-inflammatory, anti-arthritis and thrombotic activity which helps against dreadful diseases such as Cancer, Diabetes, Tuberculosis, Asthma, Pneumoniae, Hepatitis and Neurodegenerative diseases.

Population study

To check the variation among species medicinal plants were cultivated in two different agro-climatic conditions to check the growth and yield variation among species. This study will help to improve the quality, and quantity (yield)

and will help develop new varieties or choose varieties according to the agro-climatic conditions. It will be helpful to produce medicinal plant-based formulations of Siddha, ayurveda systems that are cost-effective and efficient compounds to treat various illnesses.



Fig 1: Use of Hi-end instruments and conduct of Field Studies related to Agro research Role of Nanoconjugates against tuberculosis

Existing anti-tuberculosis drugs are long-term and expensive, the dosage that is used is high and therefore they result in drug-induced liver toxicity. The goal of the current project is to provide an alternate and eco-friendly approach to the treatment of tuberculosis using herbal nanoconjugates. Synthesis of nanoconjugates, antimicrobial and cytotoxic assays were carried out at the department and the tuberculosis part of the work was carried out at ICMR-National Institute of Research in Tuberculosis (NIRT).

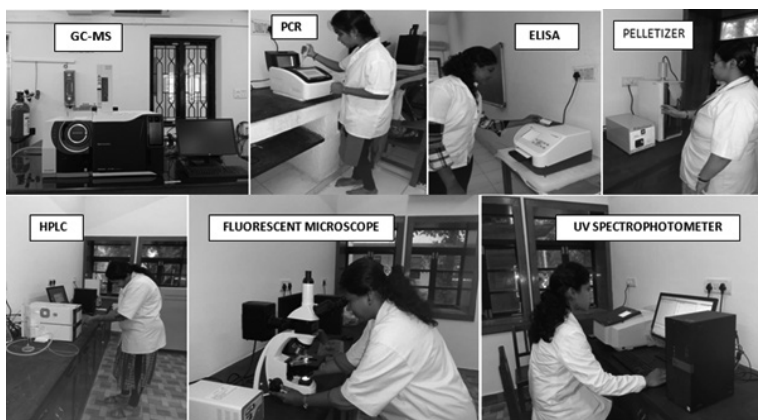
Treatment of diseases using medicinal plants

Chemotherapy can prevent cancer and tumours but patients tend to have a lot of side effects such as anaemia, skin allergy, vomiting and diarrhoea because of long-term consumption of

drugs. Medicinal plants when taken in appropriate proportions help prevent diseases. The project emphasizes the isolation and extraction of Phyto bioactive drugs for treating diseases such as cancer with minimal side effects.

Facilities available on campus

The institution provides amenities such as Enzyme Linked Immuno Sorbent Assay (ELISA), Polymerase Chain Reaction (PCR), UV VIS Spectrophotometer, Gas Chromatography-Mass Spectroscopy (GCMS), Fourier Transform Infra-Red Spectroscopy (FTIR), High-Performance Liquid Chromatography (HPLC), Fluorescent Microscope, CO₂ incubator, Laminar Air Flow (LAF), autoclave and decant.



Conclusion

R&D involves various stages, including proposal development, data collection, experimentation, analysis, publication of findings in peer-reviewed journals and in some cases commercialization of discoveries through patents. Seminars, conferences, and

symposiums are often organized to disseminate research findings, promote discourse, share knowledge and encourage collaboration among researchers from different institutions. The research scholars are encouraged to seek grants and funding to support their research endeavours. The impact of research should ideally transcend academia, contribute significantly to economic growth, be innovative and help the society. The symbiotic relationship between education and research nurtures a culture of innovation and critical inquiry that extends far beyond the confines of campus walls, shaping the future of various industries and fostering global development.

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Electronic Structure Calculations of TiX (X=Ni, Pd) Alloys using QUANTUM ESPRESSO

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Abstract

The paper reports the study on structural and electronic properties of TiNi and TiPd binary alloys using Quantum Espresso Computational Code. The systematic total energy studies made on TiNi and TiPd alloys in both B2 and (B19/B19') structures successfully explain the structural stability of these compounds. The equilibrium lattice parameters are calculated for these systems and compared with the available experimental results. The bonding nature of these TiNi and TiPd alloys is analyzed via the density of states (DOS) histogram.

Keywords: Shape Memory Alloys; Quantum - Espresso; B2-B19 Phases; structural parameters; DOS curves

Introduction

Shape Memory Alloys (SMA) constitute a group of metallic materials which have an ability to recover to previously defined length or a shape when subjected to an appropriate thermo mechanical load. Although relatively

wide variety of alloys present shape memory effect, only those that can recover from large amount of strain or generate an restitution force are of commercial interest. Particularly important among them are alloys based on Titanium namely TiNi and TiPd because they combine good mechanical properties with shape memory effect. These alloys basically exist in two well-defined crystallographic phases namely austenite and martensite as shown in Fig.1. The austenite phase is stable only at high temperatures, having a single variant with a body centered cubic crystal structure (B2). Martensite phase can be induced either by stress or temperature. When martensite is induced by temperature it is called twinned martensite and is stable at lower temperatures (B19/B19').

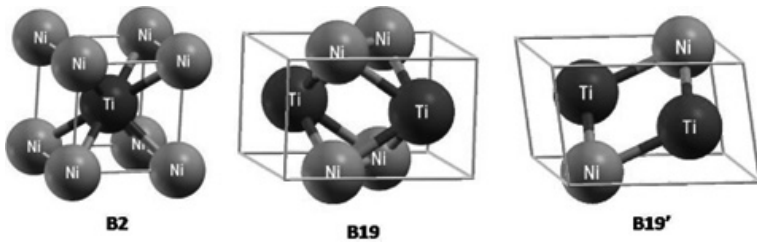


Fig.1 Austenite (B2) and Martensite (B19/B19') lattice structures of TiNi alloy

A lot of theoretical works have been employed to study the relative stability of B2 and B19/B19' phases of Ti-based alloys at ground state. Due to the importance of TiNi as a shape memory material and the uncertainty regarding its atomistic martensitic transformation path, a complete investigation is required to understand the structural stability governing the displacive phase transformation. Ambiguities of B2, B19 and B19' structures require resolution, and the phase stability of each structure must

be established by exploring the difference in electronic structure of different structural phases. As a result, a first principle calculation has been carried out to determine the martensite phase of TiNi and TiPd alloys at ground state using the computational code using Quantum Espresso.

Computational Details

The First-principles calculations based on DFT was used for electronic properties calculation of TiNi and TiPd alloys using QUANTUM ESPRESSO (QE) in its Projected Augmented Wave (PAW) formulation for potentials. The exchange-correlation potential and energy are described within Generalized Gradient Approximation (GGA) of Perdrew and Wang et al [12]. The optimizations are carried out till the total energy is conserved up to 10^{-5} eV/atom. The unit cell contains two atoms in the cubic B2 structure and four atoms in the orthorhombic B19 and monoclinic B19' structures. The symmetry code is also used to set up the Monkhorst Pack special points allowing an efficient calculation of bulk materials. The calculations are performed with $4 \times 4 \times 4$ Monkhorst Pack (MP) k-point mesh for the cubic B2 structure and $4 \times 4 \times 4$ MP for (B19'/B19) structures.

Total Energy Calculations

The phase stability of both B2 and (B19/B19') crystal structures were studied using energy minimization procedure. The valence electronic configurations for TiNi and TiPd are Ti: $3d^2 4s^2$, Ni: $3d^8, 4s^2$ and Pd: $4d^{10}$ respectively. The 'd' electrons are treated as valence electrons. They are chosen to represent the basis set for the present calculations. For both codes the atomic position co-ordinates used for B2 and B19/B19' structures are (0, 0, 0) (0.5, 0.5, 0.5) and (0, 0, 0) (0.5, 0.0, 0.5) respectively. The initial lattice

parameters chosen for self-consistent iteration process for TiNi alloy are $a=3.015\text{\AA}$ for B2 structure and $a=2.859\text{\AA}$, $b=4.582\text{\AA}$ and $c=4.078\text{\AA}$ for B19' structure. Similarly, the lattice parameters chosen for TiPd alloy are $a=3.18\text{\AA}$ for B2 structure and $a=2.79\text{\AA}$, $b=4.81\text{\AA}$ and $c=4.52\text{\AA}$ for B19 structure.

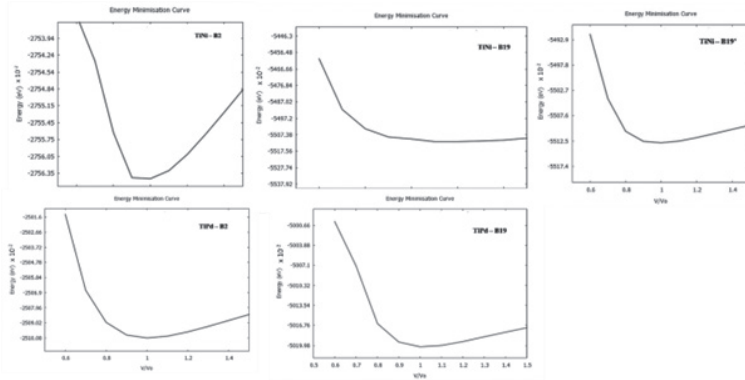


Fig.2 Energy Minimization curves for TiNi and TiPd in B2, B19 and B19' Structures

The optimized lattice parameters of TiNi and TiPd in B2 structure obtained using Quantum Espresso are 3.0278\AA and 3.1979\AA . The total energies obtained for TiNi and TiPd in B2 structure are -27.56eV , -25.10eV and that in B19 structure are 55.09 eV and -50.20eV respectively. The total energy of TiNi in B19' structure is obtained to be -55.12 eV . The Fig.2 shows the energy minimization curve of TiPd alloy in both B2 and B19 phases at $V/V_0=1$. It is obvious from Fig.2 that the B2 structure is more stable compared to B19/B19' structures. Hence the TiNi and TiPd alloys exist in B2 phase compared to B19/B19' phase. Thus, the total energy curves confirm that these alloys exist in B2 phase which agrees with the results reported by Pasturel et al and Fukada et al.

Band Structure

The structural stability of these alloys is investigated using the electronic structure calculations. The band structures for all these Ti based alloys have been plotted along high symmetry lines and are shown in Fig.3. The trend of bands in B2 phase is symmetric as the alloys possess highly ordered body centered cubic crystal structure. The splitting of degenerate bands is observed in B19/B19' due to lower symmetry of orthorhombic/monoclinic crystal structures. This leads to increase in multiple bands in the interior of Brillouin zone in B19/B19' structures. Hence B19/B19' structures possess complicated Brillouin zone compared to B2. These observations are in line with the results reported by Y. Ye et al. using pseudopotential augmented plane wave method, Bihlmayer et al. using scalar-relativistic self-consistent LAPW method with the Vashishta-Singwi He-din-Lundqvist exchange-correlation potential.

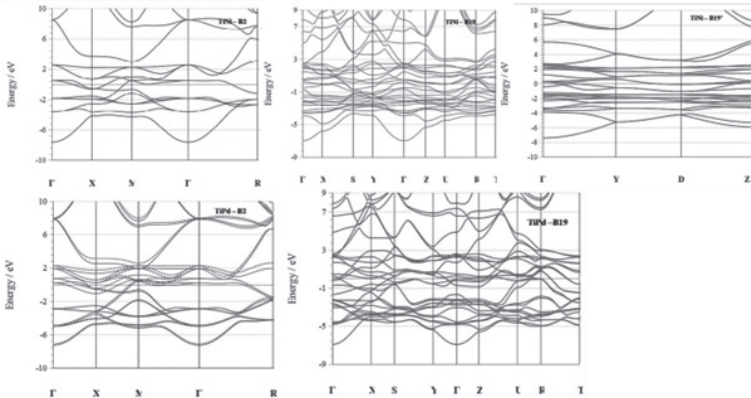


Fig.3 Band Structure of TiNi and TiPd in B2 and B19'/B19 structure at $V/V_0 = 1$

The band structures of (B19/B19') phase are alike as B2 phase at bound states yet prominent differences are noticed at higher energies near the Fermi level E_F . This indirectly indicates that number of electrons at Fermi is more for (B19/B19') phase compared to B2 which is reflected in their respective density of states (DOS) curve. Y. Ye et al reports these electrons present about Fermi level are responsible for determining the thermal, optical, magnetic, and electrical properties of the alloys. In this regard, these properties are expected to be more pronounced in (B19/B19') phase compared to B2. The width of the valence band is observed (Fig.3) to be narrower for (B19/B19') phase compared to B2 indicating the interaction between Ti and X (X=Ni and Pd) atoms are much stronger in (B19/B19') phase compared to B2.

Density of States

The total density of states shows the region of conduction and valence bands with vertical dotted line at 0eV indicating the Fermi level (E_F) on energy scale (Fig.4 & Fig.5). The states below Fermi level (E_F) are the bonding states and states above it is the anti-bonding states. The bonding states are much contributed by X (X=Ni, Pd) atoms and the anti-bonding states are much contributed by Ti atoms. The width of the X (X=Ni, Pd) peaks is much narrower in B2 phase compared to B19'/B19 phases. This shows that X (X=Ni, Pd) atoms will have a strong interaction between them in B2 phase compared to B19'/B19. This indicates that the bond strength will be much stronger for TiX (X=Ni, Pd) in B2 phase than B19'/B19 thus stabilizing the alloys in B2 phase. This observation is in line with the result reported through the energy minimization curve (Fig.1).

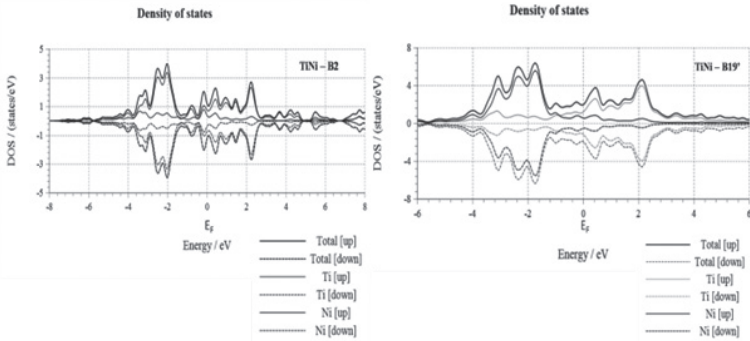


Fig.4 Total DOS curve of TiNi in B2 and B19' structures

On comparing the DOS curves of TiNi and TiPd in B2 and B19'/B19 phases we observe that width of the peaks is much narrower for Ni atoms compared to Pd atoms. This is due to the contribution of d-electrons from X (X=Ni, Pd) atoms. The atomic number of Ti is 22, Ni: 28 and Pd: 48 and their corresponding valence electronic configurations are Ti: $3d^2$, Ni: $3d^8$ and Pd: $4d^{10}$. From the DOS histogram obtained, we observe the lower energy part of the DOS curve to be dominated by the X (X= Ni and Pd) metal-d states and the higher energy anti-bonding states are dominated by the Ti-d states. As the elemental Ni and Pd atoms combine with Ti atom to form TiX (X= Ni and Pd) alloy, the partial Ti charge stays constant and the additional valence electrons go exclusively into the X site. Thus, the d state of X (X= Ni and Pd) becomes more like a filled sphere with gradual occupation of d^{10} state. Hence the electrons become more localized as X changes from Ni to Pd. With increasing d-band localization of X (X= Ni and Pd) atom towards the bottom of the valence band, the X contribution to DOS at the Fermi level $N(E_F)$ degrades. This observation confirms

the XPS studies reported by Shabaloskaya et al which show that as elemental X atoms combine with Ti atom to form TiX (X= Ni and Pd) compound, it results in enhancement of localization of d-electron of X atoms towards bound state. Thus, it is concluded that as the atomic number of X (X= Ni and Pd) atom increases, its d-state in B2 phase becomes more localized.

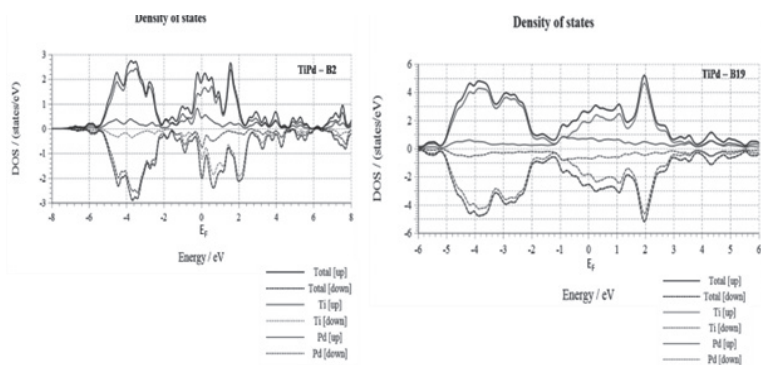


Fig.5 Total DOS curves of TiPd in B2 and B19 structures

Conclusion

We have performed first principles local density functional electronic structure calculation for the TiX alloys (X=Ni and Pd) using Quantum Espresso computational code. From our theoretical total energy studies on TiX (X=Ni and Pd) alloys we have arrived at the following conclusions:

- (i) The TiX (X=Ni and Pd) alloys exist in B2 structure at ground state. The lattice parameters of the TiNi and TiPd alloys obtained is slightly higher than the experimental values and this is partly attributed due to Generalized Gradient approximation (GGA) used in the calculation.

- (ii) The trend of bands in B2 phase is symmetric as the alloys possess highly ordered body centered cubic crystal structure. The splitting of degenerate bands is observed in B19/B19' due to lower symmetry of orthorhombic/monoclinic crystal structures.
- (iii) From the DOS histogram obtained, we observe the lower energy part of the DOS curve to be dominated by the X (X= Ni and Pd) metal *d* states and the higher energy anti-bonding states are dominated by the Ti *d* states.

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Impact of Online Counselling on the Nutritional Knowledge, Attitude and Practice of Select Athletes from Chennai

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Abstract

Online counselling, also known as e-counselling or teletherapy, involves the provision of health services and counselling through digital platforms such as video conferencing, text-based communication, phone sessions, online assessments and therapeutic apps. This study explored periodic nutrition counselling for 223 athletes on an online platform for six months. The athletes were selected based on convenience sampling from colleges and sports organisations in Chennai, and the study involved a descriptive design. Nutrition knowledge, attitude and practice (KAP) of the participants was assessed before and after the counselling program. Results revealed a significant ($p < 0.001$) increase with respect to knowledge, attitude and practice scores among participants after the counselling program. Thus, online nutrition counselling was found to be as effective as traditional offline counselling in achieving positive health outcomes. As technology continues to play a prominent role in healthcare delivery, online nutrition counselling can be

a practical and efficient method for providing individuals with information required for maintaining a healthy lifestyle.

Keywords: *Online counselling, nutrition knowledge, attitude, practice*

Introduction

Online counselling, also known as e-counselling or teletherapy, involves the provision of health services and counselling through digital platforms (Singh and Sagar, 2022). Some of the commonly used tools to facilitate online counselling are presented below:

- **Video Conferencing:** Real-time, face-to-face sessions between a counsellor and a client using video conferencing tools (Smith and Gillon, 2021).
- **Text-based Communication:** Counselling conducted through chat or messaging platforms (Hoermann et al., 2017).
- **Phone Sessions:** Counselling sessions conducted over the phone (Brenes et al., 2011).
- **Online Assessments:** Digital tools and assessments to evaluate health and well-being (Godinho et al., 2021; Stewart et al., 2022).
- **Therapeutic Apps:** Use of mobile applications designed to provide counselling support or health resources (Ventola, 2014).

Online counselling can be a convenient and accessible option for individuals who may face barriers to receiving in-person counselling, such as geographic distance or scheduling constraints. This has become increasingly popular, especially

with advancements in technology and the widespread availability of internet access (Muir et al., 2020). However, it is important to note that while online counselling offers flexibility, factors such as quality of services, privacy and confidentiality, and the need for reliable internet connectivity must also be considered (Baker and Ray, 2011).

The COVID-19 pandemic has significantly impacted the way health services are delivered, leading to an increased reliance on online modes of counselling to ensure continuity of care while adhering to social distancing and safety guidelines (Kaufman-Shriqui et al., 2021). The adoption of online counselling during the pandemic has facilitated continued access to health services while minimizing the risk of virus transmission. It has also highlighted the importance of technology in expanding the reach of health support and making services more accessible to individuals who may face geographical or logistical barriers to in-person care (Monaghesh and Hajizadeh, 2020).

Materials and Methods

The objective of this study was to provide periodic counselling using an online platform to select athletes from Chennai and study the impact of the program on their nutritional knowledge, attitude and practice. A descriptive research design was used as the study design.

223 athletes (154 females and 69 males) were selected based on convenience sampling from seven colleges and organisations in Chennai city. Periodic nutrition counselling was provided on a one-to-one basis every two months for a period of six months. Due to lockdowns and restrictions during the COVID-19

pandemic, an online mode of counselling was administered to the participants. Concepts related to the role of macro and micronutrients, requirements before, during and after exercise, sources, importance of hydration, and use of supplements were emphasized. Each session consisted of a 20-minute lecture followed by a Q and A session. Nutrition knowledge, attitude and practice (KAP) of the participants was assessed before and after the counselling program using a questionnaire, and mean scores were statistically tested.

Results and discussion

The mean nutrition knowledge, attitude and practice scores of female and male participants before and after counselling is presented in figures 1 and 2.

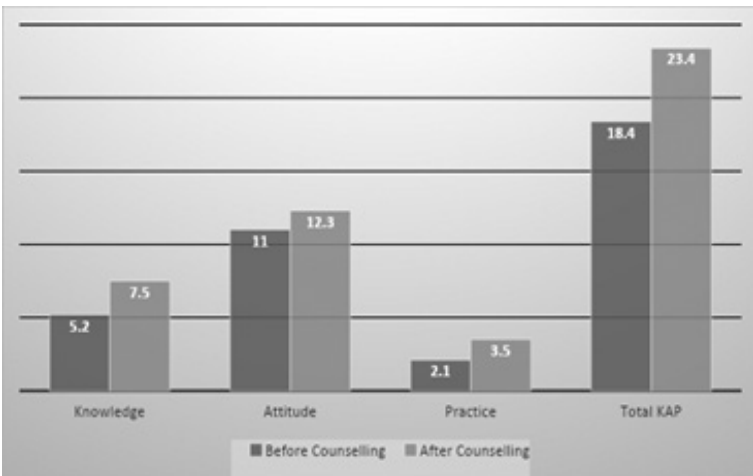


Fig.1. Mean nutrition knowledge, attitude and practice scores of female participants before and after counselling.

Source: Author's Compilation

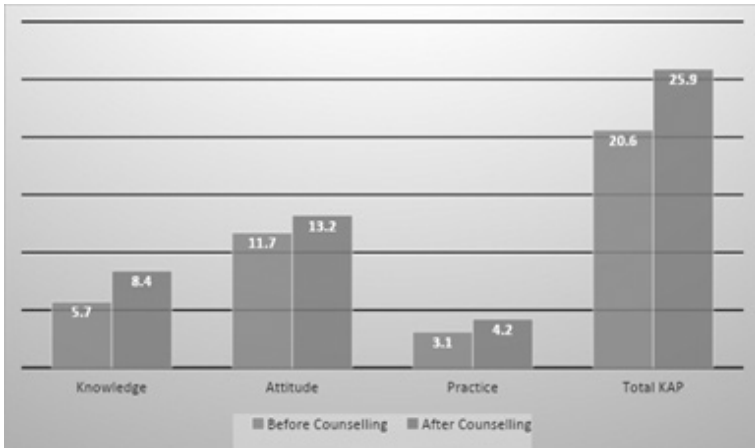


Fig.2. Mean nutrition knowledge, attitude and practice scores of male participants before and after counselling.

Source: Author's Compilation

After the counselling program, a significant ($p < 0.001$) increase was observed with respect to knowledge, attitude, practice and total KAP scores among both female and male participants. Despite the COVID-19 pandemic, periodic counselling sessions improved the nutrition knowledge, attitude and practice scores of the participants.

A study conducted in Bangladesh showed that an online nutrition counselling program for a period of two years among mothers led to an increased diet diversity scores and consumption of high -protein foods of animal origin in their children aged 0.5 to 2 years, suggesting an improved nutrition-related practice (Billah et al., 2021). Another study showed that virtual nutrition counselling among mothers from Indonesia resulted in an increase in their knowledge on complementary feeding practices (Nadimin et al., 2020). The above studies have indicated that providing

online counselling is as effective as offline mode in improving knowledge, attitude and practice related to nutrition.

Conclusion

Online nutrition counselling can be as effective as traditional offline counselling in achieving positive health outcomes. The convenience and accessibility provided by virtual platforms have demonstrated significant advantages, allowing individuals to receive personalized dietary guidance and support from qualified professionals. Online nutrition counselling offers flexibility in scheduling, reduces geographical barriers, and provides a convenient way for individuals to access nutritional advice from the comfort of their homes. While the effectiveness of both online and offline counselling modalities depends on the expertise of the nutrition professional and the commitment of the individual, evidence indicates that online nutrition counselling is a viable and valuable option for promoting healthy lifestyle changes. As technology continues to play a prominent role in healthcare delivery, online nutrition counselling can be a practical and efficient means of supporting individuals in their journey toward improved health and well-being.

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Impact of a Nutrition Education Program in a Tribal Community

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Abstract

Background: *The objective of this study was to translate nutritional knowledge gained in a classroom setting, to people at the community level. Mannan tribe, immigrants from Madurai, are a backward and marginalized group in the tribal population of Idukki district, and therefore this study was undertaken to create awareness through a nutrition education program.* **Methods:** *After obtaining permission obtained from the Tribal Welfare committee, 484 female and male participants in the age group of 18 to 70 years belonging to the Mannan tribe from the four taluks of Idukki district - Udumbanchola, Peerumedu, Thodupuzha and Devikulam were selected using purposive sampling method. A cross sectional design was adopted for the study. The study involved the conduct of nutrition education programs, and the impact of the program was assessed using a pre-test post-test questionnaire.* **Results:** *A significant improvement in the scores of the participants was seen after the program.* **Conclusion:** *Lack of education pertaining to nutrition and health directly affects the quality of life. Thus, the study concluded that by creating awareness in the Mannan tribal*

community, better health outcomes can be achieved. Thus, proper intervention and support can positively enhance their livelihood.

Keywords: *Nutrition intervention, Mannan tribe, Knowledge attitude and practice*

Introduction

Mannan tribe, immigrants from Madurai, are the most backward and marginalized group in the tribal population of Idukki district. They live in the most remote mountainous areas and deep interiors of the thickest growing forest in this district because the large area of the district is unsuitable for cultivation due to landscapes and now, they live mainly in forest and government sanctioned plots. Most of the indigenous Mannan population in India is in perpetual poverty, well below the poverty line, dangerously malnourished and highly illiterate.

The Government has limited access and information regarding food and nutritional status of the tribal people in villages of Idukki district. Due to less involvement with the outside world, the government is not able to help them. Moreover, education level among Mannan tribe is low as they do not have access to schools and other educational institutions. As most of the families reside away from the city side, it is hard for them to travel so long to access all the amenities. Thus, assessing their knowledge level and giving them proper education on nutrition is important.

Materials and methods

484 (243 males and 241 female) participants aged 18 to 70 years belonging to the Mannan tribe from the four taluks of Idukki district - Udumbanchola, Peerumedu, Thodupuzha and Devikulam

were selected using purposive sampling method. Voluntary participation was taken into consideration. Participants with health-related problems and undergoing treatment, or on any medication and those who were bed ridden were excluded from the study.

Institutional ethics committee of the Women's Christian College, Chennai, approved the protocol of the study. Permissions were also obtained from Tribal Welfare Officer, District Collector, Integrated Tribal Development Project Office (ITDP), The Forest Officer, The king of the Mannan community offices for the conduct of the study.

Experimental Procedure

Phase I

In phase I, general information of the participants was collected using a questionnaire and a Pre-Knowledge, Attitude and Practice questionnaire was given which consisted of twenty closed-ended questions were framed on nutrition, hygiene and healthy lifestyle practices. A nutrition education program was imparted to the participants after they filled the knowledge attitude questionnaire.

The local language Malayalam was used for imparting nutrition and health education. Audio-visual aids like power point presentation, and videos were developed on the basis of the existing clinical signs of nutritional deficiency, knowledge on nutrition and their health status. Nutrition and health aspects related to importance of nutrients, health, balanced diet, personal and environmental hygiene, conservation of nutrients, preventive measures to eradicate malnutrition and role of functional foods were a part of the pedagogy. Food preparation ideas and preservation of seasonal foods were also given with the locally

available foods. A pamphlet was formulated and translated in the regional language Malayalam.

Phase II

The second phase was supposed to be conducted after three months, which wasn't possible because of the Covid-19 situation. Thus, after eight months, a post Knowledge, Attitude and Practice questionnaire was provided. The scores obtained from the pre and post assessment were compared to evaluate the impact of the nutrition education program.

Statistical Analysis

The Statistical Package for Social Sciences (SPSS) version 27.0, created by SPSS Inc. in Chicago, IL, was used for data entry and statistical analysis. At 95% confidence, a p-value of ≥ 0.05 was deemed statistically significant. The following statistical analysis was performed on the collected data using SPSS software.

- i. Arithmetic Mean
- ii. Standard Deviation
- iii. Test of Significance

Results and Discussion

Knowledge, Attitude and Practice of the Participants

The mean scores obtained for the knowledge, attitude and practice by the participants was 7.01 ± 1.867 per cent during the pre-assessment and there was a significant increase (8.44 ± 1.943) at post-assessment.

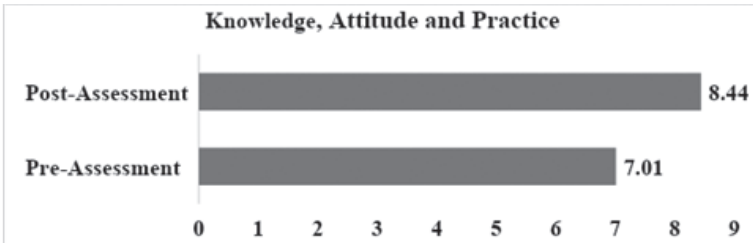


Fig: 1 - Knowledge, Attitude and Practice of the Participants

Discussion

The current investigation was conducted with the aim of determining the knowledge level of Mannan tribe before and after a nutrition education program. A good wellness program must include nutrition education. Several studies have demonstrated that children and adolescents who get nutrition education have better nutrition outcomes, quality of life and productivity.¹ A study conducted in 2008² states that the nutrition knowledge of the tribes with respect to scores of pre-tests and post-test showed a difference, indicating an improvement. According to another study⁵, only 48% of participants had good nutritional practices prior to nutrition counseling; however, 95% of them continued to follow good nutritional practices in their daily lives following counseling. Thirty-three percent of individuals thought skipping meals was a good idea prior to education, while breakfast eating increased post education. Most of them received higher grades for attitude than for schooling. It rose to 90% following education, indicating a change in mindset.

Conclusion

Mannans reside in the interior part of the areas where they do not have access to other communities. Just like other amenities,

schools are very far from the place where Mannans reside. Children find it hard to travel and attend school, so most of them refuse to go. Thus, majority of the people are illiterate. The program conducted among the tribe was found to have a significant impact in creating awareness on aspects related to nutrition and health. Thus, education at the community level can lead to improvement in the nutritional status of a community, and can contribute to long-term health benefits.

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Innovation in Teaching & Learning

The Integration of Multidisciplinary Strategies and Sustainability into Environmental Education

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Abstract

The concept of sustainable development has always been considered to be multidisciplinary in its approach. This is because it encompasses several scientific disciplines. However, there are challenges to using it as a pedagogical tool. In a world where resources are scarce but human creativity is boundless, colleges and universities play a vital role in shaping students from diversified backgrounds to address the sustainability challenges that lie ahead. The requirements of sustainability demand for innovative approaches of teaching and delivering the content in addition to the formulation of

new course material. Teaching through ecological footprints would be a useful starting point for educators.

Keywords: *Sustainable development, pedagogy, holistic education, ecological footprints*

Introduction

Sustainability holds a significant history in development literature. Research points out that “Sustainable development is a development that meets the needs of the present without compromising the ability of future generations to meet their own needs (Jabareen, 2011). It contains within it two key concepts. Firstly, the concept of 'needs', in particular the essential needs of the world's poor, to which overriding priority should be given; and the second idea of limitations imposed by the state of art technology, social groups and individuals on the environment's capacity to meet the needs of the current situation and the future.”

Social, environmental, and economic are the three domains that commonly define sustainability. (Aminuddin *et al.*, 2013). Sustainability encompasses various dimensions, making it an interdisciplinary field with aspects from statistics, science, and humanities. With specific problems and precise solutions as its prime focus, sustainability proposes strategies that advocate for educational approaches that are centered on individual and place-based projects. Teaching with a focus on sustainability also reminds us that pedagogy is a civic endeavor, with strong connections between the classroom and the wider community.

In the realm of education, the multidisciplinary approach has emerged as a pivotal strategy to navigate the complex landscape of environmental education. This method transcends the conventional confines of subject-specific teaching, offering a broader and

more comprehensive framework for understanding the intricate relationship between humans and their environment. At its core, the multidisciplinary approach amalgamates various disciplines—ranging from natural sciences to social sciences, and even the arts—to foster a holistic understanding of environmental issues. By integrating diverse perspectives, it empowers educators and learners alike to address multifaceted environmental challenges with a more nuanced lens. The inference of which helps us understand that Education for Sustainable Development (ESD) is now significant and is of transcendent nature (Bonnett, 2018).

Implementing a multidisciplinary strategy in environmental education holds numerous benefits. It cultivates critical thinking skills by encouraging students to analyse environmental issues through multiple lenses. For instance, while dealing with a problem like deforestation we can understand that it can be explored not only from a biological perspective but also through economic, sociological, and geopolitical viewpoints, fostering a comprehensive understanding. This approach is not merely a fusion of subjects; it's a conscious effort to bridge the gaps between disciplines, acknowledging the presence of environmental concerns, including climate change, the loss of biodiversity, and the depletion of resources, demand a multifaceted understanding and collaborative solutions.

Furthermore, this approach nurtures interdisciplinary connections, enabling students to grasp the interconnectedness between scientific phenomena, societal behaviour, cultural influences, and policy implications. By engaging in cross-disciplinary activities, students learn to appreciate the complex web of factors influencing environmental sustainability. Engaging students through a multidisciplinary environmental education

approach involves fostering experiential learning opportunities. Incorporating activities such as hands-on, projects, and field trips will immerse learners in real-world applications, making the concepts tangible and relevant. Whether it's designing sustainable solutions, conducting ecological experiments, or collaborating on community-based initiatives, students actively participate in applying their knowledge across various disciplines to address environmental challenges.

Moreover, this approach caters to diverse learning styles—it accommodates visual, auditory, kinaesthetic, and tactile learners. By incorporating elements from different disciplines, educators can create a rich and inclusive learning environment, catering to individual preferences and strengths. The impact of a multidisciplinary approach in environmental education extends beyond the classroom. It equips students with not just knowledge but also a sense of responsibility towards the environment. By instilling values of sustainability and stewardship, this approach shapes environmentally conscious citizens capable of effecting positive change in their communities.

In today's context, where environmental concerns loom large, the importance of multidisciplinary environmental education cannot be overstated. It plays a pivotal role in nurturing a generation of critical thinkers, problem solvers, and empathetic individuals equipped to address pressing environmental issues (2023).

Teaching With Ecological Footprints

The Ecological Footprint methodology has been well established in the field of education. It translates personal lifestyle choice into numerical data using an Ecological footprint

calculator (Pires *et al.*, 2023). Individuals gain an understanding of the importance of discrete lifestyle choices by means of a straightforward message and appealing outcomes. The individual's Ecological footprint is a way to use the Footprint concept in the classroom. However, calculating the EF of an institution would be far more beneficial in enhancing campus operations and stimulating actions and changes for both the student and the teaching community (Venetoulis, 2001).

This concept was first brought about by Rees in 1992 who used "human carrying capacity" and "natural capital" to delve deeper into the subject of ecological perspectives within the context of global economic transformation. Wackernagel and Rees (1996) down the line used the methodological and calculation of ecological footprint which was developed in their pioneering work "Our Ecological Footprint: Reducing Human Impact on the Earth." From their work we gathered the significance of an ecological footprint which factors the land area required to maintain the current levels of resource consumption and waste discharge by the population in question is crucial (Wackernagel and Rees, 1997).

Ecological footprints represent a holistic approach to evaluating humanity's impact on the environment, encompassing the resources and land necessary to sustain individual lifestyles, nations, or the global population. Beyond a mere carbon footprint, this metric considers various elements such as energy consumption, food production, water usage, and waste generation. Fundamentally, the ecological footprint quantifies the demand humans place on Earth's ecosystems, contrasting it with the planet's ability to replenish these resources. It encompasses both direct and indirect impacts, shedding light on the intricate relationship between human activity and environmental sustainability.

The calculation of an ecological footprint involves a comprehensive assessment of consumption patterns. It accounts not just for personal habits but also broader societal and industrial systems. This metric factors the amount of land needed to produce food, timber, energy, and the space required for waste absorption.

Currently, the worldwide ecological footprint surpasses the biocapacity of the Earth, which refers to the planet's capacity to replenish resources and absorb waste. This overshoot poses significant risks: irreversible environmental degradation, loss of biodiversity, resource depletion, and exacerbation of climate change.

Various factors contribute to an individual's or a nation's ecological footprint. Lifestyle choices, including diet, transportation, housing, and consumption habits, significantly impact one's ecological impact. Moreover, economic activities and policies influence resource use and environmental impact on a larger scale.

Understanding and addressing ecological footprints necessitate fundamental shifts in societal norms, economic structures, and individual behaviours to harmonize human activity with the Earth's regenerative capacity. By fostering a harmonious relationship with our environment, we can work towards creating a world that is both sustainable and fair for all living beings. (Lidgren, 2006).

Furthermore, recognizing and mitigating ecological footprints is crucial for achieving a balanced coexistence with nature. It demands concerted efforts to reorient our interactions with the environment, ensuring that human progress aligns with the Earth's ability to sustain life and maintain ecological harmony.

As individuals, communities, and nations, our actions collectively contribute to the ecological footprint. By adopting

sustainable practices, supporting initiatives that reduce resource consumption, and advocating for policies that prioritize environmental conservation, we can positively impact the planet's health.

At its core, reducing ecological footprints requires a transition to a circular economy, wherein resources are utilized effectively, waste is reduced to a minimum, and ecosystems are treated with respect. It involves innovations in technology, changes in production and consumption patterns, and a commitment to preserving biodiversity and natural habitats.

Addressing ecological footprints requires multifaceted approaches. Embracing sustainable practices, transitioning to renewable energy sources, implementing waste reduction strategies, supporting conservation efforts, and advancing technology are crucial steps. Collective efforts encompassing individual actions, governmental policies, and corporate responsibility are pivotal in steering towards a sustainable future.

Education and awareness play pivotal roles in this journey. Empowering individuals with knowledge about their ecological footprint fosters a sense of responsibility, encouraging sustainable choices. Catalysing collective action and instilling a global ethos of stewardship for the planet are essential for reducing our ecological footprint and securing the well-being of future generations.

Conclusion

In conclusion, the integration of multidisciplinary approaches in environmental education is indispensable. It empowers learners to comprehend the complexities of environmental challenges, encourages critical thinking, and fosters a feeling of accountability towards the environment. By embracing this approach, our efforts are directed towards creating a sustainable future for generations

to come where individuals are not only well-informed but also actively engaged in preserving our planet.

Ecological footprints serve as a critical measure of humanity's impact on the planet. Addressing this impact necessitates a comprehensive and concerted effort involving individuals, governments, and businesses to ensure a sustainable and thriving future for generations to come.

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Le rôle de la technologie dans l'enseignement et l'apprentissage de la langue étrangère

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Résumé

On vit dans un temps où chaque jour on témoigne un progrès en permanence accéléré par la nouvelle technologie dans tous les domaines de la vie. Il nous faudra une nouvelle approche afin de préparer les étudiants à affronter un futur si aléatoire. L'éducation fournit dans ce but agrémentée par des modifications au niveau de l'enseignement et l'apprentissage pourraient assurer un futur holistique tout en apprêtant les étudiants avec les compétences et le savoir-faire nécessaires qui les aideraient à surmonter les défis à l'avenir. Dans ce regard, l'article aborde des méthodes variées que l'on peut employer pour rendre l'éducation plus holistique en donnant aux étudiants un esprit critique et une autonomie. Actuellement, la technologie et les innovations dans cette matière ont envahi le quotidien de l'homme au tel point que, intégrer ces nouveautés se présente comme une mesure impérative dans l'enseignement et l'apprentissage. L'intelligence artificielle est un outil incontournable à l'heure actuelle que il faut trouver des nouvelles stratégies afin de fournir une éducation intégrée de ces outils et suivre le rythme de l'évolution technologique. Dans cette perspective l'article cherche à explorer quelques stratégies et les moyens

d'intégrer les nouveautés dans le domaine de l'éducation pour que l'apprenant soit bien équipé de compétences et la formation essentielle à l'avenir.

Mots clés: *Nouvelles stratégies , Education intégrée*

L'application de TIC

Le primordial rôle de l'éducation est d'engager les étudiants d'acquérir les compétences et les connaissances en vue de profiter des opportunités présentées par les développements imprévus dans les secteurs scientifiques. En outre, ils doivent s'adapter aux défis du futur.

En ce qui concerne l'enseignement de la langue étrangère, les innovations technologiques sont une aubaine à la fois pour les enseignants et les apprenants. La connaissance d'une langue étrangère est un préalable lors d'un recrutement de candidat(e), pourvu que la mondialisation a ouvert une gamme d'opportunités à travers le monde, qu'ils soient des étudiants de science/technologie ou qu'ils soient des étudiants de la littérature. Cette compétence d'être bilingue permet aux apprenants non seulement de franchir les frontières mais aussi d'assimiler dans une culture différente et agrandir leur répertoire de connaissances.

«Une innovation dans un programme d'enseignement d'une deuxième langue est un changement informé dans la philosophie sous-jacente de l'enseignement/apprentissage des langues, résultant d'une expérience directe, de découvertes de recherche ou d'autres moyens, entraînant une adaptation des pratiques pédagogiques de manière à ce que l'instruction soit mieux en mesure de favoriser l'apprentissage des langues tel qu'il est désormais compris»

L'innovation est efficace quand elle permet un vrai progrès qui contribue à un développement holistique en terme de l'enseignement et de l'apprentissage, tout en mettant en valeur les compétences acquis. L'application de TIC (Les Technologies de l'information et de la communication) dans l'apprentissage et l'enseignement de la langue étrangère est assez pratique pour les enseignants avec un accès très large aux activités proposées grâce à de nombreux outils pour rendre l'apprentissage plus animé. Les documents, les vidéos, les outils pédagogiques, disponibles gratuitement en ligne sont des trésors que l'enseignant peut exploiter pour apprendre efficacement. En plus, l'enseignant peut encourager les apprenants d'utiliser les logiciels de jeux pour réviser la grammaire et rendre la compréhension de cette dernière facile. D'ailleurs l'utilisation des TIC est l'une des meilleures façons d'explorer l'horizon sans quitter l'institution et montrer les apprenants virtuellement la culture et l'histoire de la langue qu'ils apprennent. D'une façon , les TIC octroient une autonomie aux apprenants lorsqu'ils utilisent certains logiciels tels que, Duolingo, quizziz ou le site comme loecsen.com, pour améliorer et auto évaluer leur travail.

Le role de 'chat-bot' dans l'éducation

Les avantages de l'application de la nouvelle technologie dans tous les secteurs de l'éducation sont appréciés malgré les inconvénients. L'avènement de l'intelligence artificielle semble poser une vraie menace pour les enseignants, qui s'inquiètent du développement intellectuel des étudiants, tandis que les apprenants se profitent de sa potentielle infinitive. L'expert interactif conversationnel également appelé « chat-bot » est un appareil inévitable dans le domaine de l'éducation que, l'intégration de cette technologie est crucial pour l'éducation et la formation de l'enseignement supérieur. Bien que l'émergence de la technologie

dans l'secteur éducative, pose des défis, elle se sert à guider les apprenants à l'absence d'enseignants ou à éviter de repetition, en donnant des explications, une assistance personnalisée et aussi des revues aux apprenants qui, à leur retour peuvent améliorer leur compétence d'écriture, en particulière, lors de l'apprentissage de la langue étrangère ou se préparer avant un examen en répondant aux questions, rédigées avec l'aide de chat-bot. En même temps en terme de l'enseignement, l'appareil permet l'enseignant de guider les apprenants et surveiller ou corriger les conversations entre le chat-bot et les apprenants. La plus recent innovation dans cette technologie est la possibilité de faire une conversation arugmentative qui encourage les apprenants de préparer une dissertation ou même faire un débat. Ainsi elle permet aux apprenants de maîtriser la langue qu'ils apprennent en dehors de la classe aussi.

L'apprentissage autonome soutenu par la technologie

Un autre nouveau concept qui s'avère d'être efficace dans l'enseignement et l'apprentissage de la langue étrangère est l'apprentissage autonome des langues, créé avec l'intention d'optimiser la qualité de l'éducation. Fondé dans le principal de developper de nouvelles connaissances de façon autonome, les apprenants sont guidés dans ce parcours d'apprentissage en collaboration avec les enseignants qui les aident avec un plan précis à atteindre leur objectifs, D'ailleurs l'acquisition de la connaissance de la langue étrangère est réussi en tirant profit des ressources en ligne pour améliorer leur compétence langagières: la compréhension orale, la production orale, la compréhension écrite et la production écrite. Le concept de « Échange synchrone virtuel » aussi appelé E-Tandem, permet les apprenants de communiquer avec les natives à l'étranger et perfectionner leur compétence

orale. L'échange virtuel effectué en ligne grâce à 'Skype', 'Zoom', 'Google Meet' ouvre la voie à agrandir leur connaissance par rapport à la culture de la langue étrangère. Le rôle de l'enseignant est de concevoir des activités basées sur le curriculum et de définir bien les objectifs de l'apprentissage lorsqu'ils l'utilisent à des fins académiques. En effet, grâce à cette communication directe, les apprenants s'évaluent et corrigent leurs erreurs: une autonomie qu'ils s'approprient sans leur insu.

L'optimisation de l'apprentissage avec l'aide de téléphone portable.

À titre d'innovation, l'ALAM (Apprentissage des langues assisté mobile) est en plein essor de nos jours. L'usage du téléphone portable est tellement commun chez les jeunes que l'intégration de cet appareil dans l'approche pédagogique est devenue obligatoire étant donné que ce dernier domine le quotidien des apprenants. Avec cette stratégie, mise en pratique à travers les messages, courrier électronique, le podcast d'apprentissage ou le multimédia destiné au mobile, les chercheurs ont établi le résultat positif dans l'enseignement et l'apprentissage de la langue étrangère.

« les chercheurs du projet MILLEE à l'Université de California (UC Berkeley) se sont concentrés sur les compétences simples en anglais et ont désigné une série de jeux constituant un programme équivalent à un cours ESL. Ils ont testé leur jeu d'apprentissage basés sur les téléphones portables en Inde. Ils ont rapporté que le jeu peut apporter des avantages significatifs en matière d'apprentissage et ce type d'apprentissage améliorera les compétences de base des étudiants tout en fournissant des indices sur la durabilité et la faisabilité de leur approche dans le programme de recherche de Microsoft.

En fait, l'idée principale est de soutenir les apprenants en dehors de la classe pour renforcer la grammaire, la prononciation, la compétence d'écoute et de lecture, le vocabulaire par moyen des activités simples, animé par les jeux, les images, la musique, que les apprenants peuvent travailler autrement. Disposé d'un téléphone portable toujours, les apprenants peuvent profiter du mobile grâce à la proximité, la messagerie video, l'avantage de télécharger les audio et les vidéos en suivant la bonne orientation de l'enseignant.

L'apprentissage hybride; Une nouvelle approche

Ces dernières années, l'éducation a connu une transformation énorme à cause de l'épidémie de Covid. Malgré les effets néfastes, la pandémie a fait naître de nouvelles façons d'apprentissage qui avaient permis les apprenants de suivre les cours chez eux. La naissance d'Apprentissage hybride marque le début d'une nouvelle approche dans l'éducation. En ce qui concerne l'apprentissage de la langue étrangère, les cours en ligne permettent d'accéder les enregistrements des conférences anciens avec l'aide de multitudes ressources, ils peuvent consacrer plus de temps dans l'amélioration de la langue apprise. Dans le même cadre, vient l'apprentissage des langues assisté par ordinateur (CALL), une stratégie pertinente compte tenu des avancements dans la technologie et la situation actuelle. Consulter un dictionnaire ou voir un film pour apprendre la langue dans l'enceinte de la classe désormais sera la norme de l'éducation. L'enseignant de sa part emploie une approche actionnelle, qui exige les apprenants de faire une présentation, des vidéos ou rédiger une affiche à partir de leur compétence acquise, en écran.

Conclusion

La croissance de la technologie impose l'adoption des nouvelles pratiques éducatives, de sorte qu'elles répondent aux besoins des

apprenants et développer leur compétences. Elle renforce également le besoin de l'évolution dans le cadre de l'enseignement et de l'apprentissage et de développer de nouvelles méthodologies afin de remplir les lacunes créées par les méthodes traditionnelles. Pour accroître l'efficacité de cette nouvelle démarche il faut que les enseignants soient bien formés et compétents pour offrir une gamme de tâches adaptées pour les apprenants pour qu'ils puissent naviguer dans l'apprentissage instrumenté avec la technologie. Le rôle de la technologie est indispensable dans l'éducation, la mise en oeuvre des curriculums qui entraînent un enrichissement des compétences et l'acquisition des connaissances sont le besoin de l'heure. Dans cette perspective les nouvelles stratégies discutées ci dessus prônent des nouvelles techniques à approprier pour être à jour et rendre l'expérience de l'enseignement et l'apprentissage intéressant voire utile. Au niveau de l'apprentissage de la langue étrangère, le concept de laboratoire de langues est un avancement majeur vers un futur holistic car cela rend l'apprentissage interactif, efficace. En bref, adapter une approche alternative au profit des enseignants et les apprenants est essentielle pour que les premiers puissent accompagner les derniers dans leur parcours d'apprentissage visant une croissance intégrale. Finalement, il s'agit de mélanger la pédagogie et la technologie avec l'objectif d'améliorer la qualité de l'éducation sans perdre sa valeur.

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Establishing a Visually Impaired Students' Learning Nook at Women's Christian College's Library to promote Inclusive Education in Compliance with NEP 2020

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Abstract

This abstract outlines the efforts that are to be taken to create a Visually Impaired Students' Learning Nook in the library of Women's Christian College, Chennai in accordance with the National Education Policy (NEP) 2020. By providing visually impaired students with an accessible and encouraging learning environment, the main goal of this project is to promote inclusive education. The NEP 2020 emphasizes the value of equitable and inclusive education – learning for all and offers a thorough framework for accomplishing this objective. The proposed Learning Nook will be equipped with state-of-the-art modern assistive technologies, including screen readers, braille displays, accessible computers, software and membership with DAISY Forum, Sugamya Pustakalaya for accessible education to strengthen the learning sources and services for visually impaired students. Additionally, the Nook will offer a wide range of accessible educational materials, including textbooks in braille and digital formats, reinforcing the NEP's emphasis on using

technology for accessible content creation. In compliance with the NEP 2020, the initiative will undergo regular evaluation to gauge its effectiveness in enhancing inclusive education. Feedback from visually impaired students and educators will be collected and the gaps will be addressed as continuous improvement efforts. This initiative will represent the fundamental concepts of accessibility, flexibility, and choice, ensuring that all students, including those with disabilities, receive a high-quality, equal education.

Keywords: *Equitable, Inclusive education, visually challenged, Low vision, Accessible education, Library Services, Persons with Disabilities*

Introduction

National Education Policy 2020 clearly emphasizes that the rights of Persons with Disabilities (RPWD) Act 2016 defines “inclusive education as a system of education wherein students with and without disabilities learn together and the system of teaching and learning is suitably adapted to meet the learning needs of different types of students with disabilities”. Aligning to this strategic goal and vision every school or higher education systems must relook and refurbish their facilities and services given to the student community. In this line, every library must ensure to be committed to provide full access to their range of services and seamless facilities need to be enabled to all users without any disparity. Since then, many working in libraries have taken the lead in making their physical facilities accessible to people with disabilities, having realized their responsibility to provide information resources and services to all. It is typically simple for a librarian to recognize people with disabilities who require assistance within the provided facilities.

Review of Literature

Ronel Ferreira & Maesala Manis (2022) discussed how education policies may overcome systemic obstacles and promote equity in classrooms. Authors discussed the application of inclusive education policies with visually impaired students in this article. This research was a part of a larger project that concentrated on creating pathways for students with visual impairments to attend the schools of their choice and receive a high-quality education. The results validate that educators believe they are not sufficiently prepared to instruct students with visual impairment outside of schools for the blind, that mainstream schools lack the necessary resources to meet these students' needs, and that the government has not yet addressed the consequences of inclusive education policies.

Hoskin et al. (2022) described the utility of braille for the blind and visually challenged, little research has been performed to investigate the use of technology to promote braille literacy education. It is necessary to conduct analysis of the impact of using assistive technology on academic performance for blind or visually impaired children and teens. Authors looked through sixteen databases in academic education, health sciences, transdisciplinary, rehabilitation, and engineering. According to the authors, the overall quality of the research was poor, with insufficient data to justify the use of current technology for braille literacy education. Braille literacy technology evaluation standards must be developed.

Deep Kumar & Madhu Singh (2022) described the national education policy 2020, the challenges faced by women, minorities, and children with special needs have been effectively addressed by the NEP 2020. Authors analysed the good job of proposing several admirable solutions, such as education SEZs, to address the

systemic problems with education in remote places. Nevertheless, there are a number of problems with the new approach. Similar to this, its silence on affirmative action for specific groups can result in a variety of implementation problems.

Mukesh Chand Bharti (2022) described the national education policy 2020 encompasses provisions across all levels for the promotion of libraries in the digital realm. In today's age of technology, it is evident the libraries will have a crucial role to play in the advancement of research and education. Authors concluded the libraries play a crucial role in equipping the nation with quality education and guiding its progress in the right direction.

Munish Saini et al. (2021) said that the system is regarded perfect if it provides the desired results when put into practice. They must keep an eye on the NEP's implementation. If any other changes are required, it could be incorporated later on. Authors hope to obtain and assess the reactions of various stakeholders in the education system. Furthermore, they intend to use their findings to assist the educational regulatory authority.

Nahid Bayat Bodaghi et al. (2016) studied moves toward the issues from the outwardly debilitated understudy's viewpoint towards curators' help. This study was directed by utilizing the subjective methodology. Information was gathered through meetings and center gathering conversations. For reliability of information, part checking and review from specialists are likewise utilized. The members of the review commented that the bookkeepers' cordial conduct gave them a feeling of being acknowledged, esteemed, really focused on, regarded, and invited which encouraged the formation of their feeling of having a place.

Muttayya (2009) talked on the commitment libraries must make to provide their user community with complete access to

their array of services and facilities. The study focuses on using computers and assistive technology of a "Learning Resource Center for the Visually Impaired Students" to meet the objectives of "inclusive education" in the Indian higher education system. The necessity and extent of offering disability information services to university staff, research scholars, professors, and students with disabilities are examined, with reference to many reports from relevant ministries, organizations, and commissions. The M. K. Tata Memorial Learning Centre for Visually Challenged Students is highlighted as a successful example to show how the university library's information resources and services could be extended to its. In order to promote inclusive education, it also lists the key characteristics, unique services, unique resources, assistive and adaptive technologies, and forward-thinking goals of a cutting-edge "Learning Resource Center for the Visually Impaired Students".

With an emphasis on adaptive technology, Saumure, K. and Given, L.M. (2004) investigated the academic information habits of undergraduates who are visually impaired. Preliminary results show that technology, active support networks, and individual will improve kids' information behaviors. The findings also demonstrate that students face difficulties related to lack of time, feelings of dependency, in comprehending others, and restricted access to internet resources. They look into ways to make library services better, like allowing libraries to share adapted resources (like Braille materials) and developing programs that support visually impaired students' information habits without compromising their sense of independence.

Research problem

To create an environment that is conducive to learning and to allow students who are blind or visually impaired to freely utilize

the resources and services of the library, regardless of their field of study. The needs of students with disability of Women's Christian College were interviewed and the requirements were assessed.

Significance of the study

The 'Nook for the Visually Impaired Students' is expected to serve the purposes outlined below:

- a) to give visually impaired students "Equitable and Inclusive Access
- b) to enhance the national higher education system's "Access Audit"
- c) to provide access to scholarly knowledge sources.
- d) to investigate the opinions of institutions regarding "Disability Information Services"
- e) To prepare library staff to provide information services to students with disabilities.

Objectives

- ✓ To promote inclusive education
- ✓ To provide equal library services and access to all the visually impaired students
- ✓ To provide 24*7 access to e-books and e-journals through memberships with DAISY Forums.

Methodology

Students who are blind or partially sighted must have other ways to access print resources. Although technology facilitates access, adapted materials such as audio textbooks are widely available in a variety of formats. Hence, it is a responsibility and

need of the hour for every library to equip its infrastructure to suit the PwDs. To bridge this gap the details of visually challenged students and students with partial vision was collected from the College's official sources. An interactive session was carried out with such students to understand their difficulties in accessing library resources and services. Based on the inputs provided by those students further studies were carried out to understand the availability of various equipment, software and the cost involved etc. It is learnt that adaptive technology magnifies print or transforms it into audio or tactile forms, while speech synthesizers verbalize electronic resources. Also, verified the services provided in other Higher Education institutes to have the clarity. A detailed requirement plan was thus compiled. It is discovered that certain services provided in various formats may be able to assist the blind in the workplace, classroom, or home management. It is discovered that regular personal computers can be customized with large print, voice, or Braille modifications.

Tools and software availability in India

The tools and software found suitable to provide the services are Angel India Online Daisy Player is a completely Talking Daisy Player, E-Book Reader, Voice Recorder, Internet Radio, Podcast Receiver, and USB Pen Drive Connector - an ideal study aid for students. It is wi-fi enabled using even the hot Spot of Smart Mobile Phones enabling students to Download books from Online Library - Sugamya Pustakalaya, Bookshare and 100 Podcasts pre-selected on the Angel India on Line even if they do not have the WIFI facility. It speaks English and Hindi and reads 12 Indian languages such as Hindi, Marathi, Gujarati, Punjabi, Sanskrit,

Tamil, Telugu, Kannada, Malayalam, Bengali, Oriya, Bhojpuri. Angel therefore makes it possible to enable the blind

user to also read the regional language books easily. Just select the local language book say Tamil and press the OK key and Angel will instantly start reading in the local native voice.

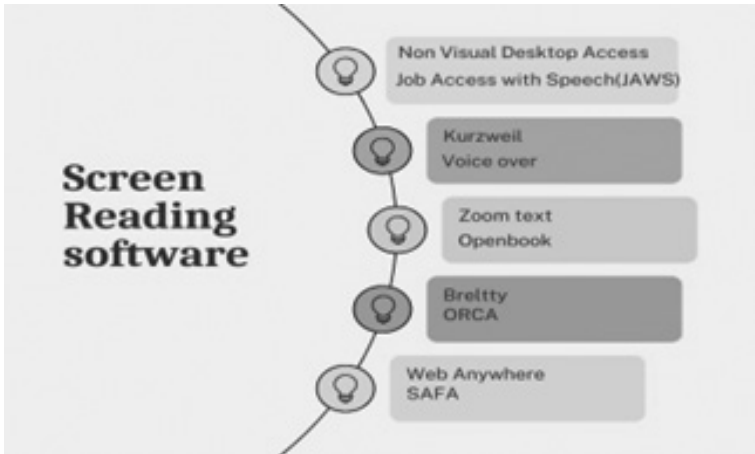


Fig. 1: Screen Reading Software
Source: Author's Compilation

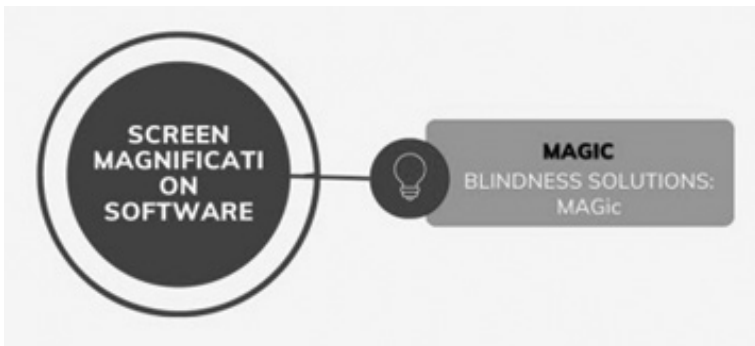


Fig.2: Screen Magnification Software
Source: Author's Compilation

JAWS is a powerful screen reading program with Braille support that allows blind people to use computers. It is available in 7 Indian languages, including English, Hindi, Marathi, Bengali, Tamil, Telugu, Kannada, and others, and provides a very high level of accessibility and efficiency to blind and low vision people. It is the only software in the world that allows visually impaired people to access E-learning! It converts a regular PC into a talking computer, allowing individuals to independently compose their notes, tests, or courses. JAWS Pro screen reading software offers an Indian accent voice Veena for English and Lekha for Hindi for simple understanding, allowing blind people to operate computers independently in all Microsoft environments.

PEARL and OpenBook are portable scanning and reading solutions for visually impaired or those with limited vision. It turns printed text into human-like speech and includes scanning capabilities. It scans the books' pages very quickly and also maintains pagination. It enlarges and reformats text for easy viewing and allows you to export to other applications such as Microsoft Word or Notepad. Folds neatly into the provided carrying case, connects to a PC by USB, and requires no additional power.

Table 1: Low vision Devices

Prismatic Spectacles 10D	Spectacles
Aspheric Spectacles 20D	Spectacles
Fresnal book Magnifier: Hand held magnifier & Pocket Magnifier	Lenses
RUBY	Video Magnifier
Plex Talk Devices	Digital book reader, Mp3 music player, Voice recorder

Index Braille BasicD V4 Printer	Translating software
EL-Braille Machine Note Taker	Display
Kibo XS device	Converting text book
PEARL camera	Scanning and Reading software
Web Accessibility Initiative (WAI)	Modern technology

Discussion

The NEP 2020 heralds a new era in Indian education, emphasizing the significance of equitable and inclusive education for all. The introduction of a Learning Nook tailored to the needs of visually impaired students is a concrete step towards realizing these goals. Inclusivity is at the heart of NEP 2020, which underscores the need to cater to the diverse learning needs of all students, including those with disabilities. By implementing this Learning Nook, Women's Christian College is demonstrating its commitment to the principles of NEP 2020.



Fig 3: NEP 2020 Source: Author's Compilation

The proposal to equip the Learning Nook with state-of-the-art assistive technologies such as screen readers, braille displays, accessible computers, software, and membership with organizations like DAISY Forum of India (DFI) and Sugamya

Pustakalaya represents a crucial component of this initiative. The Daisy Forum of India organizations involved in production of Braille, Talking or large print Books for persons who cannot read normal print created a forum called the DAISY Forum of India. These technologies will empower visually impaired students by providing them with access to digital and printed materials in formats they can use. This not only aligns with the spirit of NEP 2020 but also underscores the importance of using modern tools to make education accessible and enjoyable for everyone. The Learning Nook's provision of a wide range of accessible educational materials, including textbooks in braille and digital formats, aligns with the NEP 2020's emphasis on utilizing technology for accessible content creation. By ensuring that educational materials are available in various accessible formats, the initiative enables visually impaired students to engage with their studies independently and effectively. This addresses a significant barrier that these students often face in mainstream educational settings. An essential feature of the initiative is its commitment to regular evaluation. Gathering feedback from visually impaired students and educators and using it to address gaps and enhance the services offered is in line with the NEP 2020's emphasis on evidence-based decision-making and continuous improvement. This approach ensures that the Learning Nook evolves to better meet the unique needs of its users and remains aligned with the principles of inclusive education.

Implications and Conclusion

Establishing a Visually Impaired Students' Learning Nook at any Library would certainly be beneficial as it fosters inclusive education ensuring that all students, regardless of their abilities or disabilities, have equal access to quality education. The

library staff would be able to understand and assess what kind of accommodations a patron in a wheelchair or with a white cane might require to access particular library materials when they arrive at the library. When a visually impaired individual utilizes voice output technology in a library but is unable to use some resources due to their inaccessible design, library staff members would be able to recognize the patron's difficulties and are willing to assist by reading screen text. Providing them access via Daisy Forum would enable them access e-resources independently 24*7. Such equal opportunities and dedicated space for visually impaired students demonstrates any institution's commitment to diversity, inclusion, constant assistance thus leads to improved learning outcome and academic performance. This initiative can also involve the broader community, including alumni, donors, and volunteers who can contribute to making the learning nook a success. It can create a sense of community engagement and support.

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Innovation in Curriculum through e-Teaching and e-Learning

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Abstract

An evolving world demands dynamic education. It develops into emerging trends such as personalized learning, interdisciplinary approaches, and technology integration, highlighting their impact on fostering critical skills for tomorrow's challenges. Emphasizing the necessity of adapting to change, this abstract advocates for embracing innovation in curriculum to empower learners for an ever-evolving landscape. The transformative impact of innovative curriculum in modern education. It highlights the integration of emerging technologies, personalized learning, and interdisciplinary approaches as core components. Emphasizing the fostering of critical skills like problem-solving and adaptability, it explores successful implementation models across diverse disciplines and educational levels. Additionally, it discusses challenges and the need for ongoing evaluation and collaboration among stakeholders. Ultimately, it advocates for embracing

innovative curriculum to cultivate agile, future-ready learners in today's dynamic world.

Keywords: *E-learning and E-teaching, video lecture, jamboard, math website.*

Introduction

Innovation in the curriculum is a critical component of educational progress. It involves the continuous evolution of educational content, methodologies, and approaches to better meet the changing needs of learners and society. An innovative curriculum moves beyond traditional rote learning and embraces dynamic, interactive, and adaptable methods that foster critical thinking, creativity, and problem-solving skills. One key aspect of innovative curriculum design is relevance. It aims to bridge the gap between theoretical knowledge and practical application by integrating real-world scenarios, current affairs, and practical experiences into the learning process. By using this method, pupils' comprehension is improved and they are also more equipped to deal with the challenges of the contemporary world. To investigate the relationship between innovation and education, diving into curriculum creation, instructional strategies, and the incorporation of technology in the classroom. By throwing light on these critical issues, we seek to provide a thorough understanding of the role of innovation in defining education's future.

Innovation in Education

Innovation has become a buzzword in the education sector, with educators and policymakers recognizing the need for change to meet the demands of the ever-evolving global landscape. As such, the quest for innovation in curriculum and teaching methods

has gained significant traction in recent years. Innovation is one of those words we like to throw around whenever possible. To innovate is to alter something or approach something from another point of view. Creativity does not require funding; instead, we must rely on our own creativeness and adaptability. Education innovation is not a precise phrase with a definite definition. The spirit of innovation education is a willingness to look at challenges from new perspectives and approach them in novel ways. It is an acknowledgment that we do not have all the answers and that we are receptive to novel ideas for improvement, including creative teaching techniques and ways to transfer knowledge.

Recognizing the benefits of a flipped classroom model, where students watch lectures at home and complete tasks in class. Creating a hybrid classroom by incorporating technology to simulate real-world experiences for students. Use strong video capabilities to improve communication between school district parents. Innovation in education stems from identifying problems, observing and learning from others, devising new approaches to solve these problems, and iterating on them when experiments do not yield the desired results.

Video lecture

Video lectures are a fantastic way to learn and engage with educational content. They're like having a classroom experience right on your screen, often allowing for pause, rewind, and review, which can be quite helpful for complex topics. They come in various formats, from recorded classroom sessions to specifically created online courses. Many platforms offer them, catering to a wide range of subjects and skill levels. The interactive aspect might vary, but some provide quizzes, forums, or assignments to enhance learning.

Jam board

Jamboard is a collaborative digital whiteboard created by Google. It's a cloud-based application that enables people to develop, share, and discuss visual concepts in real time. Consider it a digital canvas in which several users can participate at the same time from various locations. Key features of Jamboard include:

- **Interactive Whiteboard:** It provides a blank canvas where users can draw, add text, insert images, and use sticky notes to brainstorm or illustrate concepts.
- **Real-time Collaboration:** Multiple users can work on the board simultaneously from different devices, making it great for remote teamwork or virtual classrooms.
- **Integration with Google Workspace:** It seamlessly integrates with other Google apps like Google Drive, allowing easy access to files and documents.
- **Toolset:** It offers various tools such as pens, erasers, shapes, and the ability to add images or sticky notes, making it versatile for different types of content creation or collaboration.
- **Accessibility:** Jamboard is accessible through web browsers and has dedicated apps for iOS and Android devices, making it flexible and compatible across different platforms.

It's commonly used in educational settings for virtual classes, in business environments for brainstorming sessions or collaborative meetings, and in various other scenarios where visual collaboration and brainstorming are essential.

Math websites

The list includes several useful math websites. Teachers have specifically chosen these resources to use with their pupils.

A plus arithmetic offers interactive materials for teachers, parents, and students, including free arithmetic worksheets, games, and flashcards.

Math TV is a portal that hosts a variety of math videos addressing mathematical ideas. These videos are available by topic or textbook.

AAA Math provides thousands of arithmetic lessons from kindergarten to light grade. There is also unlimited practice on each topic, allowing for conceptual mastery.

Math Fun: The goal of this website is to be pleasant. It includes a wide range of lessons and activities created by teachers and members of the math community from all around the world.

Math Central is an online resource for math students and teachers. This website is maintained by math and statistics faculty and students at the University of Regina in Canada.

The Role of Curriculum in Student Learning

The curriculum acts as a road map for student learning, describing the knowledge, skills, and competencies that students are expected to master. Curriculum creation has long been a systematic procedure with preset subjects and rigorous structures. However, in recent years, there has been a significant trend toward a more adaptable and dynamic approach to curriculum design. Educators are increasingly embracing the concept of personalized learning experiences, in which the curriculum is adapted to the

unique needs and interests of pupils. This transformation is being driven by the realization that a one-size-fits-all approach to education is no longer successful in matching the diverse learning styles and preferences of 21st-century students.

Evolution of Teaching Techniques

The evolution of curriculum design and teaching techniques has also been a pivotal aspect of innovation in education. Traditional teaching methods, characterized by didactic instruction and rote memorization, are being gradually replaced by a more student-centered approach that prioritizes active engagement and inquiry-based learning. One notable development in teaching techniques is the implementation of flipped classrooms, where the traditional model of lecture and homework is inverted. In a flipped classroom, students learn about the course material outside of class, typically through online videos or texts, and then use class time for collaborative discussions, problem-solving activities, and hands-on projects. This method not only facilitates more individualized interactions between educators and learners, but it also encourages active engagement that leads to a deeper comprehension of the subject.

Examples of educational innovation

Educational innovation can take various forms, as demonstrated. Remember, it's more than just bringing new technology into the classroom. It could be a new way of teaching a certain activity or topic.

Project-Based Learning (PBL) teaches students how to identify and solve real-world problems. Introduce a PBL unit as part of a bigger lesson, allowing students to practice creative thinking, problem-solving, and teamwork with their peers.

Blended learning is the process of integrating traditional classroom instruction with internet learning. Students must become familiar with online technologies and use the internet to help them learn. A mixed learning approach allows students to learn how to best use resources that they will rely on in their future careers.

Educational technology (Ed tech) is any software, application, or service designed to improve education. We must exercise caution while implementing technology in the classroom. Innovative classroom tools frequently reflect advancements outside of schooling. So, the more kids interact with technology in the classroom, the more prepared they will be to interact with and use technology in the workplace.

Advantages of E-Learning and E-Teaching

- **Accessibility and Flexibility:** Learners and teachers can access educational materials from anywhere with an internet connection, enabling flexible scheduling and personalized learning paths.
- **Cost-Efficiency:** E-learning can reduce costs associated with traditional classroom settings, such as travel, printed materials, and facilities, making education more affordable and accessible.
- **Self-Paced Learning:** Students can progress at their own pace, revisiting difficult concepts or moving quickly through material they grasp easily.
- **Increased Engagement:** Multimedia elements, interactive quizzes, and gamification can enhance engagement and retention of material.

- **Global Reach:** E-learning platforms enable access to a global audience, allowing the sharing of diverse perspectives and experiences.
- **Scalability:** E-learning can accommodate large numbers of learners simultaneously without significant infrastructure changes.

Disadvantages of E-Learning and E-Teaching

- **Technological Requirements:** Access to technology and internet connectivity can be a barrier for some students and teachers.
- E-learning may not provide the same level of personal connection and feedback as traditional classroom settings.
- **Self-Motivation and Discipline:** Learners must possess self-discipline and motivation to stay engaged and complete courses without direct supervision.
- **Social Isolation:** E-learning may lead to a sense of isolation for some learners who thrive on social interaction in a traditional classroom setting.

Conclusion

The growth of teaching methodologies aligns with the goal of developing 21st-century capabilities and preparing students for a changing world. As educators accept these radical advances in curriculum and instructional techniques, the opportunity to build a generation of adaptive, critical-thinking individuals becomes more accessible. Curriculum innovation is critical to educating students about the complexities of today's society. It entails providing dynamic, relevant, and personalized learning experiences that

promote critical thinking, adaptation, and a lifetime love of learning. Education has the potential to impact future generations by embracing innovation in curriculum design and delivery.

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Sustainable Innovative Teaching Methods and Its Impact On Student Progression

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Abstract

Education is the most powerful tool that can empower a woman to boldly face the challenges of tomorrow. It is a process that helps to develop an individual holistically. Good methods of imparting this education are very necessary in order to enhance their personal skills, identify their potential and set themselves on par with the growing needs of the present-day technology and scientific advancements. In this scenario, it is a huge challenge to the teachers and facilitators to cater to the growing demands of the fast-growing field of education. This has brought in a realization that just right knowledge will not suffice, and one should develop methods for innovative teaching. With the development of technology and the exposure that the present-day students have towards the internet, particularly towards information and communication technology; it has posed a great challenge to teachers who now have to be updated with the latest in

their field of teaching. In order to keep pace with the growing demand for more effective teaching, the department has embraced a few innovative methods of teaching.

Keywords: *Education, Innovation, Pedagogy, classroom, teaching, Experimenting, Information technology.*

Introduction

In this competitive world, it is the duty of the education system to play a pivotal role in the development of strong young people not only physically but also intellectually, emotionally and ethically so that they become responsible citizens of the nation. The education system should be designed in such a way that it educates the students holistically so that it will be able to kindle the interest of the students. This calls for innovative teaching methods and communication skills that provide sound knowledge. Innovative and the latest pedagogical methods have been incorporated in the teaching -learning methods to ignite the interest of the students and to hold their attention for an extended period of time. These innovative practices are a combination of talk and chalk, text, images, audio-visual and interactive play way learning sessions. In education, keeping a student attentive and engrossed in the classroom without any distractions measures the degree of attentiveness, interest, concern and passion for the subject. This will then motivate students to want to know more, increase their attention span and help them learn more about the subject. Students who are involved in the class always want to learn more and enjoy answering questions, are curious to ask questions and complete assignments on time. Innovative teaching needs a lot of interest and hard work from the teacher's point of view. The teacher should be able to bring out methods to make her classes interesting which will make students look forward to

her classes and see that they do not miss even one session. The teacher should be able to alter her style and include interesting and newer pedagogy. The teacher should be more of a facilitator which would serve for overall development of the student not only for the present but also to help students to reach their full potential for the future. Innovative teaching is the norm for the present-day educators. To achieve this, teacher competency is a key factor. Teachers should have a passion for the subject they handle which itself will be a driving factor to bring about innovative methods of teaching. Here are some innovative methods of teaching followed to make classes more interesting.

Student Self-appraisal – SWOC Analysis

This is an innovative practice of the department where a SWOC analysis is done for the first year students. They are asked to give a true picture of themselves. What they write is not discussed with other fellow students of their class. Students who have personal problems are counselled and taught coping mechanisms and self confidence to tackle the issues. Students with learning disabilities are given special training to clear their examinations. This practice helps the student to open up about herself which in turn gives her confidence and a feeling of belonging in the department. It builds a positive rapport between students and teachers.

Public Awareness through Posters

Textual learning might often be boring and monotonous for students. This method allows students to make their own posters on issues such as environmental sustainability, general awareness of First aid methods, socio-ethical issues and conditions that occur due to psychological disturbances. The posters made by the students are displayed to be viewed by the students and staff

of other departments. The posters are judged by a subject expert from a related department and prizes are given to reward the effort put by the students. This encourages our students to bring out the best in their posters. This motivates them to learn more about the topic they have chosen by browsing through the internet collecting information from the teachers and showcase their creativity. This technique encourages students to better their knowledge in the subject. It also develops healthy competition among the peers.



Fig 1: Public Awareness through Posters emphasizing on Environment protection

3D Modelling of Scientific Instruments

Students will understand better if the theoretical knowledge of scientific techniques can be brought to reality by 3D modelling of those scientific methods. Students are encouraged to build working and non-working model of scientific procedures that are taught to them in class. They compete to make the most realistic model. At the same time, they learn from each other about the manufacturing of the model and its applications. In the skill based courses, students

are encouraged to organize their own first aid box. Emphasis is made on the fact that these students from a non-science background understand the importance of a first aid kit at home and in their workplace. Such activities give the students the opportunity to learn better what otherwise would have been a monotonous theory class.



Fig 2 : 3D Modelling of Scientific Instruments

Demonstrations – Learn from the Experts

Demonstration classes always hold the rapt attention of students, and when it is a demonstration by trained personnels in the field and if students are given hands on training that would be a plum on the cake. The department brings in experts in first aid and self-defence to give hands-on training for the students. The girls follow these sessions so intently with utmost attention. These sessions are arranged to help empower our girls to boldly face the prevailing dangers of the world. Trained experts from scientific instrument suppliers are invited to demonstrate the functioning of sophisticated instruments. This helps our students to apply their theoretical knowledge to the practical uses of these instruments. Similar workshops are conducted for students and staff of other departments as well.



Fig 3: Demonstrations and hands on workshops by invited experts

Enhancing Diet Conscious Culinary Skills

Students are encouraged putting into practice a healthy lifestyle by making them prepare nourishing dishes and displaying them in the department. Students particularly from non-science departments find this an interesting way to learn about the nutritive value of food. This not only develops their culinary skills but also makes them understand the importance of healthy food. The girls are asked to choose only healthy ingredients and remember the necessity to always have a balance in their nutritional intake. The students participate enthusiastically and insist on the teachers tasting their delicacies. Students are very creative and show great interest in displaying their dishes. This method makes students understand the need for the presence of macro and micronutrients in food and teaches them the ill effects of junk and fast foods.

Pedagogics through Multimedia

Some of the topics taught in class are often better absorbed by students if they are taught through audio visual tools. Teachers

make their own videos or show the students videos downloaded from the internet or YouTube. These sessions create a good impact on students. This is evident from the fact that they ask the teacher a lot of questions about the topic. This interest shown by the students directly encourages the teachers to get more innovative methods of teaching.

Worm it out through Quizzing

Quizzes are conducted both online and offline for students using quizzing apps available on the internet. Students find this way of learning very interesting and can remember answers better than just reading written notes. It gives the students an opportunity to delve deeply into the subject to find out the exact answer. Group quizzes help to build camaraderie and healthy relationships among the students.

Deliberate and Introspect

Through this debating technique, the student is forced to read more about a given topic so that she has points to tackle the opponent. The students by indulging in this technique understand the pros and cons of a topic which in turn gives them a clear understanding of the subject. The students write answers with more clarity as they have mastered the subject on their own by learning the topic in depth.

Recalling Key words through Word Building

A technique which started off as a free time recreation word game was converted into a method by which students learn to

remember important terms and keywords in a topic. By having a good knowledge of the important terms in the topic students can recall the answers with ease. This method specifically helps the slow learners who find it difficult to remember and memorize important key terms.

Class away from classroom

Field trips have been made a most important part of teaching. Confining within the classroom may make students bored and feel the teaching go lifeless at times. Taking students out of the classroom and letting them see in real time what the books tell them will be a very refreshing experience. This way of teaching has been made mandatory every semester for students so that no one is left behind to lose the experience. Students are very enthusiastic about these trips as it also invariably includes a sightseeing trip. Visits to places like industries, research laboratories, institutions of repute both government and non-government; within the city and outstation are a welcome source of learning which the department has very well utilized.





Fig 4 : Industrial visits to CIBA , ECR Chennai & JSS college of Pharmacy, Mysore

Games for Personality Development

Innovations brought out in the department would reach the students only when they understand and realize that we teachers are bringing out new teaching methods keeping the student's development in mind. This can be conveyed to students by making them know that they can approach the teachers freely to discuss their doubts and problems. For this purpose, teachers also join the students in fun and game activity in the department. Programmes such as teachers' day, freshers party, farewell parties and Chris mother and Chris child game during Christmas season are some of the opportunities that are made use by the teachers to mingle with the students and also help them understand the importance of discipline during non-academic events.



Fig 5: Games for Personality Development – Chris mother & Chris child game played within our department students

By the Students for the Students

Leaving students on their own to make decisions and conduct academic and non-academic events inculcates in them the sense of moral responsibility and independence. The department delegates the job and allows the students to organize the event. The students through this practice learn to effectively use their organization skills in conducting the programme, carefully monitor the expenses and learn to work with fellow students with unity. This innovative method helps in making good decision makers, handling finances well and accepting the differences of opinions among their classmates. Holistic growth is not just academics but learning ethical life skills which will help them overcome challenges in their day-to-day life.



**Fig 6: Farewell party organized by the juniors
(I M.Sc Biotechnology)**

Conclusion

In this paper, the innovative teaching and learning methods incorporated by the department have been shown. Encouraging students to adapt to new methods in technology and the effective use of multimedia help the teacher to present the class in a more meaningful way. This innovative teaching will help the teacher

present the topics in a more meaningful and interesting way. Through these innovative modules, students will understand the class better, feel free to interact with the teacher and retain whatever they have learnt forever.

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A Review on Intelligent Filtering-Based Student Course Recommendation System Using Machine Learning

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Abstract

In the ever-evolving landscape of education, providing personalized and tailored learning experiences is paramount to fostering student success. This research work introduces an innovative approach to education enhancement through the development and implementation of a student course recommendation system using Machine Learning. The main goal of the review is to provide students with customized course suggestions by utilizing Machine Learning Techniques, such as collaborative filtering, and content-based filtering by hybrid models. A carefully selected dataset is included, which includes demographic data, academic records, and job aspirations. This dataset is pre-processed and exploratory data-analyzed to guarantee its relevance for effective predictive modeling. This recommendation system generates user suggestions by using collaborative filter techniques to find trends in user- behavior. Furthermore, content-based filtering is incorporated to take course characteristics and content into account to provide precise suggestions. This review highlights the importance of enabling students to pursue meaningful and rewarding career pathways in addition

to enhancing additional course suggestions. The research concludes with a thorough evaluation of the recommendation system's performance using established metrics, providing insights into its accuracy, precision and overall effectiveness. This project contributes to the advancements in education, offering a scalable solution for institutions aiming to enhance the quality of guidance and support provided to their students fostering personalized, engaging, and successful educational journeys.

Keywords: *Machine Learning, Intelligent filtering, Content based filtering,*

Introduction

Course recommendation systems use machine learning and data analysis techniques to provide personalized suggestions based on users' interests, academic backgrounds, and learning goals. They are commonly used in online learning environments to help students navigate a wide range of courses and make informed decisions.

Course Recommendation System Using Machine Learning

The Student Course Recommendation System (SCRS) is a machine learning-based system that uses algorithms to analyze user preferences and course features. It generates personalized course suggestions using content-based and collaborative filtering strategies. This system optimizes students' educational experience by providing context-aware suggestions. The study explores the ethical implications, adaptive elements, and design concerns of SCRS, which aims to transform current educational systems by offering a customized and effective method of course selection.

Challenges of Existing System

Students face challenges in selecting optimal courses aligning with their academic goals and career aspirations. Existing systems lack personalization and struggle to adapt to individual preferences. This research addresses these issues by developing an AI-driven student course recommendation system, aiming to enhance the educational experience and facilitate informed decision-making for students.

Objective of this Research Work

The system's primary objectives are centred on maximizing student engagement, promoting academic performance, and contributing to a more effective and customized learning environment. By delivering individualized and data-driven course recommendations, the system aims to empower students in their educational journey, aligning with their unique preferences and learning styles. In doing so, the system strives to make a positive impact on the overall educational experience, fostering a dynamic and adaptive learning environment that caters to the diverse needs of students.

- Utilizes advanced machine learning for personalized course recommendations.
- Analyzes course features, academic performance metrics, and user interactions.
- Aim to optimize user experience and empower students.

By integrating sophisticated recommendation algorithms and leveraging diverse datasets, the project aims to create a personalized learning environment that fosters engagement, meets

individual learning needs, and adapts to the evolving priorities and objectives of students throughout their academic journey.

Scope of the Research

A student course recommendation system is being developed using machine learning to offer personalized, situation-specific course recommendations. The system analyzes data from user interactions, academic achievements, and personal preferences. It uses algorithms to identify trends and correlations, ensuring fairness, transparency, and responsible data use. The system is designed to accommodate changing learning goals and preferences while incorporating ethical measures to protect user privacy. Continuous assessment processes evaluate the system's effectiveness

Review of Literature

Systematic Review of Recommendation Systems for Course Selection

Algarni, Shrooq, and Frederick Sheldon (2023). Course recommender systems are increasingly important in education for personalized learning. Content-based filtering (CBF) and hybrid systems combine their advantages to suggest courses based on students' learning preferences and objectives. These systems help overcome cold-start problems and domain expertise requirements. Lu, Jinliang (2022). proposed a Survey of Online Course Recommendation. Techniques on course Recommendation system for online learning has steadily emerged as a vital method of knowledge acquisition. However, individuals are finding it more and more challenging to select relevant learning materials from a vast array of educational resources due to the growing volume of data. Lynn, N. D., & Emanuel, A. W. R. (2021). A review on

Recommender Systems for course selection in higher education discusses the application of recommender systems in the context of higher education to help students make informed decisions about choosing courses that align with their skills and interests. Recommender systems, commonly used across various disciplines, aim to assist users in navigating information overload by providing personalized recommendations. “Course Recommender System Architecture with Sentiment Score”- Kumar, R., & Bhatia, S. (2021). The research proposes a novel approach to optimizing recommender systems by incorporating sentiment analysis as a booster, with the goal of enhancing the quality of course recommendations. Recommender systems have gained widespread acceptance due to their ability to provide personalized and effective suggestions, and this study introduces a unique dimension by leveraging sentiment scores as an additional factor.

Course Recommendation System using Machine Learning

Rao, D. D., & Manohar, P. M (2023) proposed a Course Recommendation System using Machine Learning uses the principles of decision trees in machine learning, this project develops a machine learning-driven course recommendation system that offers a practical way to make choices and provide every conceivable result. “An Effective Mechanism for Personalization of Student Behaviour Using Sequential Pattern Mining”-Sundari, M. R., Pvgd, P. R., & Srinivas, Y (2020). The study aims to create a personalized student recommendation system using web usage mining techniques. It uses association rule mining, Markov models, and WAP-tree algorithms to generate various suggestions based on user web access behavior. “A systematic review: machine learning based recommendation systems for e-learning”-Khanal, S.

S., Prasad, P. W. C., Alsadoon, A., & Maag, A. (2020). The paper highlights the increasing complexity of online learning resources, highlighting the use of personalized systems, recommendation engines, and adaptive e-learning, often utilizing machine learning techniques.

Recommender Systems for course selection in higher education

“A College Major Recommendation System”-Stein, S. A., M. Weiss, G., Chen, Y., & Leeds, D. D. (2020). This study addresses the critical issue of college students facing challenges in choosing a discipline, a decision that significantly impacts their academic journey and future career paths. “Course Recommendation for University Environments”-Ma, B., Taniguchi, Y., & Konomi, S. I. (2020) The paper addresses the challenges associated with course recommendations in a traditional educational institution, emphasizing the complexity of the selection process for higher education compared to the relatively simpler context of Massive Open Online Courses (MOOCs). “A review of recommender systems for choosing elective courses”- Maphosa, M., Doorsamy, W., & Paul, B. (2020). This paper on Review of recommender systems for choosing elective courses says that Students in higher education have difficulties while selecting optional courses for their study plans. Advisors are employed by the majority of higher education institutions to help with this responsibility.

Course Recommender System Based on Hybrid Approach

“Cluster Based Association Rule Mining for Courses Recommendation System.”-AlZoubi, W. A. (2019). This research focuses on the development of a course recommender system, with particular significance for first-year university students who may

encounter challenges in selecting the appropriate optional courses for a given semester. “Goal-based course recommendation”- Jiang, W., Pardos, Z. A., & Wei, Q. (2019). This research addresses the need for improved student preparation for target courses by introducing a novel recommendation system based on recurrent neural networks (RNNs). This system is designed to be personalized, taking into account the estimated prior knowledge background and the zone of proximal development for each student. A collaborative recommendation system for online courses recommendations “-Obeidat, R., Duwairi, R., & Al-Aiad, A. (2019). The study introduces a collaborative recommender system using data mining to help students find online courses, focusing on clustering students into similar groups based on their course selections for improved association rules.

Dataset

Dataset Description

The dataset can be used to develop a recommendation system that analyses the historical data of students' course enrolments, their performance, and additional factors to suggest courses that align with their academic goals and preferences. Machine learning algorithms can be applied to predict future course preferences based on the patterns observed in the data.

Attribute Information

Student Demographics

Student Demographics in Educational Platforms

- Captures essential demographic information for personalized recommendations.
- Key components: UID number, user name, gender, skills, and course.

- UID number maintains data integrity.
- User names facilitate tracking.
- Gender identifies potential trends.
- Skills provide insights into academic pursuits.
- Course names understand students' academic preferences.

Academic Performance

Information regarding the academic performance of each student is essential. This includes grades, GPA, and performance in specific courses over time.

Learning Preferences

This section aims to create nuanced understanding of individual learning styles and preferences, allowing the recommendation system to offer more personalized and effective course suggestions.

Sample Data

The foundation for developing a recommendation system that considers student demographics, course specifics and enrolment history is provided by this dataset structure. By evaluating this data and creating individualized course suggestions for each student based on their interactions, performance, and preferences, the system may make use of machine learning techniques.

ID	Gender	Degree	Major	Minor	Computer Skills	Math Skills	Writing Skills	Other Skills	Work Experience
1	Female	B.S.	Computer Science	Mathematics	Yes	Yes	Yes	Software Development	Yes
2	Male	B.S.	Computer Science	Engineering	Yes	Yes	Yes	Software Development	Yes
3	Female	B.S.	Psychology	Human Resources	Yes	Yes	Yes	Human Resources	Yes
4	Male	M.S.	Commerce	Marketing	Yes	Yes	Yes	Marketing	Yes
5	Female	B.Tech	Instrumentation	Electronics	Yes	Yes	Yes	Instrumentation	Yes
6	Male	B.Tech	Computer Science	IT	Yes	Yes	Yes	IT	Yes
7	Female	B.Tech	Computer Science	IT	Yes	Yes	Yes	IT	Yes
8	Male	B.Tech	Computer Science	IT	Yes	Yes	Yes	IT	Yes
9	Female	B.Tech	Computer Science	IT	Yes	Yes	Yes	IT	Yes
10	Male	B.Tech	Computer Science	IT	Yes	Yes	Yes	IT	Yes
11	Female	B.S.	Physics	Research	Yes	Yes	Yes	Research	Yes
12	Male	B.S.	Accountancy	Financial Analysis	Yes	Yes	Yes	Accountancy	Yes
13	Female	B.S.	Automobile Engineering	Automobile Engineering	Yes	Yes	Yes	Automobile Engineering	Yes
14	Male	M.Sc.	Marketing	Marketing	Yes	Yes	Yes	Marketing	Yes
15	Female	B.S.	Automation	Data Analysis	Yes	Yes	Yes	Automation	Yes
16	Male	B.S.	Computer Science	Communication	Yes	Yes	Yes	Computer Science	Yes
17	Female	B.S.	Manufacturing	Production	Yes	Yes	Yes	Manufacturing	Yes
18	Male	B.Tech	Computer Science	Financial Analysis	Yes	Yes	Yes	Computer Science	Yes
19	Female	B.S.	Mechanical Engineering	Mechanical Engineering	Yes	Yes	Yes	Mechanical Engineering	Yes
20	Male	B.S.	Mechanical Engineering	Mechanical Engineering	Yes	Yes	Yes	Mechanical Engineering	Yes
21	Female	B.S.	Structural Engineering	Structural Engineering	Yes	Yes	Yes	Structural Engineering	Yes
22	Male	M.Tech	Mining	Mining	Yes	Yes	Yes	Mining	Yes
23	Female	B.Tech	Computer Science	Financial Analysis	Yes	Yes	Yes	Computer Science	Yes
24	Male	B.Tech	Mechanical Engineering	Mechanical Engineering	Yes	Yes	Yes	Mechanical Engineering	Yes
25	Female	B.S.	Accountancy	Financial Analysis	Yes	Yes	Yes	Accountancy	Yes
26	Male	B.S.	Engineering	Technology	Yes	Yes	Yes	Engineering	Yes
27	Female	B.S.	Computer Science	IT	Yes	Yes	Yes	Computer Science	Yes
28	Male	B.Tech	Computer Science	IT	Yes	Yes	Yes	Computer Science	Yes
29	Female	B.S.	Computer Science	IT	Yes	Yes	Yes	Computer Science	Yes

Fig: 3.1 Sample Dataset

Conclusion

The research proposes a hybrid strategy for student course recommendation systems, combining machine learning, collaborative filtering, and content-based filtering. It uses user preferences, past data, and semantic links to improve suggestion accuracy. A knowledge graph will illustrate course relationships. The model's effectiveness will be evaluated using accuracy.

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Revolutionizing Education Through Technology

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Abstract

Technology in education has transformed learning by providing interactive tools, online resources, and collaborative platforms. Technology has democratized education by providing access to learning materials and resources regardless of geographical location. This increased accessibility promotes lifelong learning and ensures that education is not confined to the walls of a traditional classroom. Technology in education revolutionizes learning by integrating digital tools and resources into traditional classrooms, fostering interactive experiences, personalized learning, and enhanced collaboration among students and educators.

Keywords: *Technology, Blended learning, learning management system, Digital divide.*

Introduction

Technology makes education very effortless. It is now vital to maintaining society, and it will definitely have a repercussion on education. Formerly, teachers didn't allow students to use technology in education. This evolution, marked by virtual classrooms and

personalized learning apps, not only adapts to diverse learning styles but also revolutionizes the educational experience by fostering interactive, personalized, and collaborative learning environments. Online classes are the best example of technology. The role of technology in education is immense. The learning process for the students becomes easier as the technology progresses. Technologies that are used in schools and colleges such as having computer labs, and using high-end devices and instruments make it easy for students to understand the concepts. The practical knowledge of the students improves when they see things happen. It becomes easy for them to relate the theory with Practical.

Integrating Technology in Education

Integrating technology in education is a multifaceted approach that involves the strategic incorporation of digital tools and resources to enhance the learning experience. This process goes beyond merely introducing gadgets into classrooms; it encompasses a thoughtful assimilation of online platforms, interactive applications, and personalized learning tools. The goal is to create a dynamic and adaptable educational environment that caters to diverse learning styles. It empowers learners to engage with information in interactive ways, promoting critical thinking and problem-solving skills. The seamless incorporation of technology into education represents a pivotal shift that not only keeps pace with the digital era but also unlocks new avenues for personalized, collaborative, and enriched learning experiences.

Methods to Integrate Technology in Education

Interactive Learning Platforms: Implementing interactive online platforms and learning management systems that facilitate engagement, discussion, and collaboration among students.

Digital Content Creation: Encouraging students and educators to create and share digital content, such as presentations, videos, and blogs, fostering a more dynamic learning experience.

Personalized Learning Apps: Utilizing personalized learning applications that adapt to individual student needs, providing tailored content and pacing.

Online Resources: Integrating a variety of online resources, including e-books, articles, and multimedia content, to enhance and diversify the learning materials available to students.

Virtual Classrooms: Conducting virtual classrooms through video conferencing tools, enabling real-time interaction and participation, especially in remote or blended learning environments.

Collaborative Tools: Introducing collaborative tools such as cloud-based document sharing, project management platforms, and communication apps to promote teamwork and communication among students.

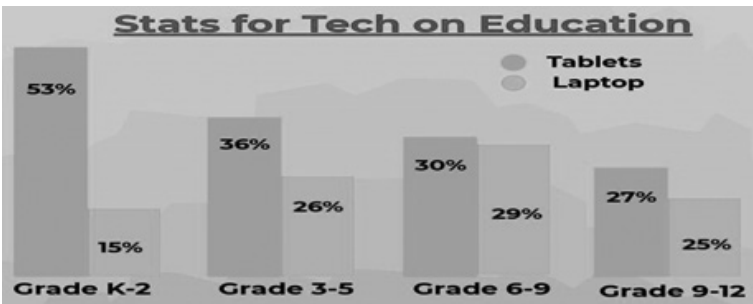
Flipped Classroom Model: Flipping the traditional classroom model by having students review content at home through digital resources and using class time for interactive discussions, problem-solving, and application of knowledge.

Augmented and Virtual Reality: Leveraging augmented and virtual reality technologies to create immersive learning experiences that enhance understanding in subjects like science, history, or geography.

Current Landscape of Technology in Education

As of the last update in January 2022, the landscape of technology in education was rapidly evolving. As of my last

knowledge update in January 2022, the landscape of technology in education was rapidly evolving. The COVID-19 pandemic accelerated the adoption of remote and blended learning models, with educational institutions leveraging various technologies for virtual classrooms, online collaboration, and digital assessments. The prevalence of e-learning platforms like Google Classroom, Zoom, and Microsoft Teams became integral tools for educators, offering features for content delivery, collaboration, and assessment. Additionally, the ongoing impact of the pandemic and emerging technologies will likely influence the trajectory of technology in education.



Challenges in Implementing Technology in Education

Infrastructure and Access Disparities: Unequal access to reliable internet connections, devices, and other technological resources can create a digital divide, hindering some students' ability to fully participate in technology-enhanced learning.

Digital Literacy Gaps: Students and educators may have varying levels of digital literacy, impacting their ability to effectively use and navigate educational technologies. This gap can hinder the integration of technology into the learning process.

Cost Implications: Implementing and maintaining technology in education can be costly. Educational institutions may face

challenges in funding the necessary hardware, software, and training programs, especially for schools with limited budgets.

Resistance to Change: There can be resistance among educators, administrators, and even students to adapt to new technologies. Overcoming traditional teaching methods and embracing innovative approaches requires a cultural shift within educational institutions.

Privacy and Security Concerns: Protecting sensitive student data and ensuring the privacy and security of online learning environments present ongoing challenges. Cybersecurity threats and compliance with data protection regulations require continuous attention.

Professional Development Needs: Educators often need training and professional development to effectively integrate technology into their teaching methods. Lack of time, resources, or comprehensive training programs can impede successful implementation.

Overemphasis on Technology: Striking a balance between technology and traditional teaching methods is crucial. Overreliance on technology without considering pedagogical principles may undermine the quality of education.

Solutions to Deal the Challenges

Infrastructure and Access Disparities: Initiatives such as government-funded programs or partnerships with private sectors to improve infrastructure in underserved areas.

Digital Literacy Gaps: Comprehensive professional development programs to enhance digital skills and promote a culture of continuous learning.

Cost Implications: Exploring open-source or affordable solutions, grant applications, and cost-sharing collaborations with local communities or businesses.

Resistance to Change: Providing ongoing support, showcasing success stories, and fostering a positive attitude toward change through effective communication.

Professional Development Needs: Investing in continuous professional development programs, workshops, and mentorship to enhance educators' tech proficiency.

Standardization Issues: Promoting interoperability standards and establishing clear guidelines for technology adoption within educational institutions.

Overemphasis on Technology: Emphasizing a blended learning approach, where technology complements, not replaces, effective teaching strategies.

Benefits of Educational Technology

Enhanced Accessibility: Technology provides access to educational resources and materials from virtually anywhere, promoting learning beyond traditional classroom boundaries.

Interactive Learning: Engaging multimedia content, simulations, and educational games make learning more interactive and enjoyable, catering to diverse learning styles.

Personalized Learning: Adaptive learning platforms tailor content to individual student needs, allowing for a personalized and self-paced educational experience.

Efficient Assessment and Feedback: Digital tools enable streamlined assessment processes, automated grading, and

immediate feedback, providing timely insights into student performance.

Resource Diversity: Online libraries, e-books, and educational apps offer a wide range of resources, supporting varied learning preferences and providing up-to-date information.

Real-world Applications: Incorporating technologies such as simulations and virtual reality brings real-world applications into the classroom, enhancing understanding and practical skills.

Increased Engagement: Interactive multimedia and gamified educational content capture students' attention, fostering higher engagement levels in the learning process.

Efficient Classroom Management: Educational software and tools help with administrative tasks, grading, and communication, allowing educators to focus more on teaching.

Innovative Teaching Strategies: Technology enables the implementation of innovative teaching methods, encouraging creativity and critical thinking in both educators and students.

Conclusion

In summary, technology has indeed revolutionized education by making it more accessible, interactive, personalized, and adaptable to the diverse needs of learners. As technology continues to advance, its role in shaping the future of education will likely become even more significant. Technology in education has become an indispensable tool, enhancing learning experiences and fostering accessibility. While it offers numerous benefits such as personalized learning and global connectivity, it is crucial to address challenges like the digital divide to ensure equitable access for all students. The continuous integration of technology should

be guided by thoughtful pedagogical approaches to maximize its positive impact on education.

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Cross Curricular Teaching And Learning

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Abstract

In the ever-evolving landscape of education, a cross curricular approach has emerged as a dynamic and innovative paradigm, fostering a holistic and interconnected learning experience. National Education Policy (NEP) recommended cross disciplinary approach, keeping in consideration the holistic development for curriculum integration that attempts to connect different domains of study in the understanding of any subject or theme. This paper explores the multifaceted dimensions of a cross curricular approach (multidisciplinary approach), delving into its transformative potential to enhance educational outcomes.

Keywords: NEP, Cross curricular approach

Introduction

Cross curricular approach is a method of curriculum integration that highlights the diverse perspectives that different disciplines can bring to illustrate a theme, subject or issue. In a multidisciplinary curriculum, multiple disciplines are used to study the same topic.

A multidisciplinary education, as envisaged in the NEP-2020 aims to develop social, physical, intellectual, emotional and moral capacities of human beings in an integrated manner. A flexible curriculum will facilitate creative combinations of various disciplines. Learners will be able to choose from languages and at the same time fields such as Applied Sciences, Mathematics and Business Studies. The opportunities of doing research are enhanced through a holistic and cross curricular approach.

Objectives of Cross curricular Approach

The primary objective of adopting a cross curricular approach in education is to seamlessly integrate the Arts stream with STEM, fostering a comprehensive learning experience that combines the study of humanities, language, arts, drama, dance, and music with Science, Technology, Engineering, and Mathematics. It aims to enhance students' problem-solving skills and critical thinking abilities, preparing them for the complexities of the real world. The integration of various disciplines is designed to instill valuable traits such as perseverance, responsibility, and citizenship, ensuring that students are well-equipped for success throughout their lives.

The cross curricular approach also seeks to cultivate an understanding of the practical application of science and technology in a rational manner, enriching students and instilling a sense of moral and ethical responsibility. By encouraging principles of constructiveness, fairness, and wisdom, the approach enables students to apply their individual actions towards positive societal contributions. Ultimately the goal is to train students to live creatively, responsibly and peacefully in society, empowering them to become creative agents of positive change for the betterment of the community.

Significance of Cross curricular Learning

The significance of a cross curricular approach in education is profound, offering students a comprehensive skill set that extends beyond subject-specific knowledge. This method equips students with general skills such as problem-solving, critical thinking, time-management, self-management, communication, writing, analysis, and research methodologies, fostering a well-rounded set of abilities. Importantly, these skills are easily transferable across diverse work environments, proving beneficial in any professional domain. A cross curricular approach provides a holistic understanding of different perspectives, enabling students to grasp the interconnectedness of various disciplines. This broad perspective empowers students to compile and collaborate with individuals from across the spectrum, enhancing their ability to function effectively in the professional world. Exposure to diverse perspectives instills an appreciation for the power of new ideas and nurtures a pragmatic attitude. It contributes to the development of a generation of continuous learners, promoting a mindset of ongoing curiosity and exploration. Learning without boundaries encourages the creation of more relevant and contextual learners, fostering adaptability in an ever-changing world. The deeper understanding of subjects and concepts gained through a multidisciplinary approach not only enriches the educational experience but also guides students in making informed choices for their future endeavours.

Advantages of Cross curricular Approaches

Enhanced Creativity: Collaboration across disciplines often sparks creativity. When students engage with diverse ideas, they are more likely to think innovatively and come up with creative solutions to problems.

Increased Engagement: Multidisciplinary approaches can make learning more engaging and relevant to students. By connecting theoretical concepts to real-world applications, educators can capture students' interest and motivation.

Breaking Down Silos: Traditional education systems often create silos between subjects. It breaks down these silos, fostering a more interconnected and integrated understanding of knowledge.

Preparation for Global Challenges: Many of the challenges facing society, such as climate change or public health crises, require multifaceted solutions. Multidisciplinary education equips students to address these global challenges by combining insights from different disciplines.

Challenges in Implementing Cross curricular Approaches

Institutional Barriers: Existing institutional structures and curricular frameworks may present challenges to the implementation of cross curricular approach. Revisions in policies and administrative support are often necessary.

Teacher Training: Educators need proper training and professional development to facilitate multidisciplinary learning effectively. This includes understanding how to integrate diverse content and create collaborative learning environments.

Assessment Methods: Traditional assessment methods may not align with multidisciplinary approaches, making it challenging to evaluate students' interdisciplinary skills accurately. Developing new assessment strategies is essential.

Resource Allocation: Implementing cross curricular approaches may require additional resources, including updated teaching materials, technology, and collaborative spaces. Budget constraints can pose obstacles to widespread adoption.

Cross curricular approach in Innovation and Research

The cross curricular approach is pivotal for catalysing innovation and advancing research on various fronts. By fostering collaboration among experts from diverse fields, this approach promotes a wealth of perspectives and facilitates the cross-pollination of ideas, leading to creative solutions and novel methodologies. Researchers in multidisciplinary environments benefit from a holistic understanding of complex issues, enabling them to tackle multifaceted problems more effectively. The agility of multidisciplinary teams in adapting to unforeseen challenges enhances problem-solving capabilities, contributing to breakthroughs with wide-ranging applications. Interdisciplinary research centres play a key role in providing a conducive environment for collaborative endeavours. Furthermore, the integration of technology and science from different domains not only propels advancements but also ensures a comprehensive and interconnected approach to problem-solving. In addressing grand challenges, such as sustainable development and global health, the cross curricular approach proves indispensable, offering comprehensive insights and solutions. Additionally, this approach not only improves research outcomes but also enhances competitiveness for funding opportunities, underlining its crucial role in pushing the frontiers of knowledge and driving progress in an ever-evolving research landscape.

Cross curricular Approach in Communication and Skill Development

The cross curricular approach plays a pivotal role in shaping effective communication and comprehensive skill development. In the realm of communication, this approach transcends traditional boundaries, emphasizing not only linguistic proficiency but also

a nuanced understanding of diverse perspectives. By integrating insights from various disciplines, individuals develop the ability to convey complex ideas with clarity and relevance across different contexts.

The multidisciplinary environment cultivates adaptability in communication styles, enabling individuals to navigate the intricate dynamics of diverse professional and social scenarios. Concurrently, skill development within a multidisciplinary framework goes beyond isolated competencies. It encompasses a holistic spectrum, fostering problem-solving acumen, critical thinking, time management, and teamwork. The interconnected nature of these skills prepares individuals for the multifaceted challenges of the contemporary world, where success hinges not only on specialized expertise but also on the capacity to apply knowledge collaboratively and effectively communicate ideas across disciplinary boundaries. Thus, the cross curricular approach emerges as a catalyst for honing versatile communication skills and cultivating a well-rounded skill set essential for success in today's dynamic and interconnected global landscape.

Conclusion

Cross curricular approaches in education represent a promising paradigm shift that aligns with the complexities of the modern world. By breaking down disciplinary boundaries, educators can foster a more comprehensive and interconnected understanding of knowledge. While challenges exist, the benefits of multidisciplinary education in preparing students for diverse careers and addressing global challenges are substantial. As education continues to evolve, embracing cross curricular approaches is crucial for equipping learners with the skills and perspectives needed to navigate an ever-changing and interconnected world.

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Focus Group Discussions: Another perspective to Curriculum Review, Teaching and Learning

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Abstract

Focus group discussion (FGD), a qualitative research tool, can be used to make learning more student-centric. Hence the aim of this narrative review was to identify and understand the various dimensions in which FGDs can be used in higher educational institutes. FGDs can be used in three primary areas in higher educational institutions: curriculum review and improvement, teaching-learning methodology and in program evaluation. The paper also describes major limitations and strengths in the conduct of FDG.

Keywords: Focus group, Curriculum, Qualitative research tools

Introduction

Focus group discussion (FGD) is a qualitative research tool, used to evaluate the understanding of social issues or outcome of any system, program or intervention. In FGD, through a moderated interaction, people from similar background discuss a specific topic of interest (Nyumba et al., 2018 and Zacharia et al., 2021). Each FGD can have six to twelve participants and the discussion can run for about an hour (Drummond & Murphy-Reyes, 2018). Figure 1 illustrates the steps involved in the conduct of FGD.

Unlike interviews, FGDs encourage interaction between participants to explore the topic in depth (Breen, 2006). In interviews, the interviewer becomes an essential part of the discussion, whereas in FGD, the moderator takes the backstage and the participants interacting with each other takes center stage (Zacharia et al., 2021). Similarly, teaching-learning methodologies at higher educational institutes are moving towards student centric methods, focusing on their interactions rather than a lecture-based method, which is more centered on the instructor (Roshni & Rahim, 2020).

Choosing the right teaching methodology is an important part of framing curriculum and making lesson plans. Traditional teaching methodology involves lecture, seminar, role-plays and case-based learning. However, students are mere passive listeners in these traditional methods (Roshni & Rahim, 2020). Student centered methodologies that actively involve them in the teaching-learning process is the need of the hour; also known as enquiry based learning (Hutchings, 2006). The aim of this narrative review was to identify and understand the various dimensions in which FGDs can be used in higher educational institutes.



Curriculum Review and Improvement

Staying relevant with the current trends and concepts is an important aspect that higher educational institutes should focus on. Constantly revamping the syllabus or curriculum is crucial to make learners ready for demanding roles and challenges in the industry. Focus groups are recommended data sources for curriculum review in addition to surveys and meetings. The framework committee can organize FGDs with various stakeholders like current students, alumni, departmental faculty, and academic and industry experts to understand the needs and expectations of each group (Hundey and Gonzalez, 2019). Based on the principles of FGD, we conducted a discussion with school students aged 10 to 15 years. From this discussion, we were able to identify the gaps with respect to the student's knowledge on nutrition, and thus design our nutrition education program more effectively.

Teaching-Learning Methodology

In a study conducted among medical college students in Kerala, India, students preferred group discussions over lecture methods. Improving student's attention span, understanding of principles, better skill acquisition and recall were highlighted as the salient features (Arias et al., 2016, and Roshni & Rahim, 2020). There was a significantly higher overall learning satisfaction. Several studies highlight that group discussions which actively involve students, lead to a much more rewarding experience among both faculty and learners (Fischer et al., 2004, and Ferreri & O'Connor, 2013).

Alternatively, Mosher et al. (2017) recommends using traditional lecture format for classes on specific factual information, and using group discussions and student-centered approaches for teaching and learning more abstract concepts that

require discussion and student interaction. Some experts suggest using a combination method of teaching where the learning starts by lecture method and is followed by FGD. This way a student gets to learn the concepts from trained faculty and also reap the benefits of FGD (Smith et al., 2011).

In Bhutan, FGD was conducted to find ways to improve self-efficacy and competency among Medical University Professors and also understand techniques to improve residency programmes (Tenzin et al., 2019). Another study in Tamil Nadu described how FGDs were used to understand challenges faced by faculty in teaching and methods to overcome them (Shrivastava et al., 2022).

Program Evaluation

Evaluation of educational programs usually involves test scores and GPAs but many a time fail to capture data regarding views, opinions, attitude and perceptions of all the stakeholders such as students, teachers and parents. One way to bridge this gap is by organizing focus group discussions to understand the needs, experience and objective fulfillment. This will aid in direct personal interaction with all participants and understand the situation better (Kardash, n.d.). FGDs conducted at the end of any education program will also have a better impact in terms of enhancing the participant's knowledge, attitude and practice related to that concept.

Limitations of FGD

- Conducting a FGD can be time consuming (Breen, 2006; Kardash, n.d.).
- It is harder to interpret and analyze as compared to quantitative data.

- Success of a FGD depends on the skills of the moderator and the analysis of the data. Skilled manpower is essential to the good functioning of the FGD
- Results may be generalized only to the sample and not to the wider population outside the sampling frame.

Strengths of FGD

- Strengths outweigh the limitations.
- FGDs add in-depth meaning when used in addition to quantitative data.
- It helps to understand the perspectives and impacts in a better way.
- FGDs are very flexible to use and there is no one rigid method of its usage.
- It is possible to find out the “why” responses usually missed out in other forms of data collection.
- FGDs enhance interpersonal relations between the members of the group, i.e., the students and help them learn better from each other’s strengths.

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La langue française comme un instrument potentiel pour l'enseignement supérieur et les perspectives d'emploi

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Résumé

La langue française est un outil précieux, qui présente un potentiel important dans l'enseignement supérieur et dans les domaines professionnels. Cette exploration porte sur les divers avantages de la maîtrise du français, en soulignant son impact sur les études et les carrières.

La maîtrise du français élargit les horizons académiques et permet d'accéder à de nombreuses opportunités éducatives dans le monde entier. Dans le domaine professionnel, la maîtrise du français devient un outil puissant, qui améliore les perspectives d'emploi sur un marché du travail mondialisé. Les entreprises multinationales, les affaires internationales, les organisations mondiales, etc. accordent une grande importance à la maîtrise du français.

En conclusion, la maîtrise du français transcende les simples compétences linguistiques et devient un atout essentiel dans les études et les carrières. Sa maîtrise n'ouvre pas seulement des voies académiques mais amplifie également les opportunités d'emploi, ce qui en fait un outil primordial pour

ceux qui souhaitent exceller dans l'enseignement supérieur et embrasser des carrières globales.

Mots-clés: *FLE, mondialisation, avantages, bénéfiques, opportunités*

L'introduction

La langue française, plus qu'un simple moyen de communication, occupe une position exceptionnelle à l'échelle mondiale en servant d'outil essentiel pour l'enseignement supérieur et les perspectives professionnelles. Cet article vise à explorer en profondeur le rôle fondamental que joue la langue française dans l'offre d'opportunités éducatives et professionnelles significatives.

Compte tenu de la prévalence de l'anglais comme langue principale des affaires et de la communication, la plupart des gens ignorent que le français est, avec l'anglais, la seule langue parlée sur tous les continents. Avec une communauté de 321 millions de francophones à travers le globe, le français se classe comme la 5^e langue mondiale, privilégiée par 93 millions d'élèves et d'étudiants comme langue d'enseignement. De plus, cette langue captivante se positionne au 4^e rang des langues sur Internet, attirant l'intérêt de 51 millions de personnes en quête de son apprentissage.

L'histoire et la diffusion de la langue française dans le monde

L'influence de la colonisation française a permis à la langue française de se répandre au cours du Moyen Âge. Elle a remplacé le latin comme première langue parlée par les Européens instruits à partir du XVII^e siècle et, au XVIII^e siècle, elle est devenue la langue officielle de la Cour européenne et de la diplomatie. La majorité des pays qui parlent le français étaient autrefois des colonies françaises. En effet, tout au long des XVI^e et XVII^e siècles, la

colonisation française a contribué à l'expansion de la langue dans de nombreuses régions. De 1534 à 1760, la région du Québec au Canada était une colonie française.

Vers la fin des années 1800, Onésime Réclus, géographe français a créé le terme “Francophonie”. Ce terme signifie l'ensemble des personnes et des pays utilisant le français. Cependant, à la fin du 18^e siècle et au début du 19^e siècle, un accroissement du nombre de guerres a contraint la France à perdre la plupart de ses colonies.

Actuellement, dans le XXI^{ème} siècle, c'est l'OIF, *Organisation internationale de la Francophonie*, une association mondiale qui représente les nations et les régions où le français est la langue commune, où une partie importante de la population parle le français ou où il existe un lien significatif avec la culture française.

La présence mondiale de la langue française - Le Français et la Francophonie

De nombreuses organisations internationales, telles que Les Nations unies, l'Union européenne, l'Organisation du traité de l'Atlantique Nord, le Comité international olympique, la Croix-Rouge internationale et les tribunaux internationaux, l'Organisation mondiale du commerce, L'Organisation des Nations unies pour l'éducation, la science et la culture reconnaissent le français comme l'une de leurs langues officielles.

Le Français en tant que deuxième Langue : Catalyseur d'avantages académiques pour les apprenants

L'apprentissage d'une langue étrangère est une entreprise enrichissante qui va bien au-delà de la simple acquisition de compétences linguistiques. Parmi les nombreuses langues disponibles, le choix du français comme deuxième langue offre

des avantages académiques significatifs pour les apprenants. Ce choix stratégique peut non seulement renforcer les compétences linguistiques, mais aussi favoriser le développement cognitif, améliorer les résultats scolaires globaux et ouvrir la voie à de nouvelles opportunités éducatives et professionnelles.

Une des principales raisons pour lesquelles apprendre le français en tant que langue secondaire est bénéfique réside dans le fait que le français est l'une des langues les plus parlées dans le monde. Cela ouvre la porte à une diversité culturelle et à des interactions internationales, offrant aux apprenants une perspective mondiale dès leur plus jeune âge.

De plus, l'apprentissage du français comme langue secondaire peut avoir un impact positif sur la performance académique globale des étudiants. Les apprenants de langues étrangères développent généralement une meilleure mémoire, une plus grande capacité à résoudre des problèmes complexes et une amélioration de leurs compétences en communication. Ces compétences transversales sont applicables dans toutes les matières, ce qui peut conduire à une amélioration globale des résultats scolaires.

Il est important de noter que les avantages académiques de l'apprentissage du français dépassent les frontières géographiques. Avec l'avènement de la technologie, les apprenants ont accès à des ressources en ligne, des applications éducatives et des cours virtuels qui rendent l'apprentissage du français plus accessible que jamais. Des plateformes telles que *Duolingo*, *Babbel* et *Rosetta Stone* proposent des cours interactifs qui permettent aux apprenants de progresser à leur propre rythme, rendant l'apprentissage du français plus flexible et personnalisé.

Choisir le français comme deuxième langue offre des avantages académiques significatifs aux apprenants.

En investissant dans l'apprentissage du français, les apprenants se préparent à un avenir mondialisé qui est à la fois gratifiant sur le plan académique et professionnel.

Investir dans l'avenir linguistique: Programmes d'échanges et bourses d'études pour les apprenants de français à travers le monde

Les étudiants indiens passionnés par la langue française ont la chance d'explorer des opportunités éducatives en Europe grâce aux divers programmes de bourses. Ces initiatives favorisent l'échange culturel et linguistique, offrant aux apprenants la possibilité de poursuivre leurs études dans des environnements académiques stimulants.

Avec plus de 300 millions de locuteurs dans le monde, le français est une langue riche de culture et d'opportunités. Pour encourager l'apprentissage de cette langue romantique, de nombreux programmes d'échanges et bourses d'études sont disponibles pour les apprenants de français à travers le monde.

Un exemple éminent de ces programmes est le programme d'échange Erasmus+, soutenu par l'Union européenne. Erasmus+ offre aux étudiants la possibilité de vivre une expérience d'immersion linguistique dans un pays francophone, renforçant ainsi leur maîtrise du français et élargissant leur compréhension de la culture francophone. De plus, des bourses spécifiques destinées aux étudiants francophones sont disponibles, telles que les bourses d'études de la Fondation des Alliances françaises, qui soutiennent financièrement les étudiants désireux d'approfondir leurs connaissances de la langue française.

L'OIF est également un acteur majeur dans la promotion de la langue française à travers le monde. Elle propose divers

programmes de bourses destinées aux étudiants des pays membres, favorisant ainsi l'accès à une éducation francophone de qualité. De plus, l'OIF organise des événements culturels et éducatifs qui offrent une plateforme d'échange pour les apprenants de français, stimulant ainsi la diversité linguistique et culturelle.

Les autres bourses sont: Programme *Erasmus Mundus*, *Bourses du gouvernement français* pour les étudiants internationaux, *Bourses Eiffel* pour les étudiants étrangers.

En investissant dans l'avenir linguistique des apprenants de français, ces initiatives contribuent non seulement à l'enrichissement personnel des étudiants, mais également à la construction d'une communauté mondiale interconnectée et multilingue.

Les portées professionnelles à travers le monde si l'on étudie le français comme deuxième langue:

La maîtrise du français peut être un atout majeur sur le marché du travail, ouvrant des portes vers des postes qui exigent une compréhension approfondie de la langue et de la culture françaises. Le français est largement utilisé dans les organisations internationales, les entreprises multinationales et les institutions académiques. Les apprenants de français peuvent explorer des perspectives professionnelles variées et enrichissantes. Voici quelques possibilités qui illustrent la polyvalence de la langue française dans le monde professionnel pour les apprenants de FLE:

Organisations Internationales : Comme nous l'avons déjà vu, le français est l'une des langues officielles de nombreuses organisations internationales telles que les Nations Unies, l'UNESCO et la Croix-Rouge internationale. La maîtrise du français peut être précieuse pour des postes au sein de ces organisations.

Diplomatie et Service Étranger: De nombreux pays entretiennent des relations diplomatiques avec des nations francophones. La maîtrise du français peut être un atout dans une carrière en diplomatie et dans le service étranger.

Traduction et Interprétation: Il existe une demande pour des traducteurs et interprètes qualifiés dans diverses industries. La maîtrise du français peut ouvrir des opportunités dans la traduction de documents, l'interprétation lors de réunions d'affaires ou de conférences.

Enseignement du Français: La demande d'enseignants de français existe dans de nombreux pays, en particulier dans des écoles de langues, écoles internationales ou programmes d'échange.

Affaires et Commerce: Le français est une langue importante dans le monde des affaires. La maîtrise de cette langue peut être bénéfique pour les professions liées au commerce international, aux relations d'affaires et à la négociation.

Tourisme et Hôtellerie: Les destinations francophones attirent de nombreux touristes. La connaissance du français peut être un avantage dans les secteurs du tourisme et de l'hôtellerie.

Art et Culture: Le français joue un rôle central dans le monde de l'art et de la culture. Des opportunités professionnelles incluent la gestion d'événements culturels, la curation d'expositions, la production de films ou même le travail au sein d'institutions culturelles internationales.

Conseil et Coaching Linguistique: En tant que locuteurs compétents en français, les apprenants peuvent devenir des consultants linguistiques, offrant des services de coaching en langue française pour les professionnels travaillant dans des contextes internationaux.

Opportunités de Stage et d'emploi: Étant donné la diversité des industries et des entreprises en Europe, les apprenants de français ont souvent accès à des opportunités de stage et de placement dans des secteurs variés tels que les affaires, la technologie, la culture, et plus encore.

La conclusion

En conclusion, la langue française apparaît comme un outil puissant pour l'enseignement supérieur et les perspectives d'emploi. Le français, au-delà de son rôle dans les domaines traditionnels tels que la diplomatie et le commerce, ouvre des portes dans des secteurs divers tels que la technologie, les médias, la santé et le développement durable. Les apprenants bénéficient d'une polyvalence linguistique qui transcende les frontières, favorisant le développement professionnel et contribuant à un monde interconnecté.

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Outreach and Extension Activities

The Role of Service-learning in Ensuring Holistic Education – A Faculty Perspective

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Abstract

Service-learning can be best understood as a pedagogical tool encompassing academic, social and individualistic values for learners. Service-learning ensures an academic, civic and a personal outcome- based learning for the students where the learners are trained and equipped to identify socially relevant problems and provide practical solutions through critical thinking, methodology and implementation. Service learning as a pedagogical tool has become an integral part of the Higher Education paradigm from an academic as well as from a holistic perspective since it addresses the cause of personality growth and social consciousness among learners and instills institutional vision and values. This paper is a descriptive analysis of the implementation of a service-learning project which was carried out by the students of the II M.A International Studies from Women's Christian College, Chennai in association with The Audacious Dreams Foundation. The students visited an agriculture-based field organization named Farm Guru and conducted an unstructured interview with the farming community there. They then collated their findings to produce relevant brochures, and handmade presentations to create awareness

amongst the community with respect to their needs and problems. Keeping this as a microcosmic example, the paper article discusses the importance of service-learning projects in the curriculum of higher education.

Keywords: *Service-learning, Higher Education, Holistic future, civic education*

Introduction

One of the pivotal ways in which higher educational institutions can augment the social applicability of their curriculum is through engaging in effective community based practices. Apart from the traditional curricular aspects, universities can design student-centred courses such as service-learning to bridge the gap between theory and praxis for the students. A course centred on service-learning involves multiple stakeholders such as students, community members and faculty instructors enabling a nurturing environment for everyone involved to learn, unlearn and grow. Clatyon (2014) opines that service learning shares common attributes with other forms of community- based literacy programs such as internships, field studies etc. However, the defining features of service-learning pedagogy according to him are elements such as communal literacy, and critical reflections. Service-learning can be understood as a subset to civic engagement where the students and the members of the community engage in a reciprocal process of knowledge sharing.

In addition to communal engagement, service-learning creates opportunities for learners to enhance their skills in critical thinking, social knowledge, and personality development. It is a form of experiential literacy that combines academic coursework with voluntary social engagement. The essential conditions of service-learning are that the service is connected with coursework

and that, through critical reflection, students make connections between their service learning and takeaways of coursework. Other conditions are that coursework is assessed and that the service meets community requirements. In sum, communal engagement, and academic literacy are crucial factors in service-learning. Service learning aims at benefiting students and recipients of their services in the community. (Deeley, 2010).

Service-learning has been referred to as a ‘pedagogy for citizenship’ as it increases civic responsibility through community engagement and academic learning. A major incentive for its introduction into higher education is that it enhances students’ intellectual skills. One of the key elements of enhanced intellectual skills is the development of critical thinking skills. Critical reflection, a form of critical thinking, is an intrinsic aspect of service learning. (Deeley, 2010) Service-learning is considered to be a tool that combines ‘the cognitive with the affective’, contributing to students’ personal development and positive impact on their interpersonal skills. It can also enhance the effectiveness of students’ communication, social interactions, and decision-making skills. Furthermore, students gain confidence and increased social awareness, and it is instrumental in increasing their self-esteem and leadership skills. (Deeley, 2010)

This paper focuses on the Service-learning project undertaken by the students from the II M.A International Studies Department, from the Women’s Christian College, Chennai. The students visited an agriculture-based organization called Farm Guru located at Sholavaram, Tiruvallur District, Tamil Nadu. The project was designed in a manner that emphasized on the academic learning of the students, increasing their social awareness towards the farming community and promoted essential interpersonal skills such as team work, time management and mutual cooperation.

Important Takeaways for students through SL Projects – A Teacher’s Perspective

Intellectual development

Service-learning courses engage the students in ways that promote academic literacy and critical thinking. A key aspect of service-learning is that it is formulated on the belief that it isn't a form of volunteerism. Service-learning has a clear literacy focus integrated with an equally important community focus. Conditioning pertaining to community service functions as important references to be studied and analysed by the students which is considered equivalent to academic work. Therefore, community service is grounded on how the students condense, illustrate, and compound other academic components in the course in such a way that it is useful in community service. The critical examination of community- grounded service and academic requirements through precisely designed reflection is the most important element of the learning process that generates new meaning, questions, and enhanced understanding and practice for the learners. Service learning thus involves the students in academic work to associate with the society as well as the course content. When designed and enforced in a feasible manner, service learning is known to help students achieve in- depth understanding, which includes active learning. Regular feedback from faculty and community members help the students to bring classroom learning to the field in a relevant and useful manner. (Clayton, 2014)

Civic learning and civic engagement

Civic learning can be defined as a “disciplinary perspective, which includes the identity and the mission of the institution, the academic strengths on campus, and the unique social environment of the local communities.” Many factors such as political, social,

economic, environmental, and historical contexts of a nation or region and the intermingling of cultural forces shape civic learning in particular settings. When students are trained in civic learning they are exposed to civic education, and associated civic skills such as communitarianism, participatory democracy, public work, social capital, civic professionalism, social responsibility, social justice, ethical behaviour towards the community, public leadership, and public scholarship (Clayton, 2014). Service-learning modules emphasize on civic education and civic learning skills for the learners in order to create responsible citizens and socially aware human beings for the nation who will therefore exhibit and uphold their core institutional values in future. In a similar fashion, where civic learning is an experiential and linear form of learning for the students, civic engagement through service learning not only benefits the students but also proves to be useful for the members of the target community through their productive engagement throughout the project.

Interpersonal skills and personality development

Expansive studies reveal that service-learning has a positive impact on the students' morale and personality development. It also influences the sense of particular identity and growth in their capability to work well with others and display desirable leadership and communication skills. Service-learning approaches enhance or prepare students for a better future career and also enhance communication skills, professional growth and increased confidence that will be useful for them in their chosen careers. In addition, service-learning courses can be important instruments for cognitive, affective, and moral metamorphosis where the students can understand their flaws and strengths, fears and limitations. (Zainudin Hassan, 2022)

SL Project undertaken by the Department of International Studies - Methodology and Findings

The methodological framework of Service Learning components can be understood with the help of the following models.

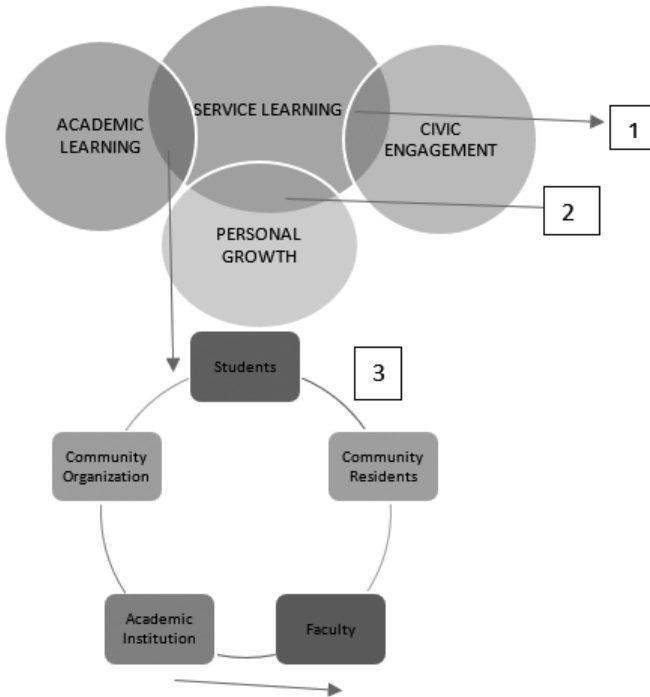


Figure 1 – Outcomes of SL Source: Author’s Compilation)
Figure 2 – Stakeholders in SL (Author’s Compilation)

Key Takeaways

1. Making the learning process reciprocal for the learners and for the members of the community.
2. Improving personal and interpersonal skills.
3. Research skills, critical reflections and intellectual development.

Case Study

The students from II M.A International Studies visited an agriculture based organization called Farm Guru on the 25th of August, 2023. Prior to the visit, the students engaged in a pre-survey activity where they had listed a set of questions/problems that they believed were challenging concerns for the members of the farming community. The students intended to use these questions in the form of a questionnaire to administer to the members of the community. This activity was conducted with the aim of igniting interest within the students regarding the community and to guide them into acquiring more knowledge regarding the needs of the community before the service learning visit. During the course of the visit, the students first utilized the observation method which they learnt as a part of their coursework on research methodology to understand the environment, socio-economic conditions and different aspects of living of the community. Considering the practical challenges of administering the questionnaire and language barriers, the students utilized the questionnaire as a tool to conduct unstructured interviews with the members of the community. The class was divided into three groups to conduct the interviews. By this method the students were able to derive data under different categories such as livelihood, economic status, health, hygiene and sanitation, education, employment conditions, agricultural practices etc. The data collected was descriptive and qualitative in nature.

The analysis of the data revealed that there were three challenging issues that were of concern affecting the community. Firstly the female respondents recorded that they lacked access to menstrual hygiene products and were resorting to the unhealthy practices of menstrual waste disposal. Second, it was observed that the community members lacked adequate awareness regarding

various government schemes regarding women's education, social empowerment and financial literacy. And finally the students also observed that the majority of the female respondents were financially dependent on the male members of the family (either the father/spouse). Owing to the inferences drawn from the data collected, the students resorted to an advocacy based service-learning model where they compiled brochures for awareness creation amongst the members of the community. Independent brochures were created on topics such as a guide to self-help groups, financial literacy, menstrual health, menstrual hygiene, schemes of the Government of India and the State Government of Tamil Nadu on Girl child's education, fellowship opportunities and employment opportunities. The overall feedback was well received by the farming community.

Learning Outcomes

A questionnaire keeping in mind the principles of research was formulated by the students replete with 15 close ended and 5 open ended questions in both English and Tamil. Once they reached the farm, they conducted unstructured interviews with the respondents based on the questions in the survey. The questionnaire served as a master template for the interview and the group decided on three issues to work on based on the responses recorded. One of the key takeaways/learnings from the academic/research perspective was that not all of the respondents might be literate to read and answer the questionnaire and there could be a language barrier as well. This enabled the students to adapt to a respondent-sensitive approach to data collection methods and the informal and unstructured interviews facilitated the respondents to voluntarily participate in the research process. The unstructured interviews also helped the students to qualitatively upgrade their research as the answers of

the respondents were more specific, personal and nuanced in terms of their issues, rather than a generic understanding. It also enabled them to adapt to the practical considerations that a researcher might face in their research journey and how to navigate issues that arise out of such situations, while keeping the essence and focus of the research intact.

This enabled them to apply the concepts learnt in research methodology in relation to data collection, collation and analysis to practical settings and recommend solutions based on their analysis. The students completed the project by engaging in discussions on their individual critical reflections and a post-project survey. As faculty members observing the trajectory of these students since the pre-project reflections, it can be said that service-learning bridged the academic gap between theory and praxis for students across the spectrum. The interactions and social engagement gave a sense of purpose to the students enabling them to better coordinate and design outputs that would have a positive impact on the community. It strengthened the social bonding of the students involved and helped in bringing about a social awareness that otherwise would have been difficult to teach within the traditional classroom setup.

Conclusion

The program proved that service-learning can be viewed as a mechanism which adds a multidisciplinary approach to education making it holistic. As independent courses, service-learning projects are designed to cater to specific attributes of a course curriculum with a fixed duration, syllabus and academic credits awarded to the students at the time of course completion. The cognitive development and individual growth of the learners are essential determinants of service-learning in order to enable the

students to increase their awareness, personal skills and chances of employability in future. Last but definitely not the least, the overall community and the members of the community in particular are the most significant stakeholders and beneficiaries of successful service-learning projects. Therefore, the inclusion of service learning as a component of curriculum in Higher Education Institutions is pertinent since it helps in reinforcing the Institution's values, vision and mission for the students and also paves the way to make the teaching- learning process comprehensive and holistic.

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A Systematic Review on Service-Learning in Medical and Healthcare Education - Student Perspective

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Abstract

Service-learning is a structured learning experience where service and learning goals are explicitly integrated to promote student learning and growth, enhance the curriculum beyond classroom learning and allow students to apply their skills and knowledge to real life situations. This systematic review is conducted to examine the impact of service-learning in medical and health care education on student development outcomes. A literature search was done using PubMed and WHO clinical registry trial with the Boolean operator "AND". The search yielded a total of 15132 studies of which 7 studies met the eligibility criteria and were included in the study. Results showed that integration of service-learning showed positive outcomes in the students' personal development and perceptions, academic learning and also contributed to holistic development by positively impacting one's knowledge acquisition, attitude and practice

refinement and enhancement of professional and social skills. It also improves the core concepts of patient care, namely empathy, cultural competence and a sense of appreciation of social determinants of health (SDH) that helps to create a patient-centred healthcare service and fosters a socially responsible team.

Keywords: *Health industry; KAP; medical education; service-learning; whole-person development*

Introduction

Service-learning is a structured learning experience that combines community work with explicit learning objectives, preparation, and reflection. It is a form of experiential pedagogy that focuses on critical, creative, and reflective thinking in order to bring progressive development in students' academic skills, civic responsibility and commitment to the community (Johson & Notah, 1999; Preradovic, 2015). It furnishes the bridge to balance the service that is provided and the learning that takes place to promote student learning and growth and enhances the curriculum beyond classroom learning, allowing students to apply their skills and knowledge to real life situations. (Felten & Cleyton, 2011; Compare & Albanesi, 2022). It also promotes opportunities for self-reflection, personal development, commitments to specific social issues, geographic locations and community partner organizations. Service-learning brings about common outcomes which facilitate positive effects on student grades, academic engagement and gains, increased understanding of course materials, increased critical thinking, writing skills, better communication skills, civic behaviour, social responsibility, social justice, empathy towards others, self-efficacy, good moral reasoning, greater tolerance to diverse culture and beliefs and reduced stereotyping, greater

commitment to a service-oriented society (Simons & Clearly, 2010; Wilson, 2011; Eppler et al., 2011).

Medical education is a multifaceted process designed to serve the community and meet societal needs in the future, influencing the properties of future care. It intricately evolves traditional ideas to cope with complex problems and trains professionals for a sustainable future (Scheele, 2012). In every sector of any discipline, it is important to maintain a work-life balance with regards to personal development and involvement with the community. A salutogenic approach to foster health care students' abilities and potential, knowledge of the working environment is necessary to be better prepared for future sustainable working life and establishment of the professional role (Ahlstrand et al., 2022). Service-learning is one such approach of experiential education that promotes a balance between service and learning, facilitating sustainable learning in the future. Hence, this study focuses on the impact of service-learning among medical and allied health students.

Methodology

A keyword search was done in PubMed and WHO Clinical trial Registry using the Boolean operator "AND". The PubMed database yielded a total of 15032 studies. Using the NCBI filters in the PubMed database, articles such as review articles, meta-analysis, books and documents, articles with only abstracts and not full text were excluded. Randomized controlled trial and clinical trial studies were only included in the study. About 14605 records were marked as ineligible by the automation tool, yielding 427 articles. In WHO Clinical trial Registry, 100 studies were found. In total, 527 studies underwent title screening and at the end of the screening, duplicate

articles ($n= 5$) and articles with topics not related ($n=515$) were removed. Only 7 studies matched the eligibility criteria and were included in this study. The search strategy is presented using the PRISMA flowchart as shown in figure 1.

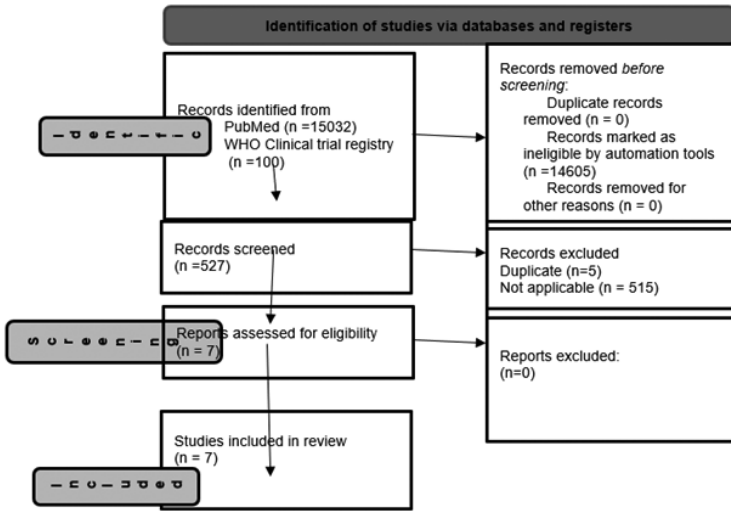


Fig 1. Search strategy flowchart

Results And Discussion

A total of 7 studies were identified exploring different dimensions of service-learning in different disciplines among medical students and are presented in table 1. Majority of the included studies were conducted in the USA, while one study was carried out in Hong Kong and one study in Saudi Arabia. With respect to the study design of the included studies, two were randomized clinical trials, two had pre-post experimental design, one each was a case study, one was a structured interview, and one cross-sectional survey.

Table 1. Study Characteristics

S. no	Dimension	Geographical Location	No. of participants	Design of the study	Discipline	Course/Project	Tools	Outcome	Reference
1.	Efficacy of service-learning to change implicit and explicit bias toward obese individuals in Kinesiology pre-professionals	USA	78 Kinesiology pre-professionals	Pre-post experimental design	Kinesiology pre-professionals	Project	Explicit Ratings Tests (ERTs), Anti-Fat Attitudes Test (AFAT), Implicit Association Test (IAT), Questionnaire, Discussion	After the discussion the pre professionals were shocked about the pre-conceived notions about obese people after hearing their stories. However, there was no overall positive attitude change	Rukavina et al., 2010
2.	Long term effect of a service-learning project on medical and nursing students' knowledge in aging and their attitudes toward older adults	Hong Kong	124 students 48 older adults	Randomised Controlled trial	Medical and nursing training	Project	Pre-and-post-intervention design	1. Positive attitude towards older adults after the intervention 2. Increased students' overall knowledge of aging and their understanding of mental health needs in old age, and reduced their negative attitudes toward older adults	Leung et al., 2011
3.	Student perceptions of the role of the off-campus SLC experiences in the development of professionalism and core values	USA	91 DPT students	Case report	Doctor of Physical Therapy Students	Course	Interview, self-assessment, Reflection papers	Students learned about: 1. Professionalism and social responsibility 2. Core value - Compassion/Caring	Crandell et al., 2013
4.	Service-learning program's impact on senior dental students' attitude toward community service at Virginia Commonwealth University (VCU) School of Dentistry	USA	105 senior students	Pre and post-test survey	Dental students	Course	Questionnaire based on Community Service Attitudes Scale (CSAS) Post-then-Retrospective Pre-test (RPT)	Change in positive attitude towards connectedness, normative helping behaviour, benefits, career benefits, and intention were observed	Coe et al., 2015
5.	Application of service-learning to provide opportunities for nursing student engagement in research to facilitate course learning	USA	35 students	RCT	Collaboration between communities engaged research teams and nursing students	Course	Written and oral reflections	1. Students were able to make connections between class learning outcomes and their research engagement. 2. They promoted healthful, nutrient-dense meals to families, both applying and recognizing the levels of prevention 3. Students became teachers, which was empowering for them and participating families. 4. The importance of teamwork skills were emphasized	Horning et al., 2020
6.	Impact of structured educational field experience on the physical therapist's attitudes and knowledge about working with the Severe mental illness (SMI) population	USA	7 graduates doctor of physical therapy (DPT)	Semi-structured interviews research design	DPT graduates	Course	Questionnaire, Interviews	Attitudinal changes, improvement in skills, increase in competence, and greater focus on person-centeredness were the outcomes observed	Karczyk et al., 2020
7.	Impact of service-learning on the attitude of senior dental students toward community service	Saudi Arabia	120 senior students of Dentistry Taibah University	A cross-sectional survey-based	Dental students	Course	Pre-test post-test questionnaire, CSAS scale	Overall positive attitude change was observed towards personal development, volunteering, empathy, and understanding	Bahammam and Bahammam, 2023

Disciplines

Different disciplines of medical students including kinesiology pre-professionals, medical and nursing training, doctor of physical therapy students, dental students, collaboration between communities engaged research teams and nursing students were included in this study as part of their course curriculum and as a project.

Assessment Tools

Tests namely Explicit Ratings Tests (ERTs), Anti-Fat Attitudes Test (AFAT) and Implicit Association Test (IAT), questionnaire, discussion, interview, self-assessment, written and oral reflections and a questionnaire based on the Community Service Attitudes Scale (CSAS) were the tools employed to assess the impact of service-learning in the included studies.

Impact of Service-Learning on Students

All of the studies included in table 1 showed a positive impact of service-learning. However, one study conducted by Rukavina et al. (2010) was half successful as the students understood and addressed the pre-conceived notions they had towards obese people, but did not show an overall positive attitude change. According to the author, this may be because of short duration and students may need more time to understand and apply the service-learning concepts and knowledge and also to reflect more to bring about a holistic personal development.

Impact on Academic Learning: Horning et al. (2020) applied service-learning to provide opportunities for nursing student engagement in research to facilitate course learning in collaboration between communities. After the service-learning

exposure, students were able to make connections between class learning outcomes and their research engagement. The students were also able to apply their knowledge and skills to real life problems where they become leaders, empowering themselves and the participating families.

The above stated positive impact of service-learning highlights its immersive nature that extends beyond traditional learning by promoting a deeper understanding of the medical concepts, critical thinking and problem-solving skills (Salam et al., 2017; Marcilla-Toribio et al., 2022). This ultimately prepares them to face the complexities of the healthcare system.

Impact on Knowledge, Attitude and Practice: Leung et al. (2011) assessed the long-term effect of a service-learning project on medical and nursing students' attitudes toward older adults and their knowledge of aging. They reported an increased positive attitude towards older adults after the intervention, increased overall knowledge of aging and their understanding of mental health needs in old age and reduced negative attitudes toward older adults, thus improving academic learning and personal and social development. Two studies by Coe et al. (2015) and Bahammam and Bahammam (2023) among dental students reported overall positive attitude change towards connectedness, normative helping behaviour, career benefits, intention, personal development, volunteering, empathy and understanding nature of the students at the end of service-learning.

The first-hand experience that students in the healthcare industry gain from service-learning enhances their knowledge base by exposing them to diverse patient populations with significant health challenges. This reinforces academic learning and enhances their clinical competence as the students gain a broader

understanding of factors associated with medical conditions (Janeway et al., 2020). The reflective component of service-learning encourages the students to reflect on their challenges and personal biases, which in turn fosters self-awareness, a positive change in attitude and perpetual commitment to personal development (Leung et al., 2007). Exposure to community health during the course of learning will equip the students to tailor their practice skills according to the needs of the patients and improve their diagnostic skills (Nascimento & Warmling, 2021). This may incline the students to actively engage with the community (Marcilla-Toribio et al., 2022) and also help to focus on the loopholes in preventive healthcare.

Impact on the Professional and Social Skills: Two studies on Doctor of Physical Therapy Students (DPT) (Crandell et al., 2013; Karyczak et al., 2020) observed that the professionalism, social responsibility and core values, namely compassion or caring personalities of the students increased at the end of service-learning. Attitudinal changes, improvement in skills, increase in competence, and greater focus on person-centeredness were the other outcomes observed. Horning et al. (2020) reported that service-learning helped nursing students understand the importance of teamwork skills.

These results show that service-learning improves the core concepts of patient care, namely empathy, cultural competence and a sense of appreciation of social determinants of health (SDH). Janeway et al. (2020) states that medical students are not formally trained in screening patients for SDH and that service-learning helps to improve the skills of medical students in addressing SDH. Through hands-on experience in a real-world scenario, the students are exposed to heightened awareness of social issues and trained to navigate complex social dynamics (Sin et al., 2019;

Marcilla-Toribio et al., 2022). In addition, the reflective nature of service-learning refines interpersonal skills and makes their professional skills more meaningful and culturally appropriate for the community (Saylor et al., 2018).

Conclusion

In conclusion, this systematic review highlights the transformative power of service-learning on students from the medical and health care industry. Integration of service-learning not only improves academic learning, but also contributes to their holistic development by positively impacting their knowledge acquisition, attitude and practice refinement and enhancement of professional and social skills. It helps to create a patient-centred healthcare service and fosters a socially responsible team.

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A Study on the Significance of Service Learning in Fostering Holistic Development with Context to Higher Education in India

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Abstract

Amidst the ever-evolving landscape of higher education in India, the call for holistic development has become more imperative than ever. This paper investigates the incorporation of service learning into the higher education system of India, viewing it as a pivotal driver for fostering comprehensive student development. The literature review synthesizes existing studies and research articles, accentuating the importance of a clearly defined framework and active student engagement within the community. The paper is structured to include sections on the background of higher education in India, the Service Learning framework, the impact of Service Learning on academic performance, and the alignment of Service Learning with NAAC's criteria for institutional benefits. This paper shows evidence supporting service learning as a transformative force in shaping well-rounded individuals ready for the challenges of the 21st century.

Keywords: *Service Learning, Holistic Development, Higher Education, India, Academic Performance, Social Development, Personal Growth*

Introduction and literature study

In the dynamic landscape of higher education, the need for holistic development is paramount. This paper aims to examine the role of service learning in fostering a comprehensive educational experience, focusing on its implementation and outcomes in the Indian context. This literature review explores existing studies and research articles that delve into the implementation and outcomes of service learning in the specific context of higher education in India.

Several scholars highlight the importance of a well-defined framework for service learning to be effective in the Indian context. Gupta et al. (2018) emphasize the need for a structured model that integrates service projects seamlessly with academic curricula, ensuring that learning outcomes align with educational objectives. A robust framework not only facilitates successful implementation but also enhances the overall educational experience.

In the Indian educational landscape, the significance of community engagement in service learning is evident. Miller et al. (2019) discuss the transformative potential of partnerships between educational institutions and local communities. Collaborative efforts ensure that service projects address real societal needs, promoting a sense of ownership and relevance among students.

Research by Sharma et al. (2020) delves into the impact of service learning on skill development and academic performance. Findings suggest a positive correlation between engagement in service projects and the enhancement of critical thinking, communication, and problem-solving skills. Improved academic performance is noted among students who actively participate in well-structured service learning initiatives.

The cultural context of India plays a significant role in shaping the outcomes of service learning. Patel et al. (2017) emphasize the

importance of incorporating culturally relevant content in service projects. Aligning service activities with local cultural norms ensures that students appreciate and respect diverse perspectives, contributing to a more comprehensive educational experience.

Long-term impact and sustained civic engagement are critical aspects of service learning in the Indian context. Research by Dhivvya et al. (2019) explores how service learning experiences contribute to the development of socially responsible citizens. The study highlights the enduring impact of service learning on students' continued involvement in community service beyond their academic tenure.

The literature on service learning in the Indian context reveals a growing body of evidence supporting its role in fostering a comprehensive educational experience. From well-defined frameworks and community collaborations to skill development and cultural relevance, the implementation of service learning enriches higher education in India. As scholars continue to investigate and refine these approaches, it is evident that service learning has the potential to shape well-rounded individuals equipped for the complexities of the 21st century.

Background of Higher Education in India

India boasts one of the largest higher education systems globally, with a vast network of universities, colleges, and institutes offering a diverse range of academic programs. The system is characterized by its multi-tiered structure, encompassing central universities, state universities, deemed universities, and private institutions. The regulatory framework is overseen by bodies such as the University Grants Commission (UGC) and other professional councils.

Some important key features of Indian education are

1. *Diversity of Programs:* Indian higher education provides a wide array of undergraduate, postgraduate, and doctoral programs in various disciplines, including engineering, medicine, humanities, social sciences, and technology.
2. *Language of Instruction:* English is often the medium of instruction, particularly in technical and professional courses, although several institutions offer programs in regional languages.
3. *Entrance Examinations:* Admission to many prestigious institutions is highly competitive, often relying on standardized entrance examinations such as the Joint Entrance Examination (JEE) for engineering and the Common Admission Test (CAT) for management programs.
4. *Global Recognition:* Some Indian universities, especially the Indian Institutes of Technology (IITs) and Indian Institutes of Management (IIMs), enjoy international acclaim for the quality of education and research.

Despite the strengths of the higher education system in India, there are several challenges related to holistic development:

1. *Memorization Learning Culture:* The prevalent memorization learning culture tends to emphasize memorization over critical thinking and practical application, hindering the development of creative and analytical skills.
2. *Limited Practical Exposure:* Many academic programs lack hands-on experiences, internships, or industry collaborations, restricting students from gaining real-world skills and practical knowledge.

3. *Unequal Access*: Disparities in access to quality education persist, with rural areas facing challenges such as inadequate infrastructure, limited faculty resources, and fewer educational opportunities compared to urban counterparts.
4. *Employability Gap*: The existing curriculum may not always align with the evolving needs of industries, leading to a gap between the skills imparted through education and those demanded by the job market.
5. *Emphasis on grades*: The emphasis on examinations and grades often overshadows holistic development. This results in a focus on academic performance rather than nurturing students' physical, emotional, and social well-being.
6. *Lack of Interdisciplinary Approaches*: Warehoused academic disciplines and a lack of interdisciplinary approaches limit students' exposure to diverse perspectives and hinder the development of well-rounded individuals.
7. *Inadequate Support Services*: Limited counselling and support services for mental health, career guidance, and personal development contribute to the challenges faced by students in navigating the complexities of higher education.

Addressing these challenges requires a concerted effort from educational institutions, policymakers, and stakeholders to create a more holistic and inclusive higher education environment in India. Initiatives that promote experiential learning, interdisciplinary approaches, and a focus on soft skills can contribute to fostering comprehensive development among students.

Service Learning Framework

The conceptual framework of service learning is designed to integrate academic curricula with experiential components,

fostering a holistic educational experience that combines theoretical knowledge with practical application. This framework emphasizes the interconnectedness of academic learning, community engagement, and personal development. Figure 1 (Bringle, R. G., & Hatcher, J. A. (1996)) is a breakdown of key components within this conceptual framework:

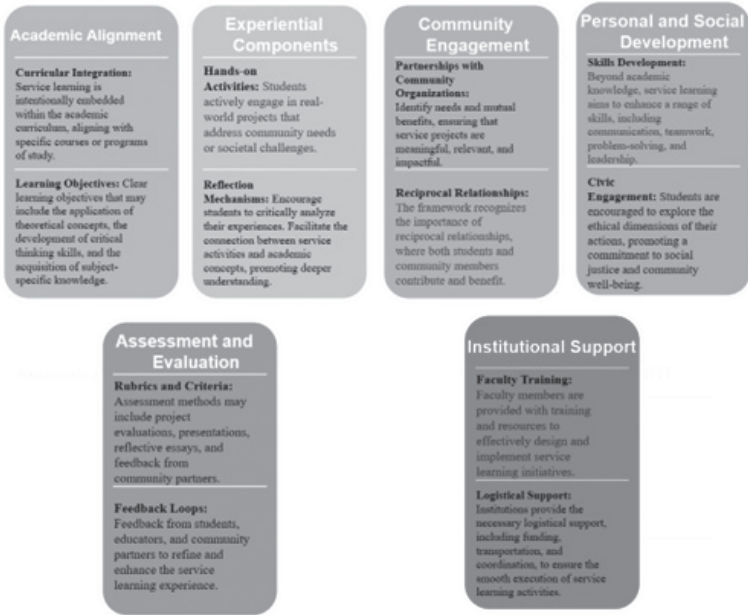


Fig 1: Key components in Service Learning.

Service learning for the impact on Academic Performance

Service learning has been shown to have a positive impact on academic achievement by providing students with practical experiences that reinforce and deepen their understanding of course content. Several studies have explored the relationship between service learning and academic outcomes, including improved grades and enhanced critical thinking skills.

Improved Grades

Research suggests that students engaged in service learning often demonstrate improved academic performance. For example, a study conducted by Eyler and Giles (1999) found that students involved in service learning tend to have higher GPAs compared to their non-participating peers. The hands-on experiences gained through service projects can contribute to a more profound understanding of academic concepts and better retention of knowledge, ultimately reflecting in improved grades.

Critical Thinking Skills

Service learning is designed to foster critical thinking skills by encouraging students to apply theoretical knowledge to real-world situations. A study by Astin, Vogelgesang, Ikeda, and Yee (2000) found that students engaged in service learning demonstrated higher levels of critical thinking compared to those who did not participate. The reflective component of service learning, where students analyze their experiences, contributes to the development of critical thinking skills.

Deeper Understanding of Course Content

Service learning provides a context for students to apply and deepen their understanding of course content. Through hands-on experiences, students see the practical implications of theoretical concepts. A study by Jacoby (1996) highlighted that service learning enhances students' ability to connect theory with practice, leading to a more profound and meaningful understanding of the course material.

Service Learning and NAAC's criteria for institutional benefits

Here's how service-learning may align with some of the key criteria considered by NAAC:

	Service-learning Contributions	NAAC's Expectations
Curricular Aspects	Service learning projects can be strategically integrated into the curriculum to achieve specific educational objectives and align with institutional goals.	NAAC assesses the relevance of the curriculum and its responsiveness to societal needs, and service-learning projects aligned with community engagement can strengthen this aspect.
Teaching-Learning and Evaluation	Service learning is inherently student-centric, promoting experiential learning, critical thinking, and problem-solving skills.	NAAC looks for innovative and effective teaching-learning practices, and service-learning can contribute positively to these aspects.
Research, Innovation and Extensions	Service-learning projects that involve community collaboration and address local needs and societal challenges contribute to an institution's social sensitivity align with this criterion.	NAAC recognizes the importance of institutions being engaged with the community and assesses an institution's commitment to social and environmental issues.
Student Support and Progression	Service-learning can contribute to the overall development of students by fostering skills such as critical thinking, communication, and social responsibility.	NAAC evaluates student support services and initiatives that contribute to their holistic development.
Governance, Leadership and Management	Johnson (1999) states that service learning helps in supporting and coaching students, which can encourage faculty to self-organize, realize their authority with regard to their own learning process, and enable them to learn and research spontaneously.	NAAC assess strategies for faculty empowerment for institutional growth
Innovations and Best Practices	Service-learning can be considered an innovative educational practice that demonstrates an institution's commitment to effective pedagogy. Fang (2016) shows that a Service-Learning class is one way to give students the space they need to become effective public problem solvers that leads to innovations.	NAAC encourages institutions to showcase innovative practices, and service-learning initiatives could be highlighted as a best practice.

It's essential to note that while service-learning can positively influence an institution's performance in the NAAC assessment, it is just one aspect of the overall evaluation.

Conclusion

This paper investigates the transformative potential of service learning as a pivotal driver for fostering comprehensive student development within the higher education system of India. The background of higher education in India provides a contextual understanding of the challenges faced, including a memorization learning culture, limited practical exposure, unequal access, and an employability gap. The paper advocates for initiatives that promote experiential learning, interdisciplinary approaches, and a focus on soft skills to address these challenges and create a more holistic and inclusive higher education environment. The positive impact of service learning on academic performance is supported by research showing improved grades, enhanced critical thinking skills, and a deeper understanding of course content. Furthermore, the paper establishes a connection between service learning and NAAC's criteria for institutional benefits, demonstrating how service-learning contributions align with expectations related to teaching-learning and evaluation, curricular aspects, student support and progression, community engagement, innovations and best practices, and social and environmental sensitivity. In essence, this paper provides a comprehensive overview of service learning in the Indian higher education context, highlighting its potential to shape well-rounded individuals equipped for the challenges of the 21st century.

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Impact of Extension Activities on the Holistic Development of the Student Community - A glimpse into Extensions at WCC

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Abstract

Extension is considered as the new facet of higher educational systems as it enables institutions to work closely with their neighbourhood. Extension activities provide students a plethora of opportunities to apply learning experiences as intervention to societal concerns. By undertaking extension activities, both the Institution as well as the community are mutually benefited. Extension activities at WCC moulds students towards a holistic development of physical, intellectual, cognitive, emotional and social intelligence. Thus creating progressive changes in society, skill development, personality enhancement and competence for job markets.

Key words: *Higher Education, Extension Activities, Community, Societal needs, Skill Development.*

Introduction

Education is the complex process of acquiring knowledge, skills, values etc. (Sinha & Sinha, 2024). Real education pertains not only to academics but rather focuses on developing the latent

potential of honing skills and knowledge for our world. Today extension activities have become an essential part of higher education as it exposes the students to societal needs (Agarwal & Gupta, 2023). Extension education serves as a bridge to transfer the benefits of knowledge gained through classroom teaching and research to the communities (Stoecker, 2014). Through this venture students gain an exposure to improve the quality of life, promote development and foster positive changes in the society (Kapur, 2016). Extension activities are student centred learning processes where students take up the lead role in decision making and problem solving for the real world challenges (Wright, 2011).

Extensions at WCC

Women's Christian College, one of the pioneering institutions of Higher education, focuses on holistic development of students. The college ensures that every student enrolls for extension activity during their undergraduate program. The students get to enrol in either one of the five extension activity i.e. NCC, NSS, Rotaract Club, Young Indians Club or Eco Club.

NATIONAL CADET CORPS, is the Army Wing at Women's Christian College. It aims to instil qualities like nationalism, patriotism, comradeship, discipline, team spirit, esprit-de-corps, leadership, sportsmanship and self-confidence. Apart from these basic training, cadets are also involved in social service activities.

NATIONAL SERVICE SCHEME WCC, has for its motto, NOT ME BUT YOU. It encourages its volunteers to extend help to society. Some of the flagship programs include blood donation camps conducted on a periodic basis, visiting HIV children home, Campus Clean ups, etc.

Rotaract Club of Women's Christian College, focuses to develop the skills of leadership and communication among the

youth. RCWCC has been functioning through four different avenues namely Professional Service, Community Service, Club Service and International Service, conducting various projects, pertaining to these avenues. The club also has notable star projects like ‘Stree Suraksha’, ‘HI-V’, ‘Phoenix’ and ‘Tangle’.

Young Indian (Yi) Club of Women’s Christian College, is the Corporate Social Responsibility wing of the Confederation of Indian Industry (CII). It aims to create a platform for Young Indians to realise the dream of a developed nation. It encourages youth to be actively engaged in nation building, community service and preparation for entry into mainstream Indian Industry.

ECO-CLUB of Women’s Christian College, has been involved in increasing knowledge, creating awareness and interest among students in all aspects of the environment. The motto of the Eco club is “To give each their space”.

Purview of extension activities carried out by the various clubs at WCC

Extension as intervention to societal problems or needs: The extension programs are organised to create awareness and thereby bring about effectual interventional change to societal needs. For example various campaigns and workshops will be organised on a regular basis to address issues such as Road Safety measures – Use of helmets, traffic rules, etc., Emergency responder workshop – how to save life during an accident along with an awareness about the bylaws, Safe use of LPG cylinders, Blood Donation Camps, Hair donation for cancer patients, etc.

Extension carried out using social media platforms: During the pandemic time, students used social media platforms like twitter, facebook, whatsapp status, google classroom, etc to

carry out various extension activities like online poster to create awareness about breast cancer, Anti-Drug Campaign, Importance of breastfeeding, taught students under the Aid India Program, Online storytelling for kids who have learning disabilities, etc.

Extension indulges in helping out the socio-economically disadvantaged: Students visit old age homes, orphanages, palliative care centres, etc. spend quality time with them, share gifts and play games. Clubs also collaborate with other NGOs and involve in activities like teaching government school students various subjects and art work.

Extension as a means of skill development & entrepreneurship: Clubs involve themselves in training especially women with entrepreneurial skills like preparation of herbal formulations for healthcare, mushroom cultivation, herbal cosmetics, etc.

Extension to mitigate environmental concerns: With a global concern on deterioration in the overall environmental health, various activities are organised such that the volunteers are trained to adopt environmental friendly measures in their day today life. They also actively engage in activities like beach clean ups, collection of e-waste, tree planting drive, spread awareness about sustainable menstruation, campaigns to avoid the use of single use plastics, thrift drive, distribution of paper bags to local vendors, etc.

Extension for professional development: Activities such as guest lectures, workshops and seminars expose the students towards professional development, critical thinking skills, diverse perspectives of applying academic and research to real world problems. Clubs organise activities like meet up with Business men, personality development workshops, design thinking workshops, etc.



Figure 1: A glimpse of Extension various extension activities at WCC (1) Campus Cleaning –Swachh Bharat (2) Distribution of paper bags to local vendors (3) Awareness rally on menace of single use plastics (4) & (5) Skill Development – Mushroom Cultivation (6) Tree Planting Drive (7) Students serve as volunteers in school (8) Craft Making – Fundraiser for Charity purpose (9) Awareness Rally for Breast Cancer at Elliot Beach.

Significance of extensions on student life

Knowledge transfer to the societal needs: Extension activities serve as a platform for the students to apply the theoretical knowledge gained in their classrooms to address various social concerns. The students interact with the community, understand the need and then draw measures to address the needs. It is a beyond

classroom learning that fosters experiential learning amongst the student fraternity (Agarwal & Gupta, 2023).

Overall development of the individual: Extension activities enable students to develop good communication skills, leadership roles, team spirit, critical and analytical thinking, interdependence and problem solving skills. These exposures are imperative in the overall personality development that prepare them for a better future (Reddy, 1991).

Networking: Extension promotes networking of students with fellow students, NGOs that work close to the society, industrial experts, social activists, etc. These interactions promote enhanced understanding of how needs could be addressed, industrial trends and potential collaborations (Agarwal & Gupta, 2023).

Socially Responsible: Engaging students in extension activities helps them to evolve into individuals that are more socially responsible. They are sensitised against social practices that are detrimental to societal development. Thereby it helps develop futuristic decision makers and nation builders (Roy, 2023).

Self-Discipline: Discipline plays a pivotal role for accomplishing various tasks successfully. Students learn to prioritise their area of focus to achieve their goals, effective time management and development of habits for self-development (Sinha & Sinha, 2024).

Conclusion

The true outcome of education lies in preparing students to apply relevant knowledge to real life scenarios. Extension activities have become an integral part of the educational system, as it caters to the holistic development of the student community. In Higher

Education systems, extensions are highly significant as it serves as a backbone for sustainable association between the institution and the community. Institutions like Women's Christian College that have incorporated extension as a compulsory component of their curriculum have marched ahead in empowering and moulding dutiful citizens for a developed nation. Thus paving way as incentives for a life-long learning.

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Mental and Emotional Wellbeing

Predictors of Mental Well-being among Migrant Students during COVID-19 Pandemic

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Abstract

Across all aspects of life, the COVID-19 pandemic has uncovered unanticipated impediments and susceptibilities. As a result of the constraints imposed by the country and its many states during this difficult time, tension among student migrants intensified, taking a toll on their mental health. Through this study, the researcher aims to investigate the role of social support, self-efficacy and emotional intelligence, in predicting the mental wellbeing of interstate student migrants during the COVID-19 pandemic. This study was conducted among 203 interstate student migrants aged 17-30, who had migrated from their home state for educational purposes. Pearson's product moment correlation was used to examine the relationship between social support, self-efficacy, emotional intelligence and mental wellbeing among interstate student migrants. Hierarchical Regression Analysis was used to explore which among self-efficacy, social support and emotional intelligence is a stronger predictor of mental wellbeing among interstate student migrants during the COVID-19 pandemic. Findings from the study revealed a significant relationship between social support, emotional intelligence, self-efficacy and mental wellbeing among

interstate student migrants, and self-efficacy emerged as the strongest predictor of mental wellbeing among interstate migrant students during the pandemic.

Keywords: *Interstate student migrants, Social support, Emotional Intelligence, Self-efficacy*

Predictors of Mental Well-being among Migrant Students during COVID-19 Pandemic

COVID-19 is a chronic respiratory infection that can lead to devastating complications and death (Algarni et.al.,2021). A pandemic can cause a severe impact on individuals and disturb the norms, resulting in economic losses and the depletion of key resources. During a pandemic, psychological reactions play a key role in the spread of both the illness and psychiatric problems (Cullen et.al.,2020). Research conducted over last year has shown that the COVID-19 outbreak has had a harmful influence on people's mental health. Internal migration is the movement of people from their usual residence to another place within the same country (Philip Rees, 2020). According to the World Bank report on 'COVID-19 Crisis Through a Migration Lens,' COVID-19-related national lockdown has obstructed the lives of over 40 million internal migrants in India. Internal migration is around two and a half times as large as international migration ("Internal Migration in India", 2020). The restrictions imposed during COVID-19, alarming rise in the number of COVID-19 cases, financial problems and the associated concerns has caused a mental health crisis for students attending Colleges in India. Psychological wellbeing issues are a great concern among college students as they experience high levels of dread, nervousness, and despondency as a result (Chaudhary et.al., 2021). Interstate students encountered troubles in enrolling themselves for the

first semester as scheduled due to travel restrictions, with college academic programs fast switching from face- to-face traditional form of teaching to online teaching to sustain the education system.

Mental Wellbeing

Mental wellbeing is analogous to having positive mental health (Taggart & Stewart-Brown, 2015). Low mental wellbeing poses a risk factor for mental health issues. Increased mental wellbeing impacts resistance to stressful life experiences (Taggart & Stewart-Brown, 2015). Improvement in mental well-being is also related with improved physical health and longevity, thus mental well-being is a worthwhile objective in and of itself (Chida & Steptoe, 2008).

Social Support

Social support is a process that includes individuals interacting with one another, and when a person provides social interaction, it has a significant impact on his health (Marmot & Wilkinson, 2008). The importance of social support in ensuring good physical and mental health is well documented (Chaurasia, 2018).

Self-efficacy

Self-efficacy is defined as the idea that one is capable of functioning in a specific manner in order to achieve a specific set of objectives. People's feelings, thoughts and actions are influenced by their level of self-efficacy. Low self-efficacy is linked to despair, anxiety, and helplessness in terms of feelings. Self-efficacy is a potent motivational, intellectual, and emotional driver of student behavior, influencing engagement, determination, perseverance, self-regulation, and accomplishment (Schunk and Pajares, 2010; Honicke and Broadbent, 2016; Ritchie, 2016; Zumbrunn et al., 2019).

Emotional Intelligence

Individuals who can successfully manage their emotional states are healthier since they effectively identify and judge their emotional states, understand exactly how and when to communicate their sentiments, and therefore can properly regulate their mood states. This collection of traits, which is concerned with mood and emotional perception, manifestation, and controlling of emotions, implies a direct relationship between emotional Intelligence and physical and psychological health (Manju, 2016).

Purpose of the Present Study

Twenty percent of students feel their mental health has deteriorated severely as a result of COVID-19 ("Impact of COVID-19," 2020). There is a paucity of literature on student interstate mobility. In India, student migration is a widespread occurrence. Pandemic posed substantial obstacles for institutions of higher learning, as well as several interruptions in teaching and learning. University students are considered as being in the High-risk category for mental health problems (Browne et.al., 2017). Psychological distress has a detrimental influence on student learning, involvement, and their perception of college life; therefore, institutions must understand the various stressors present in the student's life in order to better assist their psychological well being (Baik et.al., 2019). Students experienced high levels of stress during the pandemic when compared with the pre-COVID data (Johnson et.al., 2020). Mental health of interstate student migrants has received diminutive attention. The researcher expects to identify which among social support, self-efficacy and emotional intelligence factors is a stronger predictor of mental wellbeing. The current study will allow mental health professionals to take necessary steps to help prevent psychological distress and aid in promoting mental health wellbeing among Interstate migrants.

Hypotheses

1. There will be no significant relationship between social support, emotional intelligence, self-efficacy and mental wellbeing among interstate student migrants during COVID-19 pandemic.
2. Social support, Emotional intelligence and Self-efficacy will not be significant predictors of mental wellbeing among interstate student migrants during COVID-19 pandemic.

Method

Sample

The current research study was conducted among 203 interstate student migrants, belonging to the age ranges of 17-30 based on inclusion and exclusion criteria. Purposive sampling technique was used for the study.

Instrument

The tools used for the study were Multidimensional Scale of Perceived Social Support - MSPSS (Zimet et.al.,1988), Warwick-Edinburgh Mental Well-Being Scale – WEMWBS (Tennant et al., 2007), General Self Efficacy Scale - GSE (Schwarzer & Jerusalem, 2013) and The Schutte Self Report Emotional Intelligence Test - SSEIT (Schutte et.al.,1998).

Design

Correlational design and Hierarchical Regression Model were used to analyze the data.

Procedure for Data Collection

Scales and consent forms were entered in Google forms. The scales include Scale of Perceived Social Support (MSPSS),

Warwick-Edinburgh Mental Well-Being Scale, General SelfEfficacy Scale (GSE) and The Schutte Self Report Emotional Intelligence Test (SSEIT). A Google form link was sent to the participants in order to collect their data.

Statistical Analyses

Pearson's product moment correlation was used to examine the nature and relationship between social support, self-efficacy, emotional intelligence and mental wellbeing among interstate student migrants. Hierarchical Regression Analysis was used to explore which among self- efficacy, social support and emotional intelligence is a stronger predictor of mental wellbeing among interstate student migrants during COVID-19 pandemic.

Results and Discussion

Table 1: Pearson Product-Moment Correlation Analysis between the Variables

Variables (N=203)	Social support	Self-efficacy	Emotional intelligence	Mental wellbeing
Social support	1	.246**	.471**	.324**
Self-efficacy		1	.599**	.582**
Emotional intelligence			1	.527**
Mental wellbeing				1

Table 1 clearly shows a positive significant relationship between social support and mental wellbeing ($r = .324, p < 0.01$). It is seen that there also exists a positive significant relationship between social

support and self-efficacy ($r = .246, p < 0.01$). Social support and emotional intelligence also have a positive significant relationship between them ($r = .471, p < 0.01$). Research findings of the current study is consistent with the findings of previous research which states that higher social support leads to improved psychological well-being (Poudel et.al., 2020). It also shows that there is a positive significant relationship between emotional intelligence and mental wellbeing ($r = .527, p < 0.01$ level). This is consistent with the findings of previous research which states that people with high emotional intelligence are more inclined to have high psychological well-being compared with people with low emotional intelligence (Carmeli et.al., 2009). Research findings of the current study is consistent with the findings of PREVIOUS research which states a significant relationship between self-efficacy and psychological wellbeing (Siddiqui,2015). Greater mental wellbeing, personal achievements, and reduced levels of emotional fatigue are linked to increased self-efficacy (Abo-Ali et.al., 2021).

Table 2: Hierarchical Regression Analysis Showing Predictors of Mental Wellbeing

Model	Predictor (N=203)	Unstandardized coefficients		β	t	R	R ²	Adjusted R ²
		B	SE					
1	Step 1					.324	.105	.100
	Constant	33.402	2.899		11.521**			
	Social support	.216	.045	.324	4.834**			
2	Step 2					.534	.285	.278
	Constant	9.474	4.257		2.226			
	Social support	.065	.045	.097	1.436			
	Emotional intelligence	.269	.038	.481	7.095**			
3	Step 3					.631	.398	.389
	Constant	4.764	3.989		1.194			
	Social support	.078	.042	.117	1.869			
	Emotional intelligence	.123	.042	.220	2.908			
	Self-efficacy	.735	.123	.421	6.129**			

In the hierarchical regression model, 3 models were used, in which Model 1 analyzed if X1(social support) is a predictor of Y (mental wellbeing). In model 2, another variable was added i.e., Emotional intelligence (X2) as a predictor of mental wellbeing and in Model 3, Self- efficacy (X3) was added to the other 2 variables to predict mental wellbeing (Y). Model 1 predicted a significant variance in β (.324) and P (**p<.001) indicating that social support is a significant predictor of mental wellbeing. When Emotional Intelligence variable (X2) was added in Model 2, it further increased the variance in β (.481 and P (**p<.001) indicating that Emotional Intelligence emerges as a stronger significant predictor of mental wellbeing. Thus Model 2 leads to significant variance in mental wellbeing (Y). In model 3, when X3 (self- efficacy) was added, there was a significant variance in β (.421) and P (**p<.001) indicating that self-efficacy emerges as the strongest significant predictor of mental wellbeing. When X1(Socialsupport), X2(Emotional Intelligence) and X3(Self- efficacy) were added as predictors of Y (mental wellbeing) the Hierarchical regression model indicated an approximately 39% variance in mental wellbeing at 0.01 level.

As seen in Table 2, in stage three, the hierarchical regression model showed that self-efficacy significantly predicts mental wellbeing. In stage one, the hierarchical regression model showed that social support significantly predicts mental wellbeing. The value of adjusted R² reveals that 10% of variation in mental wellbeing is due to social support. In stage two, the hierarchical regression model showed that social support together with emotional intelligence significantly predicts mental wellbeing. The value of adjusted R² reveals that 27.8% of variation in mental wellbeing is due to social support and emotional intelligence. In

stage three, the hierarchical regression model showed that social support together with emotional intelligence and self- efficacy significantly predicts mental wellbeing. The value of adjusted R^2 reveals that 38.9% of variation in mental wellbeing is due to social support, emotional intelligence and self-efficacy. The table further indicates that self-efficacy emerges as the strongest predictor of mental wellbeing than social support and emotional intelligence. The findings in Table 2 are consistent with research findings of previous studies which have stated self-efficacy to be a significant predictor of mental health (Bai et.al., 2017). Self-efficacy is common to all people and it is that which regulates an individual's intellect, feelings, and psychological actions (Komarraju and Nadler, 2013).

Conclusion

The study reveals a significant correlation between social support, self-efficacy, emotional intelligence, and mental wellbeing among interstate student migrants during the COVID-19 pandemic, with self-efficacy being the strongest predictor of mental wellbeing. It also highlights the significance of self-efficacy in enhancing mental wellbeing. Since there aren't many studies conducted on migrant students, the findings of the present study will be useful in developing interventions and apprenticeship programs for migrant students in universities in order to avoid the negative impacts of migration. The study's findings can aid in developing interventions and apprenticeship programs for migrant students in universities, focusing on self-efficacy. Counselors can develop strategies to strengthen factors leading to better mental wellbeing, and professionals can conduct awareness programs to promote self-efficacy as a stronger predictor of mental wellbeing.

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Effects of Emotional Intelligence on Attitude towards Intimate Relationships among Young Adults

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Abstract

This research aimed to investigate the impact of emotional intelligence on the attitudes towards intimate relationships among young adults. Utilizing the intimacy attitude scale by Amidon, Treadwell, and Kumar (1983) alongside the Schutte Self Report Emotional Intelligence Test (SSEIT) by Salovey and Mayer (1990), data was gathered from a sample of 150 individuals through a simple random sampling method. Of this sample, 101 were females and 49 were males, encompassing both married and unmarried participants. The analysis, conducted through Pearson correlation statistics, revealed no statistically significant relationship between emotional intelligence and attitudes toward intimate relationships among young adults. Despite the diverse demographic representation in terms of gender and marital status, the findings suggested that emotional intelligence did not exhibit a discernible impact on the studied attitudes. In conclusion,

the study posited that emotional intelligence, as measured by the selected instruments, does not play a significant role in shaping attitudes toward intimate relationships among young adults. This nuanced understanding contributes to the ongoing discourse on the intricate interplay between emotional intelligence and interpersonal dynamics, emphasizing the need for further exploration and refinement of measurement tools in this field of study.

Keywords: *Emotional intelligence, attitude, intimate relationship*

Introduction

Attitudes wield significant influence in shaping the dynamics of relationships. Positive attitudes play a pivotal role in cultivating intimacy, fostering emotional connection, and enhancing overall relationship satisfaction. Conversely, negative attitudes can lead to conflicts, creating barriers to effective communication and understanding.

Interpersonal relationships extend beyond mere sexual connections, encompassing a diverse array of connections. These relationships include familial bonds, friendships, acquaintanceships, and romantic partnerships, each contributing uniquely to an individual's social experience. Recognizing the varied nature of interpersonal connections is crucial in understanding the complexity and richness of human interactions.

Emotional intelligence emerges as a key factor in navigating these intricate social dynamics. This cognitive ability involves not only recognizing and interpreting one's emotions but also effectively expressing and managing them. The Schutte Self-Report Emotional Intelligence Test (SSEIT) serves as a valuable instrument for objectively assessing emotional intelligence,

delving into aspects such as emotion perception, expression, and self-management. Within the realm of interpersonal relationships, the Intimacy Attitude Scale (IAS-R) provides insights into individuals' attitudes, encompassing dimensions such as general intimacy, fear of rejection, loss of control, and comfort with sexual closeness. Understanding these attitudes becomes instrumental in deciphering the intricacies of relational interactions.

As individuals navigate the complex landscape of relationships, these tools offer valuable insights into their emotional intelligence and attitudes. Armed with this understanding, individuals can proactively address potential conflicts, enhance communication, and foster healthy connections across various aspects of their social lives.

A study was conducted by Kathryn Ambler, K.V. Petrides and Philip A. Vernon in the year 2023. The aim of the study was to investigate the relationship between self-defeating interpersonal style and trait emotional intelligence. The research study focused only on women and almost 381 adult women participated in this research study. The result concluded that the correlations between the SELF-DISS scores and TEIQue variables are negatively correlated.

A study was conducted by Feng Kong, Xinyu Gong, Sonia Sajjad, Kairong Yang, Jingjing Zhao in the year 2019. The aim of the study was to investigate the role of social support and affective experience in the relationship between emotional intelligence and life satisfaction. A study focused on 748 Chinese adults concluded that emotional intelligence is positively correlated with well-being from social support and affective perspectives.

A study was conducted by Morgan Lancaster, Gregory S Seibert, Ashley N Cooper, Roos W May, Frank Fincham in the year

2020. The study focused on examining the relationship between insecure attachment and cyber dating and abuse and relationship quality in emerging adults. About 177 individuals participated in the study. Survey method was used to collect data. This study concluded that cyber dating abuse and relationship quality is negatively correlated.

Methodology

Aim

To identify the relationship between emotional intelligence and attitude intimate relationship among young adults

Objective

- To find the relationship between emotional intelligence and attitude towards intimate relationship among young adults
- To study the level of emotional intelligence among young adults
- To identify the nature of attitude towards intimate relationship among young adults

Hypothesis

H₀ – There is no significant relationship between the effect of emotional intelligence and attitude towards intimate relationship

Research design

The study is done using quantitative research design. In depth brief information about the data set is established using distribution, measures of variability of descriptive statistics. Pearson correlation coefficient is used to identify and correlate the

relationship between emotional intelligence and attitude towards intimate relationships.

Sampling

The sample for this study included young adults of age from 20 - 40 years. The total sample size for this study was 150.

Sampling technique

In this study sample selection was done by simple random sampling technique. Sample for the study consisted of 150 young adults of which 49 males and 101 females. Young adults between the age 20 to 35 years who were married or unmarried.

Inclusive criteria

Respondents of age group between 20 and 40 years

- Respondents who were literate
- Respondents selected from a general population that included both male and female

Exclusive criteria

- Respondents who were below 20 years and above 40 years of age.
- Respondents who were illiterate.
- Respondents who were mentally disabled.

Variable

- INDEPENDENT VARIABLE – Emotional intelligence
- DEPENDENT VARIABLE – Attitude towards intimate relationship

Statistical analysis

The data were collected and analyzed using SPSS (statistical package for social science) using Pearson correlation coefficient.

Tools used

- Intimacy attitude scale – revised
- Schutte self report emotional intelligence test (SSEIT)

Tool description

Intimacy attitude scale – revised

The intimacy attitude scale was developed by Amidon, Treadwell, & Kumar in the year 1983. The scale was developed to measure how an individual feels and reflects their attitude towards others in an intimate relationship. The intimacy attitude scale revised is a 50 item scale with four dimensions, tendency to intimacy, escape intimacy, attractiveness and fear of intimacy. The scale is standardized with internal consistency with Cronbach alpha between 0.78-0.86. The intimacy attitude scale is reliable with a test retest value of 0.84 ($p < 0.01$). It has structural validity and content validity.

Schutte self report emotional intelligence test (SSEIT)

The Schutte self report emotional intelligence test (SSEIT) was developed by Salovey and Mayer in the year 1990. The SSEIT scale was developed to measure the general emotional intelligence of an intelligence. The Schutte self report emotional intelligence test is a 33 item scale with four subscales, emotion perception, utilizing emotions, managing self- relevant emotions, and managing others' emotions. SSEIT is standardized with an internal consistency Cronbach alpha value of 0.87. The scale is

reliable with a test retest value of 0.78($p < 0.01$). It has predictive validity and discriminant validity.

Result and Discussion

Table 1

This table explains the descriptive statistics, mean and standard deviation of emotional intelligence and attitude towards intimate relationships among young adults.

Variables	Mean	Standard deviation	N
Attitude towards intimate relationship	149.71	11.074	150
Emotional intelligence	115.65	19.026	150

The table shows the mean and standard deviation for the variables. Attitude towards intimate relationship has mean = 149.71, standard deviation = 11.074 and N = 150. Emotional intelligence has mean = 115.65, standard deviation = 19.026 and N = 150.

Table 2

The following table describes the correlational analysis with examining the relationship between emotional intelligence and attitude towards intimate relationships in young adults.

Variables	Pearson's Correlation	Significance	Decision
Emotional intelligence Attitude towards intimate relationship	1	.64	accepting H0

Table 2 indicates Pearson's correlation between emotional intelligence and attitude towards intimate relationships. The variables have correlation of 1 and significance of 0.64 ($p > 0.01$). Hence, there is no significant relationship between two variables, null hypothesis H_0 - "There is no significant relationship between emotional intelligence and attitude towards intimate relationship" is accepted.

Discussion

Emotional intelligence serves as a significant influencer in relationships, yet the foundation of a healthy intimate relationship extends beyond it. Trust, care, and equality form essential pillars for establishing and maintaining a robust connection. The role of emotional intelligence is intricately intertwined with external factors such as education, societal changes, and personal defense mechanisms, all of which shape its impact on relationship dynamics.

Effectively displacing emotions in a positive manner, cultivating self-awareness, and drawing insights from experiences are pivotal elements contributing to the nuanced interplay within relationships. High emotional intelligence emerges as a valuable asset in this context, facilitating a deeper understanding between individuals, thereby reducing the likelihood of misunderstandings and fostering profound connections.

The broader societal and technological landscape also plays a crucial role, providing resources and avenues for individuals to navigate and handle their emotions effectively. These advancements offer tools and knowledge that contribute to emotional well-being within the context of relationships.

However, studies present varying perspectives on the correlation between emotional intelligence and intimacy. While

some suggest a positive relationship, others indicate a negative impact on relationship quality for individuals with lower emotional intelligence. This diversity in findings underscores the complexity of emotional intelligence's role in intimate relationships and highlights the need for a comprehensive understanding that considers individual differences and external factors shaping emotional dynamics within relationships.

Conclusion

The study shows with the data collected and analyzed, there is no significant relationship between emotional intelligence and attitude towards intimate relationships among young adults. Therefore, the study accepts the null hypothesis (H₀- there is no significant relationship between emotional intelligence and attitude towards intimate relationship among young adults)

Limitation

The study involves samples from the age group of 20-40 year young adults only. Respondents who were less than 20 years of age or above than 40 years of age were excluded from the study. Respondents who were literate only were involved in this study excluding the illiterate respondents from the population.

Recommendation

For future studies in this area, it is recommended to replicate the study with different age groups and may be used with an increased sample size to examine the comparison. The expansion of the study in other regions of India may be done.

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Nurturing Mental Harmony

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Abstract

This comprehensive exploration of mental health and emotional well-being underscores the intrinsic connection between our emotional states, thoughts, and actions. The narrative emphasizes the significance of understanding and managing emotions as an integral aspect of self-awareness, likening this capacity to our fundamental senses. Delving into the challenges adolescents face in expressing and comprehending their feelings, the discussion navigates through the impact of life's difficulties on emotional and mental well-being. Drawing insights from the World Health Organization's definition of mental health, the narrative advocates for a holistic approach, transcending the absence of disorders to actively fostering ongoing wellness and happiness. Addressing myths and facts surrounding mental health, the text dispels misconceptions and underscores the importance of a supportive environment. Finally, the exploration concludes with a mathematical approach to holistic health practices, highlighting quantifiable strategies for physical exercise, sleep hygiene, mindfulness, social connections, and therapeutic interventions as pivotal components in achieving optimal well-being.

Keywords: *Diagnosis, Psychotherapy, Medication, Mindfulness, Holistic Approaches*

Introduction

The journey toward mental harmony encompasses various dimensions, including self-awareness, mindfulness, and the development of positive thought patterns. It involves recognizing and understanding one's emotions, thoughts, and behaviors, and intentionally cultivating a mindset that supports overall mental well-being. Mental health and emotional well-being circles around the way we act, think and feel.

ACT: Acting aggressively and lashing out, feeling withdrawn and distant or stuck and unable to do anything.

THINK: Thoughts like doubt, suspicion or thinking you are no good.

FEEL: Feeling low in mood. Flat, angry, agitated, anxious or fed up.

Sometimes when we experience problems in difficult times, it can affect our emotional and mental well-being. At times, life can be hard. Past upsetting experiences, relationships, school or college, big changes or finding out who you are. This can make us feel stressed and worry about things. It can affect how we sleep, impact on our mood and make us unhappy or anxious. It may make us feel more angry than usual or want to hide away.

Nurturing mental harmony is not a one-size-fits-all endeavor; rather, it is a highly individualized and ongoing process. It requires a commitment to self-care and a willingness to explore different avenues that contribute to a sense of inner balance. This may involve seeking support from mental health professionals, building strong social connections, or adopting holistic approaches that address the interconnectedness of mind, body, and spirit. As a holistic approach to health, nurturing mental harmony contributes

not only to individual well-being but also to creating a more compassionate and harmonious society.

Emotional Well-being

Emotional well-being refers to the state of being in good mental health, characterized by the ability to cope with life's challenges, build positive relationships, and experience a range of emotions in a balanced and constructive manner. It involves understanding, managing, and expressing one's emotions in a healthy way, contributing to an overall sense of happiness, fulfillment, and resilience.

Let's consider a case study to illustrate the concept of emotional well-being:

CASE STUDY: Sarah's Journey to Emotional Well-being

Background: Sarah, a 32-year-old marketing professional, had been experiencing prolonged periods of stress and anxiety due to high-pressure work deadlines, strained personal relationships, and a general sense of dissatisfaction with her life. She noticed a significant impact on her emotional well-being, as she often felt overwhelmed, irritable, and unable to enjoy activities that once brought her joy.

Intervention and Strategies

SELF-AWARENESS AND REFLECTION:

Sarah started by engaging in self-reflection to better understand the root causes of her emotional distress. Through journaling and guided introspection, she identified specific stressors, triggers, and patterns of negative thinking that were affecting her emotional well-being.

1. THERAPEUTIC SUPPORT:

Recognizing the need for professional guidance, Sarah sought the help of a licensed therapist. In therapy sessions, she explored deeper emotional issues, learned coping strategies, and developed skills to manage stress. The therapeutic support provided her with a safe space to express her feelings and gain insights into her emotional challenges.

2. MINDFULNESS AND MEDITATION:

To enhance her emotional regulation, Sarah incorporated mindfulness and meditation practices into her daily routine. These practices helped her stay present in the moment, reduce anxiety, and develop a more positive outlook on life.

3. BUILDING SUPPORTIVE RELATIONSHIPS:

Sarah worked on strengthening her social connections by reaching out to friends and family. She opened up about her struggles and sought support from loved ones, creating a network of individuals who could provide emotional support and understanding.

Results

Over time, Sarah's commitment to improving her emotional well-being yielded positive results:

- INCREASED RESILIENCE:

Sarah developed resilience in the face of challenges, allowing her to navigate work pressures more effectively and bounce back from setbacks.

- IMPROVED RELATIONSHIPS:

As she became more in tune with her emotions, Sarah communicated more openly and authentically in her relationships. This led to stronger connections and a greater sense of social support.

- **ENHANCED JOY AND SATISFACTION:**

Through intentional efforts to engage in activities that brought her joy and fulfillment, Sarah experienced an overall improvement in her mood and life satisfaction.

This case study illustrates how an individual's journey toward emotional well-being involves a combination of self-awareness, therapeutic support, mindfulness practices, and building positive connections. Sarah's transformation reflects the positive impact that addressing emotional well-being can have on an individual's overall quality of life.

From Sunrise to Sunset: A Day in the Life of Mental Harmony

A harmonious day often begins with intentional morning rituals that set a positive tone for the hours ahead. From mindfulness exercises to gratitude journaling, individuals can choose practices that resonate with them personally. Engaging in activities that promote self-awareness and a sense of purpose in the early hours can significantly impact one's mental state throughout the day. Whether it's a few moments of quiet reflection, a brisk morning walk, or a nourishing breakfast, these rituals serve as anchors, grounding individuals in the present and fostering a mindset of tranquility.

In the midst of a bustling day, incorporating mindful moments becomes crucial for maintaining mental harmony. Short, focused breaks for deep breathing, stretching exercises, or even a brief meditation session can help alleviate stress and recenter the mind. Embracing mindfulness allows individuals to navigate challenges with greater resilience and clarity, creating a buffer against the

pressures of daily life. By integrating these moments of presence, individuals can cultivate an ongoing awareness that transcends the immediate demands of a busy schedule.

As the day progresses, the focus shifts to activities that nurture the soul and promote relaxation in the evening hours. This may involve engaging in hobbies, spending quality time with loved ones, or participating in activities that bring joy and fulfillment. Creating a conducive environment for winding down, such as dimming lights or disconnecting from digital devices, encourages a smoother transition into a restful night. These evening rituals contribute to a sense of closure and well-being, paving the way for rejuvenation during the night.

In the era of constant connectivity, maintaining mental harmony also requires a mindful approach to technology. Establishing boundaries for screen time, especially during the evening, allows for a more peaceful transition into bedtime. Leveraging technology for positive purposes, such as guided meditation apps or soothing music playlists, can enhance the overall well-being experience. Striking a balance between the convenience of technology and the need for restorative practices is integral to fostering a harmonious lifestyle in the modern age.

Quantifying Wellness: A Mathematical Approach to Holistic Health Practices

PHYSICAL EXERCISE:

Track and quantify the duration, intensity, and frequency of physical activities. Regular exercise has been linked to improved mood and reduced stress. Use metrics like the number of steps, heart rate, or calories burned to set and achieve fitness goals.

SLEEP HYGIENE:

Monitor and optimize sleep patterns, tracking the duration and quality of sleep. A good night's sleep is crucial for mental health. Utilize data on sleep cycles and disturbances to establish healthier sleep habits.

MINDFULNESS AND MEDITATION:

Measure meditation duration and frequency.

Mindfulness practices can positively impact mental well-being. Set goals for meditation sessions, and use apps that provide statistics on meditation consistency.

SOCIAL CONNECTIONS:

Quantify the frequency and quality of social interactions.

Building and maintaining social relationships is crucial for emotional well-being. Utilize metrics like the number of social events attended or the frequency of communication to assess social connectedness.

THERAPEUTIC INTERVENTIONS:

Measure progress in therapy using various psychological assessments. Therapeutic interventions, such as cognitive-behavioural therapy, may involve quantitative assessments to track emotional and mental health improvements over time.

GRATITUDE AND POSITIVE PSYCHOLOGY:

Keep a gratitude journal and quantify positive experiences. Positive psychology interventions, like expressing gratitude, can contribute to emotional well-being. Track and quantify instances of gratitude expression.

Diagnosis And Treatments (In Mental Health And Emotional Well-being)

Diagnosis

Accurate diagnosis forms the foundation of effective mental health care. Mental health professionals employ standardized diagnostic tools, interviews, and observation to assess symptoms and identify specific disorders. Conditions such as depression, anxiety, bipolar disorder, and schizophrenia are diagnosed based on established criteria outlined in classification systems like the DSM-5 (Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition).

Treatment Strategies

Once diagnosed, a personalized treatment plan is crafted to address the individual's unique needs. Various therapeutic approaches, such as cognitive-behavioural therapy (CBT), dialectical behaviour therapy (DBT), and psychodynamic therapy, aim to explore emotions, thoughts, and behaviours, fostering positive mental health. Psychiatric medications, including antidepressants, anxiolytics, and mood stabilizers, may be prescribed to manage symptoms. Medication is often combined with psychotherapy for optimal results. Practices like mindfulness meditation, deep breathing exercises, and progressive muscle relaxation contribute to stress reduction and emotional balance. In severe cases, hospitalization may be necessary for stabilization and safety. Crisis intervention services provide immediate support during acute episodes. Adopting a healthy lifestyle, including regular exercise, proper nutrition, and sufficient sleep, contributes significantly to overall well-being. Engaging in group therapy or support groups provides individuals with a sense of community,

understanding, and shared experiences. With advancements in technology, teletherapy and digital mental health tools offer accessible and convenient options for therapy and self-help resources. Some individuals benefit from holistic approaches, incorporating practices like yoga, art therapy, or animal-assisted therapy into their treatment plans.

Conclusion

In conclusion, understanding and managing emotions are fundamental aspects of human existence, akin to our capacities for sight, hearing, smell, touch, and cognition. The ability to articulate feelings becomes particularly crucial during adolescence, a period marked by heightened emotional pressures. Mental health and emotional well-being are intricately intertwined with our actions, thoughts, and feelings, manifesting in diverse ways such as acting aggressively, experiencing self-doubt, or feeling low in mood. Life's challenges, be they past experiences, relationships, or navigating identity, can impact our emotional and mental well-being, affecting sleep, mood, and overall happiness.

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நற்சிந்தனையின் ஆரோக்கியம்

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சுருக்கம்

சிந்தனை என்பது மனதில் உள்ள நிலைகளை, ஆலோசனைகளைக் குறிக்கும் செயல். இந்தச் சிந்தனையால் மனிதன் எவ்வாறு விளங்குகிறான் என்பதை அவன் செயல் தான் விளக்குகிறது. சிந்தனை செயல் எல்லாம் மனம் சார்ந்தது. ஒருவர் உடல் ஆரோக்கியமாக இல்லாமல் போகையிலும் அவன் மன ஆரோக்கியமாக இருந்தால் அவன் ஆயுள் கெட்டி. மன ஆரோக்கியம் மற்றும் மன அழுத்தம் என மனம் சார்ந்ததை பற்றி இவ்விதழ் விளக்குகிறது.

முக்கியமான வார்த்தைகள்: மன ஆரோக்கியம், சிந்தனை, மன அழுத்தம், உணர்ச்சி.

முன்னுரை

உலகெங்கும் உமிழ்ந்து விதையை மண்ணில் விட்டுச்செல்லும் பறவைப் போல், சிந்தனையால் வான்புகழ் வரைச் சிறகில்லாமல் கொடிகட்டிப் பறப்பவர்கள் மனிதர்கள்.

விண்ணையும் மண்ணையும் வெல்லும் இந்த மனிதனைப் பார்த்து எல்லாப் பிறவிகளும் பொறாமைப்படத்தான் செய்கிறது. அப்படி என்னச் செய்து விட்டான் இந்த மனிதன்? எப்படி அவனால் எல்லாம் முடிகிறது? அவனுக்கு இடையூறே இல்லையோ? என்றெல்லாம் கேள்வி எழும்பொழுது எப்படியோசித்தாலும் விடையாக இருப்பது ஒன்றுதான். எந்த ஒரு மனிதனின் சிந்தனை ஆரோக்கியமாக இருக்கிறதோ அந்த ஒரு சக மனிதனால் மட்டுமே வரம்புகழைத் தொட முடியும்.

சிந்தனையும் செயலும்

ஒரு வீட்டில் அக்கா, தங்கை இருவர் இருக்க, அக்காவை பார்த்துத் தான் தங்கை நடந்து கொள்வாள் . அதுபோல இந்த சிந்தனையைப் பொறுத்துதான் செயல் நிகழும். சிந்தனையும் செயலும் வேறல்ல.

எல்லா மனிதனும் சிந்தனையில் உயர்ந்தவனாக இருக்கிறானா? அப்படி இருந்துவிட்டால் நம் அனைவரின் மன ஆரோக்கியமும், வாழ்க்கையும் அமோகமாகச் செழித்திருக்கும். நல்லது ஒன்று நிகழ்கிறது என்றால் அதைப் பற்றி நீ சிந்தித்தால் நீ விதைத்த விதையாலே அது நிகழ்ந்திருக்கும். அப்படியே தீமையும். அதனால் கற்றுக்கொண்டப் பாடத்தை வைத்துச் சிந்தனையை சாணம் தீட்டுங்கள்.

மன ஆரோக்கியம்

மன ஆரோக்கியத்தில் நமது உணர்ச்சி, சமூக நல்வாழ்வு அடங்கும். நாம் எப்படி உணர்கிறோம், நினைக்கிறோம், செயல்படுகிறோம் என்பதை இதுப் பாதிக்கிறது. குழந்தைப் பருவத்திலிருந்தும்,

இளமைப் பருவத்திலிருந்தும் வாழ்க்கையின் ஒவ்வொரு கட்டத்திலும் மன ஆரோக்கியம் முக்கியமானது.

உணர்ச்சி நல்வாழ்வு

உணர்ச்சி என்பது ஆண் பெண் இருவருக்கும் பொதுவானவை ஒன்று. அழகை, சிரிப்பு, கோபம், எனச் சொல்லப்படுவது எல்லாமே உணர்ச்சிகள் தான். ஒருவரின் உணர்ச்சியை கண்டு பழிக்கவோ, பழிச் சொல்லவும் கூடாது ஏனென்றால் அது தனிப்பட்டதாகும். ஆண் பிள்ளை அழக் கூடாது என்றுப் பலப்பெரியோர்கள் சொல்லி கேள்விப்பட்டிருப்போம். ஏன் அவன் அழக்கூடாது? அவனுக்கும் இந்த உணர்ச்சிகள் எல்லாம் பொதுவானவை தானே. அவன் அழுதால் தானே அவன் மனதுக்குள் இருப்பதெல்லாம் வெளியேறும். அவனை ஆண் பிள்ளை அழாதே என்று சொல்லி அவன் அழுகையை அடக்கி விடுகிறார்கள், அதை அவன் கோபமாக வெளி காட்டுகிறான். அழுகையோ, எந்தவித உணர்ச்சியாக இருப்பினும் அந்த உணர்ச்சியை சரியான முறையில் முற்றிலுமாக வெளிக்கொண்டு வரவேண்டும்.[2]

மன ஆரோக்கியமும், உணர்ச்சிகளும்

இந்த மன ஆரோக்கியத்திற்கும் உணர்ச்சிக்கும் என்ன சம்பந்தம்? மனதில் பலக் குழப்பங்களை சுமக்கிறோம். குழப்பங்கள் என்று மட்டும் சொல்ல முடியாது சந்தேகங்கள் வன்மம் கவலை தேவையில்லாதவற்றையெல்லாம் நாம் குழப்பிக் கொள்கிறோம். அதனால் நம் மன ஆரோக்கியம் கெட்டு மன அழுத்தமாக மாறுகிறது. அந்த மன அழுத்தம் உணர்ச்சிகளாக வெளியேறுகிறது. இது ஒரு பக்கம் இருக்க மறு பக்கம், உணர்ச்சிகளால் மன ஆரோக்கியம் கெட்டுவிடுகிறது. இதனால் நாம் என்ன செய்கிறோம் என்று தெரியாமல் சில சந்தர்ப்பங்களில் நடந்துக் கொள்கிறோம். இந்த மன ஆரோக்கியத்தை சரியாகக் கடைப்பிடித்தால் நாம் எதையும் வெல்லலாம்.

குழந்தைகளுக்கு

“ஐந்தில் வளையாத ஐம்பதில் விளையுமா?” சிறு வயதில்தான் குழந்தைகள் மனதாலும் உடலாலும் ஆரோக்கியமாக இருப்பதற்குத் தொடங்கும் தொடக்கம். சிலவற்றை கடைப்பிடித்து அவர்கள் தொடக்கத்தை இன்பமாகவும், நல்வழியாகவும் தொடக்கி வைக்கலாம்.

- அவர்கள் முன் கெட்ட வார்த்தைப் பேசுவதை நிறுத்தலாம்.
- இனிமையான வார்த்தைகளை சொல்லித் தரலாம்.
- அக்குழந்தையின் மீது கோபம் கொண்டோ, அந்தக் குழந்தையின் முன் மற்றவர்கள் மீது கோபம் கொண்டோ அவதூறாகப் பேசுவதைத் தவிர்க்கலாம்.
- அறக்கதைகள் சொல்லித் தரலாம்.

இளமைப் பருவம்

இந்தியாவின் தூண்கள் எனப் போற்றப்படும் நம் மாணவ /மாணவிகள் மன அழுத்தத்தினால் தவித்துக் கொண்டிருக்கிறார்கள். காதல், தோழமை குடும்ப சூழ்நிலை இவற்றினால் மன அழுத்தம் கொள்பவரை விட, காரணம் என்னவென்றுத் தெரியாத இளமைத் தூண்களே இங்கு ஜாஸ்தி. இப்படி ஒரு நிலை சந்தர்ப்பங்களினாலும், வயது மாற்றத்தினாலும் கூட ஏற்படலாம். இவைகளையும் தடுக்கும் முறை உண்டு.[3]

- பாட்டு கேட்கலாம்.
- நல்ல புத்தகங்கள் படிக்கலாம்.
- பெற்றோர்களுடன் மனதை விட்டு பேசலாம்.
- பிடித்தத் தோழமையுடன் கலந்துரையாடலாம்.
- ஆடித், திரிந்துப் பறக்கலாம்.

அறிவுரை கசக்க தானே செய்யும்

அறிவுரைகள் கசக்கும் ஆனால் அந்த கசப்பினில் உள்ள இனிப்பு யாருக்குமேத் தெரியாது.

- பொய் சொல்லிப் பழகாதீர்கள்.
- பிறர் பொருளைத் திருடாதீர்கள்.
- அறவழியில் செல்லுங்கள்.
- தூய்மையான பாடல்களை கேளுங்கள்.
- தியானம் செய்யுங்கள்.
- உடல் பயிற்சி செய்யுங்கள்.
- பிரச்சனையிலிருந்து நீங்களே விடுவிக்க எப்பொழுதுமே உங்களைப் பரபரப்பாக வைத்துக் கொள்ளுங்கள்.

முடிவுரை

பார்வையில் இருந்து தான் சிந்தனை, செயல், நம் குணம் என அனைத்தும் பிறக்கிறது. இன்பமும் துன்பமும் நம் இடமிருந்து பிறக்குது. மன ஆரோக்கியத்தை துல்லியமாக ஆரோக்கியமாக பார்த்துக் கொள்ளுங்கள். இந்த கணம், இந்த உரையாடல், ஒரு கேள்வியுடன் முடிகிறது. உங்கள் மனதில் இப்பொழுது என்ன இருக்கிறது?

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Perceived Social Support and Bullying among Young Adults

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Abstract

In the contemporary landscape, the surge in perceived social support and the concurrent rise in bullying among young adults have become noteworthy concerns, casting shadows on mental well-being. Addressing this, the current study delves into the intricate relationship between perceived social support and bullying in this demographic. Employing a correlational research design and adopting a simple random sampling method, the study draws on data from 150 participants, with 105 females and 45 males, encompassing both married and unmarried individuals. The Multidimensional Scale of Perceived Social Support (MSPSS) and the Child Adolescent Bullying Scale (CABS) serve as crucial instruments for data collection. Utilizing the statistical prowess of SPSS, the study unveils significant relationships between perceived social support and bullying. Strikingly, findings underscore that a heightened quality of perceived

social support is pivotal for mitigating the occurrence of bullying among young adults. The nuanced analysis positions social support as a crucial determinant in shaping the mental health landscape for this demographic, emphasizing the need for interventions that bolster supportive networks to curtail the deleterious effects of bullying on individuals' psychological well-being. In essence, the study propels the understanding that nurturing robust social support structures can serve as a formidable deterrent against the burgeoning prevalence of bullying among young adults.

Keywords: *Perceived social support, Bullying, Young adults*

Introduction

The term "perceived social support" describes a person's subjective assessment of the suitability and accessibility of help from their social network during difficult times (Sarason, Levine, Basham, & Sarason, 1983). An individual's psychological and physical health, as well as their capacity to handle stress, can be significantly impacted by this impression (Cohen & Wills, 1985). Studies have indicated that those who experience more social support from others generally have superior mental health outcomes, including lower levels of anxiety and sadness (Thoits, 2011). Furthermore, it has been discovered that perceived social support might mitigate the adverse impacts of stress on physical well-being, including immune system function and cardiovascular disease (Uchino, 2009). However, it is important to note that perceived social support may not always align with actual social support received, and that cultural and individual differences may impact the way individuals perceive and seek social support (Kim & Sherman, 2007).

Bullying is a widespread and serious issue that affects individuals of all ages and backgrounds. It is defined as the intentional and repeated use of power to harm, intimidate, or control another person, often through physical, verbal, or relational aggression (Olweus, 1993). Bullying can have significant negative impacts on mental health, academic achievement, and social functioning for both the victim and the perpetrator (Bradshaw, Sawyer, & O'Brennan, 2007; Espelage & Swearer, 2003). 20% of American students reported being bullied during the 2016–2017 educational year, based on a survey by the National Centre for Education Statistics (NCES, 2019). This figure emphasizes how widespread harassment is and the importance of developing strong preventative measures and techniques for intervention.

A study was done by Nirwana Permatasari et al., (2021) to analyse and evaluate each finding regarding how friends, relatives, and instructors are seen as providing support in society for academic resilience based on online learning during COVID-19. The variables used in this study were Perceived Social Support and Academic Resilience. Respondents were 291 students from Politeknik Ilmu Pelayaran (Marine Science Polytechnic) in Makassar City. They used a Convenience sampling method to collect their data for the research. Tools used in this study were Social Support Appraisal Scale created by Dubow & Ullman (1989) and the Academic Resilience Measurement Tool, created by Afriyeni et al. in 2020. Utilising SPSS as a statistical tool, linear regression analysis was used to analyse the information collected. The outcomes of the research demonstrate that family support is the factor that helps adolescents the most through their online education and has the biggest impact on their ability to remain resilient academically.

Methodology

Aim:

A study is to identify the relationship between perceived social support and bullying among young adults.

Objectives:

- To study the level of perceived social support among young adults.
- To identify the level of bullying among young adults.
- To find the relationship between the perceived social support and bullying among young adults.

Hypothesis:

Ho: There will be no significant relationship between perceived social support and bullying in young adults.

Research design:

The current study uses a quantitative correlation research approach to examine the connection between young adults' perceptions of social support and bullying. Bullying was the dependent variable, and perceived social support was the independent variable.

Sampling technique:

The sample for this investigation was chosen using a straightforward random sampling method. There were 105 females and 45 males among the 150 young people that made up the study's sample. Married or single young adults between the ages of 11 and 26 who were available to participate in the study at the time of the research. The research participants were drawn from

Andhra Pradesh, Bangalore, Kerala, and Tamil Nadu, among other regions of India.

Tool used:

Multidimensional Scale of Perceived Social Support (Zimet et al (1988).)

Child Adolescent Bullying Scale (Strout et al., 2018)

Tool description and procedure:

The Zimet et al. (1988) Multi-Dimensional Perceived Social Support Scale (MPSSS). The self-assessment scale has 12 items total and is divided into 3 subscales, each with 4 questions. The subscales measure how adequate a person's social support is and use a seven-point Likert scale, where 1 indicates "I completely disagree" and 7 indicates "I completely agree." The subscales are: Social support from family, Social support from friends, and Social support from significant others.

The authors of the Child Adolescent Bullying Scale are (Strout et al., 2018). In total, there are twenty items. The standardized Cronbach alpha coefficient for the CABS scale results was 0.97. Corrected item-total correlations (item discrimination) ranged from 0.61 to 0.87 and are well above the 0.30 cutoff point for deletion. The content validity of the CABS items is explained elsewhere (DiFazio, Strout, Vessey & Lulloff, under review, 2017). By contrasting the CABS ratings for the bullied and non-bullied groups based on CBVS divisions, the construct validity of the CABS was shown. A statistically significant difference in means (32.5 victimized vs. 51.2 non-bullied, $t = -11.159$, $df = 237.68$, $p < 0.001$; equal variability not assumed) was seen in the results.

Procedure:

The participants were met individually. They were given a brief explanation of the study's objectives before being asked for their participation. The Multidimensional Scale of Perceived Social Support and Child Adolescent Bullying Scale were administered to participants along with the necessary instructions following the collection of socio demographic data. As soon as the survey was finished, it was collected, and everyone was thanked for taking the time to do so.

Statistical analysis:

Statistical Package for Social Science (SPSS) was used to perform bivariate correlations.

Inclusive criteria:

- The participants in the age range of 11-26 years were selected.
- Reasonableness to participant.
- The sample will involve boys and girls.
- The sample will involve students of all course (UG, PG)

Exclusive criteria:

- The participants below 10 years and above 27 years were not included for the study.
- Uneducated people will not be included in the sample.

Result and discussion

This chapter discusses the results and interpretation of the analysis done to understand the relationship between perceived social support and bullying among young adults.

Table 1: Descriptive statistics showing the mean and standard deviation of perceived social support and bullying among young adults

Variables	Mean	Standard Deviation	N
Perceived social support	58.40	17.412	150
Bullying	50.65	18.529	150

The descriptive table shows the mean and standard deviation for the variables. Perceived social support has a sample N=150, mean=58.40 and standard deviation=17.412. Bullying has a sample N=150, mean=50.65 and standard deviation=18.529.

Table 2: Correlational analysis showing the relationship between perceived social support and bullying among young adults

Variables	Pearson's correlation	r value	Decision
Perceived social support	1	.392**	Rejecting(H0)
Bullying			

*Correlation is significant at 0.01 levels (2-tailed)

Table 2 shows the values of Pearson's correlation among the two variables. There appears to be a correlation of 1 and a significance of .392** ($p < 0.01$). There is significance at .001 level

and a positive correlation between perceived social support and bullying. It implies that the higher the level of perceived social support, the higher will be the level of bullying.

As a significant relationship is noticed between the two variables, there is a relationship between perceived social support and bullying. Thus, the null hypothesis (HO: There is no relationship between perceived social support and bullying) is rejected. This study examined the association between perceived social support and bullying. It revealed that perceived social support exchange has a positive and significant effect on bullying.

Discussion

The research aimed to explore the correlation between perceived social support and bullying among young adults. Perceived social support, representing an individual's subjective belief in the availability of emotional, instrumental, or informational assistance, holds sway over well-being, impacting overall happiness, self-esteem, and coping abilities. In the face of bullying victimization, perceived social support emerges as a mediator, mitigating negative psychological impacts through emotional comfort, advice, and validation.

Studies, including Osterman et al. (2015), consistently affirm that higher perceived social support correlates with diminished bullying victimization and reduced psychological distress. Future bullies may be deterred by encouraging peer groups, creating a protective environment against bullying behaviors. Gender nuances reveal that girls may be more influenced by close friendships, while boys may prioritize peer acceptance and physical strength in bullying dynamics.

Notably, perceived social support acts as a protective factor against bullying, fostering positive school climates that prevent

and address such behaviors (Sinclair et al., 2012). The study's results confirm a significant relationship between perceived social support and bullying, with increased support correlating to reduced bullying chances, substantiating the approved alternative hypothesis and the rejection of the null hypothesis.

Conclusion

The present study shows significant correlation between the scores obtained using the said questionnaires, and indicates a positive correlation between the two variables, i.e., that the quality of perceived social support must be high in order for young adults to experience a low level of bullying.

Limitations

Limitations to this study which are worth noting, the population of young adults in India is huge, but the sample size is very small in comparison. The data was collected by only Chennai. The participants below 10 years and above 27 years were not included for the study. The sample will not involve uneducated people.

Recommendations

For future studies in this area, it is recommended for researchers to replicate the study with a larger sample size. They can select all regions or states to collect data from and do a comparative analysis. The data were collected equal number of female and male adults and using t-test. In research we can use t-test which was at the same level of male and female respondents.

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A Study On Impact Of Emotional Well-Being On Academic Performance Of Students

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Abstract

Emotional well-being refers to how people are facing their mixed emotions and managing their mood swings and how the obstacles are being tackled by them throughout their lifetime. The emotional well-being of young adults is vital for sustainable development, making them a foundation of society. The main objective of this study is to determine the factors that influence the emotional well-being of students and to find the impact of emotional well-being on academic performance of students. Since it plays a crucial role in shaping exceptional graduates who will become future leaders and important manpower for the country. Primary data will be collected through a structured questionnaire from 256 respondents. The statistical tools used for analysis are percentage, mean, correlation, Multiple regression. The observation will be studied and presented in the form of findings.

Keywords: *Mental well-being, Academic performance, Social well-being*

Introduction

Emotional well-being is an ability of a person who comes up with positive emotions, thoughts, feelings and he/she adapts

into themselves while facing the challenges Emotional well-being influences how well someone handles daily life and copes with change. Students and their emotional well-being form a symbiotic relationship which is essential to holistic development. Factors like a supportive environment, positive relationships, and effective stress management contribute to a healthy emotional state. Acknowledging the importance of emotional well-being is crucial, as it directly affects cognitive function, motivation, and overall academic performance. Prioritizing emotional well-being in students promotes not only academic success but also sets the foundation for their well-rounded growth and long-term success in various aspects of life.

Review of Literature

Hascher, 2010; Nishina, 2012; Kuroki, 2013; Young-Jones et al., 2015; Alessandri et al., (2020) reports that the well-being of students has attracted considerable attention in educational research and is closely linked to their academic performance, Nickerson et al., (2011), says that well-being is recognised as both a forerunner to and a consequence of academic success in educational research.

Diener et al., 2010 conveys that well-being encompasses an emotional facet and a judgmental-appraisal component, with the latter signifying an individual's self-assessment of overall life satisfaction.

Li and Lin, 2003; Eisenberg et al., 2009; Green et al., 2021, states that academic stress has been demonstrated to have adverse effects on the mental health of students.

Ryan and Deci, 2001; Tennant et al., 2007; Galderisi et al., 2015; Trout and Alsandor, 2020; Defeyter et al., 2021; Green et al., 2021; discloses that feeling good mentally is a key aspect of

positive mental health, involving happiness, life with satisfaction, handling stress, and how the mind works.

Tennant et al., 2007; Margraf et al., 2020; express that studying positive mental health, often neglected but vital, adds to our understanding of overall well-being.

Margraf et al., 2020 states that Positive mental health has been indicated to predict both negative and positive mental health indicators over time.

Tennant et al., 2007; Eisenberg et al., 2009; Freire et al., 2016 explored the the connection between academic stress and mental well-being is essential, as poor mental well-being has been demonstrated to impact college academic performance

Statement of Problem

Emotional well- being is considered to be an eternal part in deciding the success of students in their academics, career and future life. It is important to prioritize the emotional well-being since it is vital for leading a fulfilled life across of the individual's social domain. The statement of the problem aims to focus on mental health factors which could possibly influence their academic success beside their social interaction. In this digital and fast moving world, it is required to understand the emotional well-being of students and their impact on academics. This study aims to look into how students' mental health and academic performance in their social life.

Objectives of the study

The objectives of the study are as follows:

1. To analyze the respondent's demographic background.

2. To determine the factors that influence the emotional well-being of students on their academic performances.
3. This study seeks to analyze how factors influencing students' emotional well-being impact their academic performance and to examine the relationship between emotional well-being and academic performance of students.

Methodology

This is a survey-based descriptive study. Primary data was collected through a structured questionnaire with two sections. Part A consisted of questions which are related to demographic profile of the respondents such as gender, age, education. Part B consisted of factors that influence the emotional well-being of students which was measured on a five-point Likert scale of strongly agree to strongly disagree. Purposive sampling method was used to collect data in Chennai during December 2023 from various college students. The sample size is 256. The pilot study was conducted to test the reliability of the questionnaire. The Cronbach's alpha of the questionnaire is 0.920. The data collected was analysed using the statistical techniques like Percentage analysis, Correlation and Multiple Regression.

Conceptual framework of the study

A Strong academic performance is the one which offers various opportunities for the successful career to the students. An academic performance of students is often influenced by the factors of emotional well-being. This study takes into two major factors to identify which has a greater impact on academic performance of students. There are independent variables like Mental well-being

and social well-being and dependent variables like academic performance. The conceptual model is shown below.

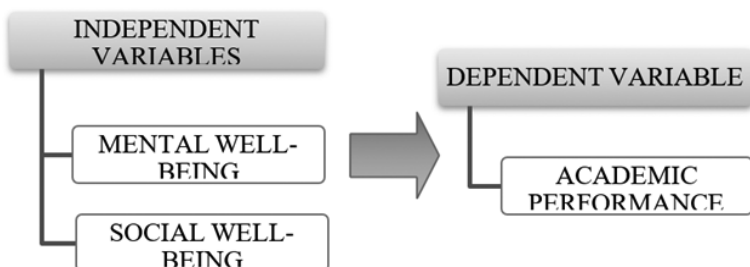


Fig 1: Conceptual framework of the study

Limitations of the Study

- The sample size of the respondents is limited to 256 only.
- The data is collected from Chennai City.
- The study is limited only to students.
- The respondents are only students belonging to the age group of 15-23 years.

Data analysis and interpretation

Percentage analysis

Table 1: Demographic Profile of the respondents

Information of the Respondents		PERCENTAGE (%)
Gender	Male	9.77
	Female	90.23
Age (in Years)	15- 17	5.86
	18-20	87.11
	21-23	7.03
Educational Qualification	School	9.97
	UG	86.32
	PG	3.1
	Professional	0.78

The above table indicates that the majority of respondents are females (90.23%) who are undergraduates, and fall within the age group of 18-20 years (87.11%). (Table 1)

Table 2: Factors Determine the Emotional wellbeing of students

S.No	Factors	Mean Value
1	Mental Well Being	3.63
2	Social Well Being	3.53

From the above table 2, it is observed that most of the respondents agree with the statements of mental well-being that they have good problem solving abilities, feeling confident on themselves to engage on new things conveys that they are strong enough to handle them mentally (3.63) followed by social interaction of the students were they agree that they are able to create a supportive relationships which helps them in enhancing the collaboration with peers (3.53).

Correlation between factors of Emotional Wellbeing and Academic performance of students

Correlation was performed to find out if there is any significant relationship between factors of emotional well-being and academic performance of students

Table 3: Relationship between factors of emotional well-being and academic performance of students

S.No	Factors	R value
1	Mental well Being	0.712
2	Social well Being	0.590

Note: **Correlation is significant at 1% level.

From the above table 3 it is observed that Mental Well Being (0.712) of students is highly positively correlated which infers that they have positive mental health regarding reliance, confidence and concentration to actively participate in new things conveys that they are better equipped to handle academic pressures and engage actively in their studies . Social well-being (0.590) is also positively correlated as students agree that the supportive environment provides them with emotional stability which makes them able to be a part of society improving a students' ability to focus on their studies and achieve academic success.

Multiple regression between factors of Emotional Wellbeing that influence academic performance of students

Multiple regressions were performed to see how emotional well-being factors affect students' academic performance.

Table 4: Multiple Regression between factors of emotional well-being on academic performance of students

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.727 ^a	0.528	.524	.61185

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	106.014	2	53.007	141.595	.000 ^a
	Residual	94.712	253	.374		
	Total	200.726	255			

a. Predictors:(Constant), Mental Well-Being, Social Well being

b. Dependent Variable: Academic Performance

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.160	.200		.798	.425
	Mental Well Being	.693	.071	.579	9.835	.000
	Social Well Being	.220	.066	.197	3.346	.001

a. Dependent Variable: Academic performance

According to the above table 4 , The multiple R value shows a substantial correlation between factors of emotional well-being on academic performance of students ($R = 0.727$). The R square value indicates that about 52.8% of the variance in the academic performance is explained by those factors.

Academic Performance = $0.160 + .579$ (Mental Well -being) + 0.197 (Social Well - Being).The β value indicates the relative influence on the entered variable where the Mental Well - Being (0.579) has greatest positive influence on academic performance of students as they have good cognitive abilities such as attention, problem solving-skills , self-sufficiency which are crucial for academic success followed by Social Well-Being(0.197) of students where they interact socially but it has less influence on academic performance as it does not affect their mental health. (as stated in the book SPSS for Windows – Darren George / Paul Mallery).

Scope for future Studies

This study can be carried out with a big number of responses from students in other cities and can be collected to differentiate the emotional well-being of students.

Findings & Conclusion

It can be observed that mental well-being is highly and positively correlated with their academic performance than socialwell-being of the students as because the mental well-being influences abilities, emotional regulation and concentration which directly affects how

students engage with their overall academic performance. Social well being was correlated positively but at a lower level which infers that students are able to interact socially but that does not have more impact on academic success or failure . Therefore, academic performance depends on mental health factors either positively or negatively in the presence of digital platform.It can be concluded that there's a clear connection between students' mental and social well-being and their academic performance. Strategies that emphasize mental health support promote positive social interactions, and enhance emotional well-being that can significantly contribute to improved academic outcomes for students.

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Institutional Vision, Values and Practice

Best practices of Higher Education Institutions with the highest scores in NAAC accreditation in 2023: A Study

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Abstract

Indian Higher Education is as diverse as the country. Institutions cater to various academic disciplines and fields. From central, state-funded, autonomous to private universities HEIs continue to thrive despite the challenges. The significant growth in the last few decades, with many private players in the fray, also calls for checking quality parameters. With Privatisation, transformation in society, industry linkages and trying to adopt new-age technologies HEIs have to keep updating. National Assessment and Accreditation Council (NAAC), an autonomous institution of the University Grants Commission (UGC), envisions quality assurance as an integral part of the functioning of Higher Education Institutions (HEIs). They have identified seven criteria for the assessment process. Our paper looks at the Best practices of the Institutions - Universities and Colleges- that have received the highest ranking in NAAC accreditation in 2023. The best practices of these institutions will be discussed.

Keywords: NAAC, HEI, Ranking, Best practices

Introduction

Indian Higher Education is as diverse as the country. Many Institutions offer a wide range of programmes which cater to a broad spectrum of academic interests.

From central, state-funded, autonomous to private universities HEI continues to thrive despite the challenges. Privatisation, societal transformation, industry linkages and adopting new-age technologies require HEIs to keep updating. The significant growth in the last few decades, with many private players in the fray, also calls for checking quality parameters.

National Assessment and Accreditation Council (NAAC), an autonomous institution of the University Grants Commission (UGC), envisions quality assurance as an integral part of the functioning of Higher Education Institutions (HEIs).

They have identified seven criteria for the assessment process. Our paper examines the Best practices of the Institutions - Universities and Colleges- that have received the highest ranking in NAAC accreditation in 2023. The best practices of these institutions will be discussed. The best practices of an Institution determine its speciality and individuality.

Objective

To observe the best practices of the Institutions that secured the highest score in the NAAC accreditation process in the year 2023.

Methodology

Institutions that underwent the NAAC accreditation process in 2023 were taken for the study. They were then divided into seven classifications: Central University, State University, State Private

University, Deemed University, Affiliated/Constituent colleges, Affiliated PG & above colleges and Autonomous colleges. The institutions were identified based on the highest scores they secured. The top Institutions with A++ ranking under each category are listed and the Best practices of the highest-scoring institution in each category are discussed. The best practices were extracted from the AQAR reports from the official websites of the institutions except one, which was taken from the SSR.

Literature Review

In the study titled ‘Best Practices of Top (NAAC) Accredited (State-wise) Colleges in India’ Dr Datta Sawant discusses the best practices of Institutions that secured the top rank in 2016 under the NAAC assessment. Having selected 30 state-wise top NAAC-accredited colleges, he has compared them with their NIRF ranking. Subsequently, he obtained data on the best practices undertaken by these colleges from their respective websites. Dr.Sawant believes that these practices can instil a scientific approach to issues or problems in society. He states “Best practices are the agents of change for a particular educational institution and society as well.”

In their study “Qualitative Aspects of Quantitative Metrics of Self Study Report in the Accreditation Process for Assessment of Higher Education Institutions” Kumar et all state that “In order to obtain high assessment score, the HEIs have to work in both quantitative as well as qualitative aspects of SSR. HEIs, while working within their financial constraints, must plan to organize activities as per requirements of quantitative metrics, since these are closely associated with quality enhancement and help in maintaining quality culture in the institutions.”

Analysis and Discussion

The Best practices undertaken by the top seven Institutions are summed up below (Table 1)

Table 1: Higher Education Institutions (under different categories) with the highest scores in NAAC accreditation 2023 and their best practices are listed in the table below

S. No.	Type of Institution	State	Name of Institution	Assessment Date	Grade	Score	Best Practice
1	Central University	UTTAR PRADESH	BABASAHEB BHIMRAO AMBEDKAR UNIVERSITY(U-0498)	18/10/2023	A++	3.72	Eco-friendly, clean and green campus Skill Enrichment for Professional Development
2	State University	UTTAR PRADESH	DEEN DAYAL UPADHYAYA GORAKHPUR UNIVERSITY, GORAKHPUR(U-0508)	17/01/2023	A++	3.78	Comprehensive education using online mode Green campus with zero waste
3	State Private University	PUNJAB	LOVELY PROFESSIONAL UNIVERSITY U-0379	12-08-2023	A++	3.68	Responsiveness towards learners Accountability Transparency
4	DEEMED UNIVERSITY	MAHARASHTRA	DATTA MEGHE INSTITUTE OF HIGHER EDUCATION AND RESEARCH (DEEMED TO BE UNIVERSITY)(U-0295)	19/07/2023	A++	3.78	Faculty development for institutional development Healthcare with Aarogya Setu programme

5	AFFILIATE D PG & Above college	TELANGANA	KAMALA INSTITUTE OF TECHNOLOGY AND SCIENCE C-19928	24-01-2023	A++	3.6	Contribution to environmental sustainability Involving Alumni in student employability
6	Affiliated/Constituent Colleges	MAHARASHTRA	RAJARSHI CHHATRAPATI SHAHU COLLEGE, KOLHAPUR (C-11037)	02/08/2023	A++	3.78	Commerce carnival Intercollegiate Wallpaper Competition
7	AUTONOMOUS COLLEGES	WEST BENGAL	RAMAKRISHNA MISSION VIVEKANANDA CENTENARY COLLEGE(C-43402)	10/03/2023	A++	3.8	Character-building Education

Babasaheb Bhimrao Ambedkar University

Eco-friendly, clean and green campus- The University prioritises sustainability and an eco-friendly environment through initiatives such as planting more than 10,000 trees, installing solar panels, implementing energy-efficient LED lighting systems, rainwater harvesting and managing waste effectively. These efforts collectively contribute to a green campus, aiming to promote sustainability among its stakeholders. Additionally, the University conducts periodic green audits and awareness programmes and it has established an Eco Club to foster a commitment to nature on the campus.

Skill Enrichment for Professional Development- The University aims to enhance students' personality and professional skills including communication, time management, teamwork, work ethics, etc. through foundational courses such as English, Community Service, and Gender Studies. Ambedkar Studies, etc. taught by experts. Techniques such as practical training

and video lectures are employed to make students socially and environmentally conscious, fostering the development of their communication skills. This, in turn, increases placement success and employability.

Deen Dayal Upadhyaya Gorakhpur University

Comprehensive education using online mode- The University has been offering various courses at every level in online mode. It has also been using online processes for admissions, answer sheets evaluation and exam results declaration. Lectures and study materials are shared online using various channels, such as social media platforms. Similarly, the e-pathshala portal is used for sharing resources with the students.

Green campus with zero waste- The University utilises composting machines to turn biodegradable waste into composts for the campus and farmers in the neighbouring locality. A biogas plant is set up to produce biofertilizers and biogas from waste. Solar panels and solid waste management are the other strategies followed for efficient resource and waste management. The University also offers a course on Zero Waste and Resource Management to all undergraduate students.

Lovely Professional University

Responsiveness towards learners- The University emphasises being responsive to students by having dedicated offline and online toll-free helpdesks to address their needs and doubts. Students are also given opportunities to earn during their course.

Accountability- It maintains accountability through practices such as following transparency in faculty assessment and strictly adhering to the academic calendar.

Transparency- It also maintains transparency through the efficient sharing of necessary information with the stakeholders and managing a transparent system for evaluation and monitoring.

Datta Meghe Institute Of Higher Education And Research

Faculty development for institutional development- The institute employs a holistic approach to Faculty Development Programmes by emphasising not just teaching performance but rather by combining it with various social and financial aspects. This approach covers areas such as pedagogy, assessment techniques, leadership, research, networking and collaboration. It emphasises the collaboration among various centres within the institution. It uses the Kirkpatrick model for FDP evaluation and faculty performance assessment.

Healthcare with Aarogya Setu programme- The institute aims at addressing various healthcare challenges of Central India's tribal and rural population. The objective of the programme is to offer community-centric education and by making healthcare accessible to the marginalised sections. Strategies include providing health insurance, initiatives for blindness control, mobile health, health camps, primary healthcare, geriatric care and linking community healthcare service with educational programs. It achieves this through collaboration with government, NGOs and CSR programmes.

Kamala Institute of Technology And Science

Contribution to environmental sustainability- The institute adopts activities with a service motto and sustainable projects to make students understand environmental issues, and their role in protecting the environment. Student associations and NSS are regularly involved in service activities in the neighbouring

villages. The activities focus on creating awareness of various issues like plastic usage and atmospheric pollution while using engineering solutions.

Involving alumni in student employment – Connecting students with alumni for employability and employment and using the right approach to training and other pedagogical initiatives to empower learners studying engineering to meet the demands of diversified industries. The strengths and weaknesses of advanced and slow learners are individually identified and they are trained and moulded into experts in their relevant field of study. ICT-enabled learning, collaborative learning, flipped classrooms, industrial visits, language labs, soft skill development, internships and collaboration with alumni have enabled the students to emerge successfully in their careers.

Rajarshi Chhatrapati Shahu College

Commerce Carnival- The institute organises a yearly trade fair titled ‘Commerce Carnival’ to foster a climate of intuitive thinking for business skill development and entrepreneurship. Students are taught about the various aspects of marketing and strategies such as negotiation, advertising, consumer psychology etc. and encouraged to participate in various entrepreneurial activities. Stalls are set up on the campus where students sell commodities ranging from groceries to jewellery and hundreds of people including parents, alumni and businessmen attend the event.

Intercollegiate Wallpaper Competition- The event offers a platform for students to raise awareness about various social issues through creative means. The multidisciplinary competition has been held for the past four years with participation from several colleges and sensitised the college community about various social issues.

Ramakrishna Mission Vivekananda Centenary College

Character-building Education- As a part of the Ramakrishna Mission, the college aims to shape students with the ideologies of Swami Vivekananda. The college views education as training in controlling one's will and directing it positively. According to Swami Vivekananda, education is the process of Man-making, which not only instils practical skills among students but also imparts spiritual and moral values. The institute achieves this through the creation of a calm and orderly ambience and exposing learners to various programmes about spirituality and Indian culture. By encouraging various discourses about spiritual topics, celebrating the ideals of religious luminaries and promoting spiritual literature the college aims at contributing to the overall growth of the students.

Conclusion

The best practices of these Institutions draw attention to the different practices adopted by the highest-scoring Institutions in the NAAC Accreditation (2023). While some institutions emphasise on professional and career-oriented development of the students, most of the highest-scoring institutions follow practices of social responsibility, focusing on the holistic development of students. These practices emphasise values such as sustainable and eco-friendly living, aiding the local community and building student's character. Additionally, the practices also support a culture of academic and faculty development. Recognition of these best practices will foster a competitive environment and help Institutions upgrade Academic and Infrastructural facilities while maintaining their uniqueness.

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Students and Parents Outlook: Outcome of Indian Liberal Arts Education

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Abstract

The ability to learn new things all through life is a symbol of a liberal arts education. Over time, specialized skills might become outdated, but knowledge acquired through liberal arts education will not. We need to be able to write, communicate, solve problems, adjust to changing circumstances, scrutinise information, and work with a varied range of people in almost every profession. Liberal arts education teaches these abilities, which are highly valuable to any proprietor. A liberal arts education equips students for the dynamic nature of the modern workplace. Employers find liberal arts graduates appealing because they have acquired the skills needed to adjust to a workforce that is constantly changing. Studying at a college or university with the goal of fostering intellectual growth and general knowledge is known as a liberal arts education. Students who pursue a liberal arts education are equipped for a range of careers. This is not like other

educational programs where students learn job - oriented skills for a particular job. This study aims to analyze the skills obtained by students in a liberal arts course and their parents' observations. The data collected shows a positive response from both the students and parents regarding skills developed by students in their respective liberal arts colleges.

Keywords: *Liberal arts, students, skills, education, Knowledge*

Introduction

In the educational system, liberal arts education and Indian residential liberal arts colleges have an extensive and esteemed history. The deeply held conviction that an undergraduate education should be a life-changing experience that profoundly alters the individual is at the core of this custom. It is anticipated that liberal arts education will most likely provide the academic and cultural way of life that catalyzes this transformation, when it comes to residential liberal arts colleges. Student development is generally maximized in a certain institutional ethos or social-psychological context, according to Pascarella & Terenzini, 1998. Strong faculty emphasis on teaching and student development, a shared value of the life of the mind, small class sizes, a shared intellectual experience, superior learning expectations, and close collaboration between students and faculty as well as between students and peers both inside and outside of the classroom seem to be components of this ethos. The numerous effects of liberal arts education and colleges on students are gradually coming to light thanks to a growing corpus of evidence. The overwhelming majority of the evidence points to liberal arts colleges as having a higher likelihood of fostering student growth on a range of educational outcomes than other types of institutions, especially those that are academically selective (Astin 1993, 1999; Umbach &

Kuh 2003). Students are the beneficiaries of liberal arts education; staff are their educators and parents of students are important guiding forces as college selections begin for high school students (Dubble 1995; Galotti & Mark 1994; Litten & Hall 1989; McGinty 1992). From a newly - established, parents continue to play a significant role in their children's lives as they transition in the early years of college from psychosocial dependence to autonomy. Involvement of parents in their children's education is important. It affects their academic performance, motivation, and general wellbeing. Parental involvement in their children's education has drawn a lot of attention in recent years from researchers, and it is now a crucial part of government and school policies pertaining to family education programs (Menheere & Hooge, 2010). This study aims to understand the effects and skills of Liberal Education outcome among students and their parents.

Methodology

A survey was conducted among students and parents of students studying in liberal arts colleges. Two standardized questionnaires prepared for each target group that were validated, was used to collect the data and responses from students and parents of students from 4 liberal arts colleges in Chennai. Final year students studying in Arts and Science courses in four liberal arts college in Chennai and parents of students studying in liberal arts college comprise the sample. The present survey is a qualitative study using random samples. 500 students and 115 parents of students from liberal arts colleges participated in the study by filling in the given questionnaire.

Results and Discussion

The significance of the liberal arts in fostering critical thinking abilities, the capacity for self-expression, and the capacity for learning and conceptualization is a recurring theme in this research. Students nowadays are forced to sell their talents in an extremely competitive, international job market. Their liberal arts education has equipped them with marketable skills that will help them deal with future questions and issues, many of which are unpredictable at this time.

There is less likelihood of high levels of student achievement if educators and colleges do not give students the chance to acquire these desirable skills.

The liberal arts education outcome for students is depicted in figure 1.

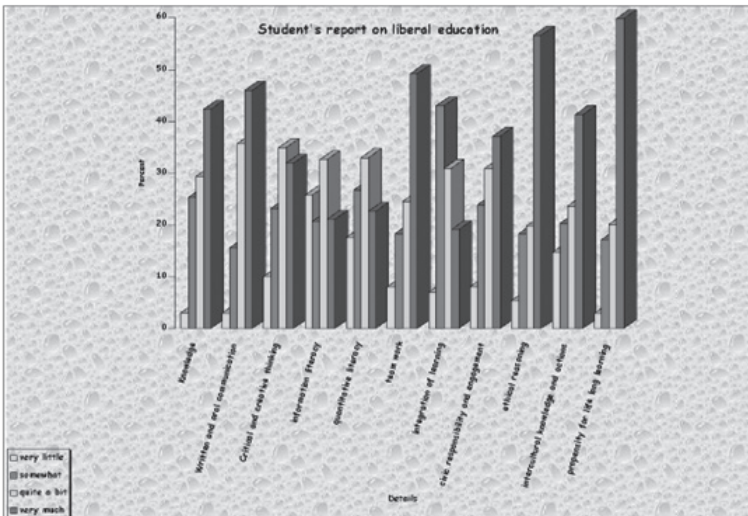


Fig 1 : Student's Report on Liberal Arts Education.

A comprehensive inventory of all the knowledge, skills, and abilities that a liberal arts student has learned is not possible to compile. Clearly, the college experience has significantly improved one's capacity to investigate, write about, and discuss significant subjects.

Certain acquired skills might be valuable to prospective employers. Some examples of the skills that the majority of liberal arts college students have learned both inside and outside the classroom are provided in this section.

Transferable skills are aptitudes that you can use in a variety of work environments and carry over from your time in college to your professional experience. "Indicators of quality" means determinants of educational attributes and their reflection on human beings. The cognitive capability of students, their communication ability and the skills, knowledge and information they acquire are indicators of quality related to educational attainment. In the present survey 42.3 % of students reported that the liberal arts education helps them acquire a broad general schooling.

Employers cite effective oral and written communication as the most important skill more often than any other. Writing and speaking about oneself, one's ideas or research in a clear, compelling and coherent manner are essential components of effective communication. 45% of students indicated that liberal arts education enabled them to write and speak clearly and effectively. Regarding information literacy, that is, use of computers in academic work, only 21 % of students reported that they use computers. Regarding teamwork, 49.2 % of students indicated that a liberal arts education helped them work effectively with others. Resolving issues quickly enables one to advance along learning

curves in response to novel challenges. For instance, having strong problem-solving abilities will enable students to take on bigger and more challenging projects that will provide them with ongoing learning opportunities. 22 % of students reported that liberal arts education helped them very much to analyze quantitative problems. 56 % of students indicated that the liberal arts education helps them in advancing a personal code of values and ethics and a majority of students reported that it helped inculcate individual and social responsibility in them.

General information on the educational qualification and occupation of the parents is shown in Table 1 and 2. Among the parents, 39.29% of fathers and 50.89% of mothers had formal school education. Professionally qualified fathers represented 10.71% as against 1.79% of mothers. Approximately 9% of the target group did not have any formal education, yet they have sent their daughters for collegiate education.

Table : 1 Educational Qualification of Students' Parents

S.No.	Qualification	Father (%)	Mother (%)
1	No formal education	8.04	10.71
2	School	39.29	50.89
3	Undergraduate	27.68	24.11
4	Post graduate	10.71	11.61
5	Professional	10.71	1.79
6	Others	3.57	0.89

Table 2: Occupation of students' parents

S.No.	Occupation	Father (%)	Mother (%)
1	Agriculture	0.89	-
2	Business	27.68	4.46
3	Teacher	3.57	10.71
4	Government	12.50	1.79
5	Bank	4.46	0.89
6	Skilled	5.36	-
7	Professional	9.82	3.57
8	Clerical	6.25	0.89
9	No job	6.25	-
10	Others	23.21	3.57
11	Home maker	-	74.11

Parents are an important funding source. As against the USA, where 76% of first-year students obtain finances to support their studies from their parents (Sax, Astin, Korn, & Mahoney, 1997), in India almost all students are financially supported by their parents. In most cases both the parents are employed, and in some cases, either the father or the mother has a job to support the family. A liberal arts education aims to equip students with the knowledge and abilities needed to build meaningful and successful lives, enabling them to become informed citizens. It has long been understood that a liberal education is essential for success in the classroom, in the workplace, and in community life. The Quantitative Component of the survey measures the outcomes of liberal arts education using distinctive indicators.

Respondents measured the outcomes of liberal arts education using a four-point rating scale- 1=Very little, 2=somewhat, 3=quite a bit and 4=very much.

Table 3: Responses of parents on student outcomes of liberal arts education (LAE)

S.No.	Details	Very little (%)	Somewhat (%)	Quite a bit (%)	Very much (%)
1	LAE produces a pattern of consistently positive student outcomes	3.57	28.57	35.71	32.14
2	LAE incorporates a wide range of exemplary educational practices	1.79	27.68	41.07	29.46
3	LAE provides a challenging and meaningful experience	0.89	13.39	34.82	50.89
4	LAE increases holistic learning (interdisciplinary programs)	0.89	25.00	24.11	50.00
5	LAE supports personality development	0.89	17.86	32.14	49.11
6	LAE helps in acquiring a high level of cultural and civic literacy	0.89	22.32	46.43	30.36

The results of this component of the survey are shown in Table 3. Three of the six outcomes of liberal arts education, namely, Liberal Arts Education provides a challenging and meaningful experience; Liberal Arts Education increases holistic learning (interdisciplinary programs) and Liberal Arts Education supports personality development were rated highest by approximately 50% of the focus group. The next set of outcomes which were rated 'quite a bit' (=3) on a four-point rating scale were Liberal Arts Education produces a pattern of consistently positive student outcomes (35.71%), Liberal Arts Education incorporates a wide range of exemplary educational practices (41.07%), and Liberal Arts Education helps in acquiring a high level of cultural and civic literacy (46.43%).

The current study identified three crucial "factors" or prerequisites that have to be met in order to promote liberal arts education:

- An institutional culture and custom that prioritizes the cultivation of a body of intellectual arts over the acquisition of professional or vocational skills.
- Integrating environmental and curriculum frameworks to give students' intellectual experiences coherence and integrity.
- A culture and tradition within the institution that places a high importance on interactions between students and faculty members both inside and outside the classroom.

Conclusion

Liberal arts education helps student acquire the following marketable skills such as Acquire broad based knowledge, acquire intellectual and practical skills to write, talk, interact, cooperate, solve problems, and put together ideas and concepts and inculcate individual and social responsibility by helping the beneficiaries develop a personal code of value and ethics and understand the people of other racial and ethnic backgrounds and realize their role in the welfare of the community. The parents of students felt that liberal arts education provided their children with challenging and meaningful experiences, holistic learning, exemplary educational practices, improved personality, positive student outcomes and a high level of cultural and civic literacy.

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Impact of National Assessment and Accreditation Council (NAAC) in the Continuous Development of HEI

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Abstract

The quality status of an Educational Institution plays a vital role in the society which includes students and parents in selecting the suitable college. The quality of the Institutions can be decided by considering the parameters like curricular activities, extracurricular activities, teaching and learning methodologies, and research activities. In this paper, a study was undertaken to get data about the grade obtained by various colleges in South India to conclude about the impact of NAAC in Higher Educational Institutions. Their progress towards the betterment of their quality is observed. Finally, the impact of NAAC accreditation among the Institutions are identified and discussed.

Keywords: Accreditation, criteria, NAAC, HEI, Assessment, Grade, Institution

Introduction

India holds one of the world's largest and most diverse education systems. The implementation of privatization, extensive growth, increased autonomy, and the introduction of programs

in new and emerging areas has improved accessibility to Higher Education.(National Assessment and Accreditation Council, 2023) The quality status of an institution is obtained through its performance and achievements in academic activities and the best practices followed in terms of teaching and learning methodologies. The National Assessment and Accreditation Council (NAAC) was established in the year 1994 as an autonomous institution under the University Grants Commission (UGC). The NAAC's vision, as articulated in its mandate, emphasizes making quality assurance an integral component of Higher Education Institutions (HEIs). To build an advocacy for assessment and accreditation NAAC works also with the State Governments and professional bodies (Chaudhari & Sharma, 2014).

To evaluate the performance of Higher Education Institutions NAAC contains institutional accreditation and employs an input-process-output methodology. The guidelines and support provided by NAAC plays a vital role which helps institutions to heighten the quality of their programs and services. This has also led to better accountability and transparency in the governance and management of institutions (Pathak, 2023).

From the year 2002 to 2007 NAAC followed a grading system of nine point scale. And there is a change in the methodology from 2007. The criterion, core-indicators and key aspects were presented as guidelines to create the methodology robust. The grading pattern of A, B, C, with Cumulative Grade Point Average (CGPA) for accredited institutions and D for not accredited has been introduced instead of nine point letter grading (Hegde & Shankar, 2016).

The grade is in the form of CGPA between 0 to 4.0 which is obtained by evaluating qualitative and quantitative metrics with three components (Fig 1) including peer team

report, graphical representation of the quantitative metric, and institutional grade sheet. (Aithal & Aithal, 2021).

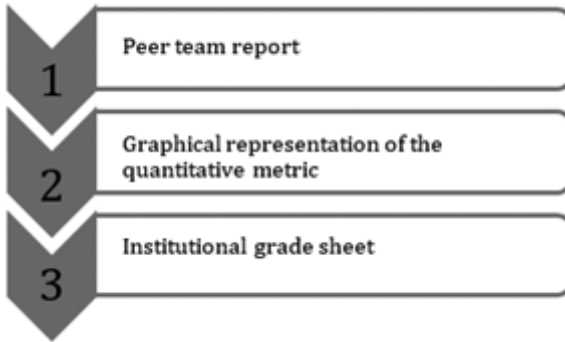


Fig. 1. Evaluation Components

Formerly, institutions were reluctant to undergo the process of accreditation by NAAC and had apprehension. But a few institutions with the positive approach and confidence have volunteered to undertake the process of accreditation. It was stated that nine institutions were assessed in the year 1999. These institutions after experiencing the accreditation process became motivational to other institutions to develop the quality of their education (Hegde & Shankar, 2016).

Literature review

Ganesh Hegde and V. Uma Shankar have analyzed the Impact of NAAC Accreditation on Higher Education Institutions. In this work, they have discussed the methodology of accreditation followed by NAAC till 2016. Further the accredited institutions are considered for the study. This work also discussed the impact of NAAC on HEI from a student perspective.

P. S. Aithal and Shubhrajyotsna Aithal have conducted a Comparative Study on Research Performance of Indian Universities

with NAAC A++ grade Accreditation. In this study they have considered the criterion wise scoring for 9 universities with A++ grade. The study highlighted the strengths and weaknesses of the universities where the lowest score is highlighted for Criterion 3 - Research. Thus few suggestions to improve the quality of research have been presented. (Aithal & Aithal 2021).

Pooja Pathak has prepared a paper on the Role of NAAC in Improving Quality Of Higher Education In India. The work has discussed the Importance of Quality Assessment and Accreditation and also highlighted the impact of NAAC accreditation.

Ravikumar K. et.al have considered the Impact of NAAC Accreditation on Quality Improvement of Higher Education Institutions in India: A Case Study in the State of Karnataka had included the categories of institutions like universities, autonomous and affiliated as per NAAC regulations. In order to ascertain the impact of quality education a questionnaire was prepared with the five-point scale based on 7 criteria and sent to 49 colleges in Karnataka. The responses obtained were analyzed and 90.40% found to be positive responses.

Naveen C L and B U Kannappannavar, the Librarians have analyzed the Impact of NAAC Assessment on the development of college libraries: A Study. This study has identified 64.29% of colleges with NAAC accreditation and 35.71% colleges with no accreditation. The study also reveals that the library facility after the NAAC accreditation has been increased and also the number of library facilities before and after accreditation has been increased by 14.84% in the library (Naveen, 2020).

The literature study revealed that the NAAC criterions are helpful for the institutions to identify their strengths and weaknesses in various areas such as Research, infrastructure

and teaching learning. Thus this study analyzes the role of NAAC in Higher education by considering the grades obtained by few Universities and Colleges in South India. The grades of the Universities under different cycles have been considered for analysis and the results are discussed.

Materials and Methods

Role of NAAC in Higher Education

NAAC has played an important role in improving the quality of HEI in India. The accreditation process has helped and guide the institutions to realize their strengths and weaknesses and take necessary corrective measures(Pathak, 2023). The following figure (Fig 2) shows the role played by NAAC in few areas in the improvement of the Institution's quality, yet there is a space for new parameters.



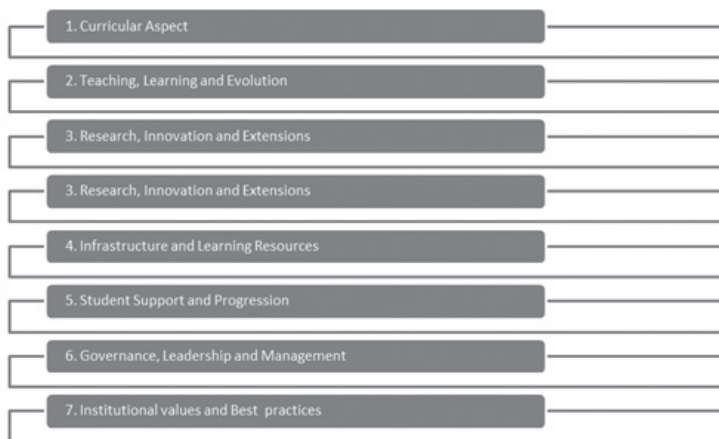
Fig 2 The role of NAAC in HEI

Analysis about NAAC evaluation

- The following are considered for grading the institution
- 07 Criteria(Fig 3),
- 34 Key indicators,

- 36 Qualitative metrics (QIM) with 30% weightage,
- 79 Quantitative metrics with 70% weightage

Which leads to 115 total metrics that are considered for universities, as per NAAC new assessment and accreditation model adopted from July 2017 and implemented from March 2018.



Grading system

The grade will be given based on the Institutional NAAC assessment Grade Sheet and the total institutional Cumulative Grade Point Average (CGPA) considering self-study report evaluation and peer inspection team report. This process contains calculation of GPA for each criterion individually and then the calculation of cumulative grade will be done. Fig 4 shows the graphical representation of Table 1.

Table 1 Range of Values and Grades

Range		Grade
From	To	
3.51	4	A++
3.26	3.5	A+
3.01	3.25	A
2.76	3	B++
2.51	2.75	B+
2.01	2.5	B
1.51	2	C
<=	1.5	D

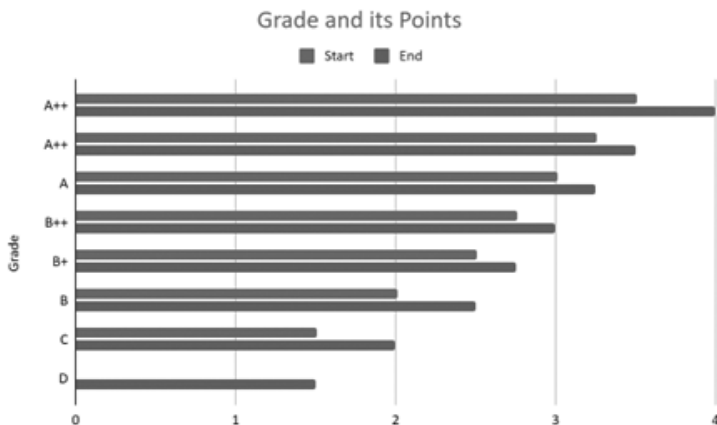


Fig 4 Range for Grades

Case study on NAAC grades of Universities and colleges in south India

Population and sampling of the study

In this work, the NAAC accredited colleges and Universities of South India were considered as the population of the study.

Totally, 7 NAAC accredited colleges and 5 NAAC accredited Universities were selected by using purposive random sampling techniques. The following Table 2 and Table 3 , Fig 5 and Fig 6 shows grades obtained by the universities in their last three cycles.

Table 2 Universities and their Grades in different cycles

S.No. (University)	Cycle i-2	Cycle i-1	Cycle i
1	A	A	A
2	A	A	A+
3	B++	A	A+
4		A	A++
5	B++	A	A

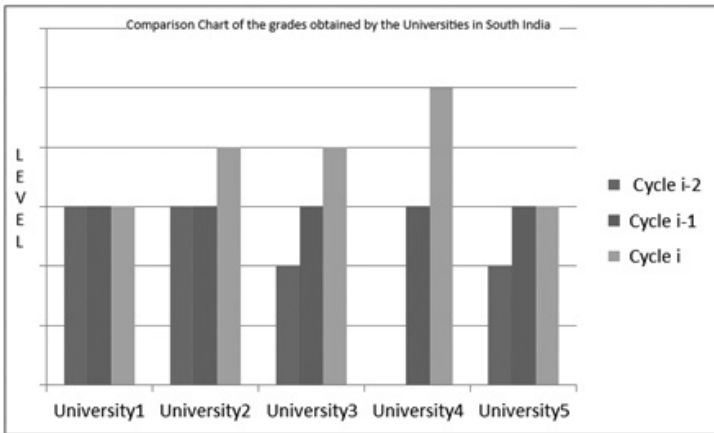
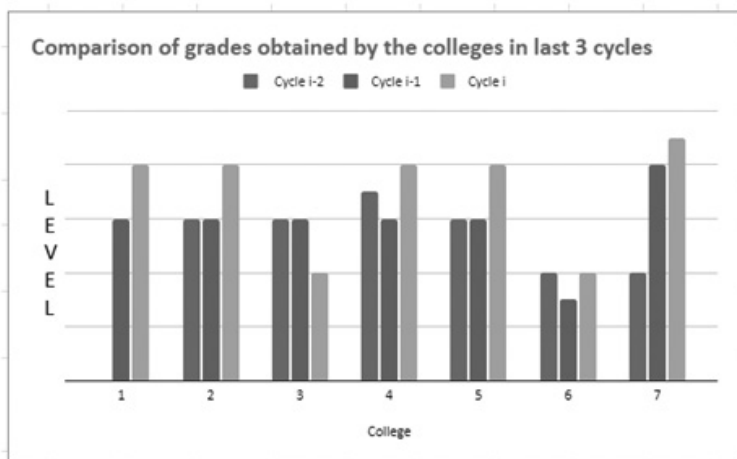


Fig 5: Comparison of grades attained by the Universities in their various levels

The following table 3 and fig 6 shows the grade obtained by the colleges in their last three cycles.

Table 3 Colleges with their Grades in different cycles

S.No. (College)	Cycle i-2	Cycle i-1	Cycle i
1		A	A+
2	A	A	A+
3	A	A	B++
4	A+	A	A++
5	A	A	A++
6	B++	B	B++
7	B++	A	A++

**Fig 6 Comparison of grades attained by the Colleges in their various levels**

Observations and Inferences

Impact on the Quality of education

The above figures (Fig 5 and Fig 6) shows that there is an improvement in the quality of the activities performed by the Universities in the successive cycles of NAAC accreditation. The HEI are improving their performance from cycle to cycle. This proves that the NAAC grading process leads to the enhancement in the quality of HEI.

Healthy competition among the HEI

NAAC grading system results in the drastic development in the count of the Institutions that acquired A grade in the last cycle (Karthick). Around 205 Institutions are performing better in its quality with its A grade. The following Table 4 is a sample for the role played by the NAAC

Table 4 Sample list of colleges graded with A

Tamil Nadu NAAC Accredited Institutions List (Above 3.0 out of 4.0)

Universities			
Sr. No.	Name of the University	Institutional CGPA	Grade
1	Sri Ramachandra University (Deemed to be University u/s 3 of the UGC Act 1956)	3.62	A
2	Shanmuga Arts	3.54	A
3	SRM Institute of Science & Technology Kattankulathur.	3.5	A
4	Anna University	3.46	A
5	Vellore Institute of Technology (Deemed to be University u/s 3 of the UGC Act 1956).	3.42	A
6	Amrita Vishwa Vidyapeetham (Deemed to be University u/s 3 of the UGC Act 1956)	3.4	A
7	University of Madras.	3.32	A

Outcome based education is more concentrated

Research activities enhanced in Arts and Science Colleges. Criteria 3 is for research related activities. Many institutions stay behind in research activities. Since the NAAC is giving significant weightage to research activities, the institutions are giving more importance to research activities which leads to the active involvement of students in research from PG level. This improves the contribution of our country towards research.

Enhancements in Infrastructure

Infrastructure of an institution plays a significant role in improving the quality of education. It was found that the library facilities have been very much improved after and before accreditation (Naveen, 2020). Since criterion 4 concentrates on infrastructure, the importance to the necessary infrastructures such as lab and library must have been given more importance which leads to sufficient facilities to the students on campus.

Outcome based education is more concentrated

NAAC also paves a way to outcome based education which is helpful for the students to analyze their knowledge level. Criterion 2.6 insists on learning outcomes. After the introduction of accreditation, the qualitative measure of course outcome in terms of CO attainments have been introduced in many institutions. Many colleges started implementing outcome based education which brought a revolution in evaluating the students' knowledge in terms of understanding, application, analysis and assessment.

The above study revealed that the institutions are identifying their weakness and strength that helps them to improve their quality and give better education for the students. On the other hand the accreditation is helpful for the students to identify and select the institutions for their higher education. Since the criteria and the SRS of the colleges reveal the placement percentage and research outcomes, it is helpful for the students to select the college as they are desperately looking for the placement and research opportunities.

Conclusion

NAAC Accreditation results in numerous benefits that significantly contribute to the overall development of the quality of an institution (Beyond the Certificate). The most significant

role of NAAC accreditation is that it recognizes an institution's quality. Importantly, the accreditation status signals to potential students, parents, and employers that the institution meets or exceeds the standards set by an independent accrediting body. This credit can automatically enhance the institution's reputation and standing, making it a more attractive choice for students and faculty members.

Quality education is the next significant result achieved by the NAAC. The evaluation method of NAAC guides institutions to move towards attaining excellence in all aspects of their functioning, including teaching, research, community engagement, and governance. It is also possible to have self evaluation which again leads to the betterment of the institution. The NAAC evaluation process involves a thorough self-study by the institution which will be followed by an external review. There is a continuous evaluation pattern which encourages the institution to travel in a correct track. Hence there is continuous monitoring which leads to continuous improvement. The most important instrument for the Indian higher education system's development is continuous monitoring (Devi, S). And that can be attained through the NAAC accreditation process.

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Higher Education Curriculum and its Effectiveness in the Work Environment

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Abstract

Higher Education marks an important step and is a crucial aspect of an individual's future employment and their excellence in the same. Higher Education is expected to equip the students with skills necessary for the workplace, both soft skills and field expertise. However, concerns have been raised by different groups of the population about the existing curriculum's inadequacy to meet these requirements. Students and working professionals feel alike that this issue could be sorted by increasing the practical components and field work in their respective work fields. Furthermore, entire institutions have moderated their education methods to meet work skill requirements which can act as a forefront for the national education system to march towards. An incorporation of such methods would be highly beneficial for the holistic development of education.

Keywords: *Higher Education, Curriculum, Humanities*

Education originates from the Latin word "Educare". This word means to "bring up" or "bring forth". As its etymology suggests, Education aims to empower the individual, the community, the society, the nation and finally the world. It aims to impart knowledge, develop skills, teach concepts and build

character. In other words, it aims to equip the students for the real world.

Today, the field of education has grown to great heights and is one of the finest developments of mankind. The methods employed in the field are extremely diverse, differing between countries, within countries, and also exclusive to every institution. Experts work everyday to develop the best methods and pedagogy to improve Education and many researchers have even identified some pedagogies to be better than others. Nevertheless, every curriculum and pedagogy has the scope for further improvement. This paper aims to study the current higher education curriculum and the effectiveness of its application in the work field in the country. This is analyzed by looking at the practical courses in the curriculum, at instances the lack thereof, and how it can better equip the individual for the work field.

The National Curriculum Framework was first framed in 1975. This National Framework was subdivided into the NCFECCE, NCFSE, NCFTE and the NCF AE. (Vikaspedia). The NCF AE, which abbreviates the National Curriculum Framework for Adult Education, focuses on Higher education models, i.e., universities and colleges in the country. Millions of students are offered courses based on this curriculum and become graduates. Every year 7.95% of these Indian Graduates go unemployed. Among those who are hired 53% get placed in non-technical Jobs while 44% are hired for technical jobs. An India Today article from 2018, discusses how the curriculum of higher education is incapable of addressing the urgent need of technological training in alliance to the technical boom in the country. Moreover, the lack of coherence between the education and the requirements of the workfield is an existing concern amidst the majority of working individuals.

This concern has caused a dent in the transition phase from students to working professionals in the current years. It is a widely discussed issue and even a reality pun amidst the working professionals. Many writers, experts, journalists and leaders have raised similar concerns pertaining to the translation of theory in work environments.

In order to understand the nuances of the problem and to identify specific causes, case studies were obtained from different working professionals and interning students. These case studies were from selective professions which were kept varied to get a comprehensive understanding as much as possible. The working professionals and interning students were from the fields of Medicine, Engineering, Arts and IT.

Case Study 1

The subject was an MBBS Student who was interning as part of his curriculum. He reported that a very good percentage of the practical classes help them in their job. He felt that more weightage must be given to practical papers, while also stating that in the current curriculum, there is a balance between theory and practical papers. It must be noted that unlike other disciplines MBBS offers practical classes from the 3rd year. During these classes the students work with doctors who have great experience and they learn through practice. This prepares them for their job. Furthermore, the subject also felt that the more practical knowledge they get the more it will help them to become a better doctor.

Case Study 2

The subjects were two associate professors in a college. The job is seen as a trail and error method sys one of them, where she has to figure out how to work with it. All the subjects are seen

as different entities and the connection between these subjects is not taught. She feels that only by gaining practical knowledge one can figure out how to work. She reported that the practical knowledge that they received was minimal and didn't really help them in their job. She reported that the course only provided the raw data and that she had to understand how to apply it in work situations. The theoretical concepts only act as a base for her. The second professor, however, felt that the curriculum aligned closely with her work needs, though the weightage was more towards theory, she reported that it wasn't much of an inconvenience. When asked about improvements, she felt that as a teacher, incorporating teaching based exercise would have been fruitful for her career.

Case Study 3

The subjects were an Engineering intern and a researcher in the same field. The intern felt that they were able to get an overall idea of the field and that there was a balance between theory and practical papers. However, he did report that for the job he had to revert to the basics and did face challenges that the college did not prepare them for. Overall, he felt that certain changes can be made to improve the curriculum which will aid them in the workfield. On the other hand, the researcher felt that a good percentage of the practical papers align with their job. However, he highlights certain limitations of the practical papers and other challenges because of the insufficiency of the curriculum. He stated that the students have to figure out certain applications by themselves, in the field of research and also suggested an improvement in the curriculum.

Case Study 4

The subject was an individual who is employed in the IT industry. She has faced challenges in the current job, in terms of

the curriculum which she feels relate about 60% with the work she does. Some of the issues she states were, the lack of an exposure to the realistic view of the industry wherein one has to approach a problem in a certain way, and peer working experiences. Though the theory was productive in giving a conceptual understanding of the problem, she reported the issues to be having an impact on the initial stages of the career.

From these reports, one can derive certain conclusions. The information provided is rudimentary and fails to adequately equip students to confront real-world challenges. Apart from being rudimentary, a wide range of disciplines are introduced which prevents obtaining an in depth exposure to any of them. Even the practical papers fall short in meeting the students' needs comprehensively. Consensus among them asserts that the curriculum requires enhancement to better prepare students for their professional environments. Notably, practical papers in college are often more focused on grades than practical skills. It is also worth noting that students perceive practical papers as challenging rather than beneficial. Nevertheless, the internal distinctions between fields must be acknowledged. Respondents in the field of Medicine report a more favorable work experience compared to their counterparts in other disciplines.

The same concern has been echoed in other countries. Mongi Besbes, the vice-chancellor at the University of Carthage in Tunisia, asserts, "The growing number of educated unemployed people suggests weak links between education, the training system, and the labor market. Entrepreneurs in Algeria, Egypt, Tunisia, Jordan, Lebanon, and Morocco consistently identify the lack of appropriate skills in the workforce as a significant obstacle to business development, hindering job creation." (THE and

Coursera). Aawatif Hayar, the president of Hassan II University of Casablanca in Morocco, also discusses the mismatch between education curricula and the skills required in the workforce.

Upon comprehending the intricacies of the issue, a prominent solution emerges: assigning greater weightage to practical papers. However, the focus should pivot towards imparting knowledge to students rather than merely awarding marks. Real-life experiences in a work environment are imperative to equip them with the practical understanding they need. Furthermore, consistent revision and updating of the curriculum are necessary to align with the increasing demands across various industries, especially as India transitions from a developing to a developed nation.

The Masters' Union School of Business in Gurgaon, Haryana, serves as a notable example of how work skills can be integrated into the curriculum. This institution employs a project-based approach and real-world experiences to teach subjects. For instance, students learn Finance by managing their own five-crore fund and making investments. This institution stands as a viable and productive initiative to provide hands-on experience to students, offering a practical glimpse into their future careers rather than relying solely on theoretical explanations.

While recognizing the uniqueness of each field of study and course, efforts to adapt the concepts from institutions like Masters' Union and the approach seen in Medicine courses in India to other courses and curricula could contribute significantly to improving the current educational landscape.

One feasible method of translation into the humanities is to include a specialization component in the syllabus. The students must be exposed to a workshop in the beginning of the course. This workshop must include experts from fields that are the future

scope of the particular humanities course. After the workshop, the students can choose the specialization of interest and they will be taught, trained and given real-life problems to resolve and will emerge as better equipped candidates on the way to being successful workplace professionals.

In conclusion, the aforementioned issue underscores an urgent national need that requires solutions aimed at bridging the gap between education, the training system, and the labour market. Such initiatives would lead to the development of better-skilled employees, facilitate a seamless transition for individuals from educational to work environments, and contribute significantly to national economic growth and development. Importantly, these efforts would constitute a substantial contribution to the holistic development of education.

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Diversity In Leadership And Management

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Abstract

Leadership management is a dynamic and essential concept in the organizational landscape, encompassing the integration of effective leadership and proficient management practices. This abstract explores the fundamental components of leadership management, emphasizing the synergy between inspiring leadership qualities and strategic management skills. The discussion highlights the distinctions between leadership and management, emphasizing the importance of balancing both functions for organizational success. Key leadership traits, including vision, communication, empathy, and decision-making, are identified, along with essential management functions such as planning, organizing, directing, and controlling. The integration of these elements is crucial for fostering a positive work culture, enhancing team performance, and efficiently achieving organizational objectives. In this paper, we conclude the challenges in the contemporary business environment and underscore the necessity for adaptability and innovation in leadership management.

Keywords: *Communication, Decision-Making, Team Performance, Organizational Success, and Innovation*

Introduction

Leadership and management are two closely related, yet distinct, concepts that play crucial roles in the success of organizations. Leadership management involves the integration of effective leadership and sound management practices to achieve organizational goals and objectives. In the contemporary global landscape, the recognition of diverse talents, backgrounds, and perspectives is not just a matter of social justice but a strategic imperative for effective leadership. The recognition and integration of diversity within leadership and management have emerged as critical factors for organizational success. Diversity in leadership and management refer to the intentional inclusion of individuals from various backgrounds, including but not limited to race, gender, ethnicity, age, sexual orientation, and cognitive styles. It goes beyond mere representation, emphasizing the value of harnessing a spectrum of experiences and perspectives to drive organizational effectiveness.

Definition of Leadership

Leadership is the ability to influence and guide individuals or groups towards the achievement of common goals. It goes beyond authority and involves inspiring others, fostering a positive work environment, and making strategic decisions.

Definition of Management

Management, on the other hand, is the process of planning, organizing, directing, and controlling resources (human, financial, and material) to achieve organizational objectives efficiently and effectively.

Leadership vs Management

While leadership and management share some common functions, they differ in their focus and approach. Leadership is more about inspiring and motivating people, setting a vision, and creating a sense of direction. Management, on the other hand, involves planning, organizing, and controlling resources to ensure tasks are completed efficiently.

The Integration of Leadership and Management

Effective leadership management requires a balance between these two functions. A successful leader-manager must possess both leadership qualities to inspire and guide the team and management skills to organize and execute plans.

Key Leadership Traits

- **Vision:** Leaders have a clear vision and communicate it effectively to inspire others.
- **Communication:** Effective communication fosters understanding and collaboration.
- **Empathy:** understanding and considering the needs and perspectives of team members.
- **Decision-making:** Leaders make informed decisions and take responsibility for outcomes.

Key Management Functions

- **Planning:** setting goals, defining strategies, and developing action plans.
- **Organizing:** structuring resources and tasks to achieve objectives.
- **Directing:** guiding and leading the team to execute plans.

- Controlling: monitoring progress, identifying deviations, and implementing corrective measures.

Leadership Difficulties

Leadership is a complex and challenging role that comes with various difficulties. Successful leaders must navigate these challenges to inspire and guide their teams effectively. Here are some common difficulties in leadership:

Uncertainty and Change:

Leaders often operate in an environment characterized by constant change and uncertainty. Adapting to unforeseen circumstances and guiding the team through transitions can be challenging.

Decision-Making Pressure:

Leaders are frequently required to make critical decisions under pressure. The consequences of these decisions can have a significant impact on the team and the organization, adding a high level of responsibility to the leadership role.

Balancing Priorities:

Leaders must juggle multiple priorities, including strategic goals, team needs, and individual aspirations. Balancing short-term objectives with long-term vision requires careful consideration and effective time management.

Managing Conflicts:

Conflicts inevitably arise in any team or organization. Leaders must navigate interpersonal conflicts, differences in opinions, and

diverse personalities while maintaining a positive and productive work environment.

Employee Engagement and Motivation:

Keeping the team motivated and engaged is an ongoing challenge. Leaders must understand the individual needs and aspirations of team members, providing support, recognition, and opportunities for growth.

Communication Challenges:

Effective communication is crucial for leadership success, but it can be challenging. Misunderstandings, cultural differences, and information overload can hinder communication, making it difficult for leaders to convey their messages clearly.

Building and Sustaining Trust

Trust is the foundation of effective leadership. Building and sustaining trust among team members requires consistency, transparency, and integrity. Rebuilding trust after a breach can be especially challenging.

Managing work-life balance:

Leaders often face the difficulty of balancing their professional responsibilities with their personal lives. The demands of leadership can lead to stress and burnout if not managed effectively.

Resistance to Change:

Introducing and implementing changes within an organization may face resistance from team members. Leaders need to understand and address this resistance while effectively communicating the reasons for and benefits of the proposed changes.

Developing leadership skills:

Becoming an effective leader is an ongoing process. Leaders must continuously develop and refine their leadership skills, staying abreast of industry trends, management techniques, and interpersonal dynamics.

Succession Planning:

Identifying and preparing future leaders within the organization is a challenge. Succession planning requires a strategic approach to ensure a smooth transition in leadership roles. Leadership is a journey filled with complexities, and effective leaders are those who learn from these difficulties, continuously adapt, and cultivate resilience in the face of challenges.

The Importance of Leadership Management:

Organizations benefit from effective leadership management as it promotes a positive work culture, enhances team performance, and ensures that resources are utilized efficiently to achieve organizational objectives.

Challenges and Adaptability:

The dynamic nature of today's business environment requires leaders and managers to be adaptable and responsive to change. Challenges may arise from technological advancements, market shifts, or other external factors, making flexibility and innovation crucial.

Conclusion

Leadership management is a holistic approach that combines the strengths of both leadership and management to navigate the complexities of modern organizations. Successful leaders who can effectively integrate these two aspects contribute significantly to the overall success and sustainability of their organizations. Diversity in leadership and management is not merely a social imperative; it is a strategic advantage that can drive innovation, improve decision-making, and create a workplace culture that attracts and retains top talent. Organizations that prioritize diversity in these key roles are better positioned to adapt to change, navigate complex challenges, and thrive in the diverse and evolving landscape of the modern business world.

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शिक्षा संपूरण रूप से भवष्य के लिए NAAC के परपिरेक्षय में । कौशल वकिस एवं रोजगार

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शिक्षा का अभपिराय आत्म-ज्ञान तथा आत्म-प्रकाश के साधन के रूप में लिया जाता है। आधुनकि समय में शिक्षा को गतशील माना गया है तथा शिक्षा को आजीवन चलनेवाली प्रक्रिया बताया गया है । ज्ञान के लिए, मानव के शरीर एवं मानसकि व्यवहार में परिवर्तन हेतु प्रक्रिया के लिए और पाठयचर्या के वषिय के लिए शिक्षा शब्द का प्रयोग होता है। शिक्षा कोई वस्तु न होकर वकिस संबंधी प्रक्रिया है । शिक्षा शब्द संस्कृत भाषा के "शक्षि" धातु से बना है । "शक्षि" धातु में "अ" प्रत्यय लगाने से शिक्षा शब्द की उत्पत्त हुई है । शिक्षा शब्द से तात्पर्य सीखना और सखिना है । शिक्षा एक प्रक्रिया है इससे सीखने और सखिने की प्रक्रिया चलती रहती है । यह प्रक्रिया मानव जीवन के कसिी वशिष स्तर तक ही सीमति नहीं रहती वरन् बालक के जन्म के साथ ही शिक्षा प्रक्रिया आरंभ होकर आजीवन चलती रहती है । शिक्षा के संबंध में "वविकानन्द" जी कहते हैं - "हमें उस शिक्षा की आवश्यकता है जिसके द्वारा चरत्रि का नरिमाण होता है, मसतषिक की शक्ति बढ़ती है, बुद्धिका वकिस होता है और मनुष्य अपने पैरों पर खड़ा हो सकता है"।

शिक्षा के संबंध में कहा जाता है कविसितृत रूप में स्वयं को सभ्य और उन्नत बनाना ही शिक्षा है, शिक्षा जीवन पर्यन्त चलती रहती है। "ऋग्वेद" में कहा गया है - "वदिया ददात विनियं,

वनियाद् यात पात्रताम् । पात्रत्वाद् धनं आप्नोति, धनाद् धर्मः ततः सुखम्" ॥² अर्थात् सम्पूर्ण मानवीय आनन्दों का मूल वदिया है । इसी से वनिय, वनिय से ही योग्यता और योग्यता से धन प्राप्ति तथा धन प्राप्ति से धर्म सधता है। इसमें सदैव सुख की प्राप्ति होती है।

शिक्षा का चरम लक्ष्य ही यही होता है कविह सोचने पर मजबूर कर दे कि देश और समाज के लिए बेहतर क्या होगा ? कसी भी देश की अच्छाई का पैमाना उस देश के नागरिक उनके आदर्श जीवन मूल्य और चरित्र होता है ।

मानव जीवन का प्रमुख उद्देश्य स्वयं को समृद्ध एवं सुखी बनाते हुए समाज, राष्ट्र एवं संस्कृति को विकसित एवं अक्षुण्य बनाने से है। शिक्षा व्यक्तियों का निर्माण करती है। चरित्र को उत्कृष्ट बनाती है। व्यक्तियों को संस्कारित करती है, जो आदमी को आदमी बनाती है, वही सही अर्थ में शिक्षा है। व्यक्तियों के जीवन में शिक्षा एक ऐसा परिवर्तन लाती है जिससे वह नरितर उत्कृष्टता की ओर अग्रसर हो सकता है । शिक्षा समाज और व्यक्तियों के लिए भवषिय की दशा में महत्वपूर्ण भूमिका निभाती है। एक संपूर्ण शिक्षा से वदियार्थी नौकरी, समाज और व्यक्तित्व विकास में सफलता प्राप्त करने के लिए सक्षम हो सकता है।

शिक्षा और कौशल दोनों ही व्यक्तियों के पूरणता की दशा में महत्वपूर्ण है । शिक्षा ज्ञान का आधार प्रदान करती है । जबकि कौशल उस ज्ञान को अमल में लाने में मदद करते हैं। जिससे व्यक्तियों में सफलता और सामाजिक योगदान में सक्षम होता है। शिक्षा समाज और व्यक्तियों के लिए भवषिय की दशा में महत्वपूर्ण भूमिका निभाती है। एक संपूर्ण शिक्षा से वदियार्थी नौकरी, समाज और व्यक्तित्व विकास में सफलता प्राप्त करने के लिए सक्षम हो सकता है ।

राष्ट्रीय मूल्यांकन और प्रत्यायन परिषद (NAA C) भारत में एक सरकारी संगठन है जो उच्च शिक्षा संस्थानों का

मूल्यांकन और मान्यता देता है। यह विश्वविद्यालय अनुदान आयोग (UGC) द्वारा वित्त पोषित एक स्वायत्त निकाय है।³ नई शिक्षा प्रणाली के अंतर्गत भारतीय ज्ञान परंपरा (IKS) को शामिल किया गया है। भारतीय ज्ञान परंपरा विशेष रूप से धार्मिक, दार्शनिक और वैज्ञानिक दृष्टिकोण से समृद्ध है। यह वेद, उपनिषद, पुराण ग्रंथ और कई धार्मिक ग्रंथों के माध्यम से प्रस्तुत होती है। भारतीय ज्ञान का एक महत्वपूर्ण हिस्सा योग, आयुर्वेद और वास्तुशास्त्र जैसे क्षेत्रों में भी है।⁴

भारतीय ज्ञान प्रणाली का उद्देश्य समसामयिक सामाजिक मुद्दों को हल करने के लिए आगे के शोध का समर्थन और सुविधा प्रदान करना है। आईकेएस वैदिक साहित्य, वेदों और उपनिषदों पर आधारित है। मौजूदा आईकेएस पाठ्यक्रमों को डिजिटल शिक्षण प्लेटफॉर्म के साथ समन्वयित किया जा सकता है। सूचित और आत्म विश्वासी नागरिक वर्ग विकसित करने के लिए प्रामाणिक आईकेएस ज्ञान को प्रसारित और लोकप्रिय बनाने के लिए विभिन्न तंत्रों के माध्यम से जनता के लिए एक दृष्टिकोण होगा।

रोजगार कौशल मुख्यतः नौ प्रकार का माना जाता है- संचार, महत्वपूर्ण सोच, तकनीकी, नेतृत्व, समय प्रबंधन, रचनात्मकता, प्रबंधन कौशल, योजना और भावात्मक बुद्धि। कौशल विकास और रोजगार के लिए समर्थन कार्यक्रमों का सही निर्माण महत्वपूर्ण है, जिससे लोगों को नए कौशल सीखने और रोजगार में समर्थ बनने का मौका मिल सकता है। कौशल विकास शिक्षा उन कौशलों को बढ़ावा देने का एक प्रकार है, जो व्यक्तियों को उच्चतम क्षमताओं और नौकरी क्षमता के साथ सुसज्जित करने का लक्ष्य रखती है। इसमें प्रैक्टिस, हैंडस ऑन अनुभव शामिल होता है जिससे छात्र कौशलों को सीख सकते हैं।

कौशल विकास शिक्षा में विद्यार्थियों को व्यावसायिक कौशल और पेशेवर क्षमताओं का विकास करने का उद्देश्य है।

इसके माध्यम से छात्रों को विभिन्न उद्यमिता तकनीकी और सामाजिक क्षेत्रों में सक्षम बनाने का प्रयास किया जाता है।

शिक्षा आपके भविष्य को सार्थक बनाने में मदद कर सकती है, जो आपको नए अवसरों और सामाजिक संबंधों की दृष्टि में बढ़ने में मदद कर सकती है। कौशल विकास आपको अधिक सक्षम और प्रभावी बना सकता है, जिससे आप अपने कार्य में सुधार कर सकते हैं और अधिक अवसरों का उपयोग भी कर सकते हैं। यह आपको सामाजिक व्यावसायिक और व्यक्तिगत स्तर पर स्थिरता और समृद्धि में मदद कर सकता है।

कौशल आधारित कार्यक्रमों के माध्यम से युवाओं के लिए रोजगार के अवसर पैदा किए जायेंगे। आईकेएस भारतीयों और दुनिया भर में भारतीय वसिस्त को प्रदर्शित करने के लिए प्रौद्योगिकी समाधान लेकर वसिस्त प्रौद्योगिकी को बढ़ावा देगा। इसका उद्देश्य विश्व पर्यटन के दस प्रतिशत हिस्से पर कब्जा करना और हमारे युवाओं को बड़े पैमाने पर रोजगार के अवसर प्रदान करना है।

रोजगार योग्यता कौशल अत्यधिक वांछनीय, हस्तांतरणीय कौशल के एक सेट के लिए एक व्यापक शब्द है जो आपको एक बहुत ही आकर्षक उम्मीदवार या कर्मचारी में बदल देता है। उन्हें कौशल के एक सेट के रूप में परिभाषित किया जा सकता है जो नियोक्ता एक संभावित कर्मचारी से चाहते हैं।

नई राष्ट्रीय शिक्षा नीति 2023 देश के लिए एक बिल्कुल नई समग्र शिक्षा प्रणाली की कल्पना करती है, जो छात्रों के समग्र व्यक्तित्व को आकार देने के लिए आधुनिक प्रशिक्षण विधियों को प्रभावी ढंग से अपनाने प्रौद्योगिकी के अनुप्रयोग और व्यावहारिक और समसामयिक कौशल प्रदान करने पर आधारित है। एनईपी 2023 का उद्देश्य छात्रों को उनकी रचनात्मक विश्लेषणात्मक समस्या समाधान और महत्वपूर्ण सोच क्षमताओं को परिभाषित करने और रचिर्र करने में मदद

करना है। साथ ही सक्रिय रूप से डिजिटल साक्षरता को बढ़ावा देना है। नई शिक्षा नीति 2019 से 18 वर्ष की आयु के सभी बच्चों को समान और गुणवत्तापूर्ण शिक्षा प्रदान करके भारतीय शिक्षा प्रणाली को बदलने पर केन्द्रित है। जिन प्रमुख कौशलों पर ध्यान केन्द्रित करना चाहिए उनमें रचनात्मकता, आलोचनात्मक सोच, संचार, सहयोग और समस्या समाधान शामिल हैं। स्कूल के शैक्षणिक योजनाओं की 10+2 संरचना को 3 से 8, 8 से 11 वर्ष की आयु से संबंधित 5+3+3+4 पाठ्यचर्या संरचना द्वारा प्रतिस्थापित किया जाएगा, और 11 से 14 और 14 से 18 वर्ष व्यक्तिगत रूप से।⁵

ज्ञान कौशल के बिना अधूरा है। सरकारी परीक्षाएँ जैसे आर.बी.आई, यु.पी.एस.सी., एल.आई.सी, आई.बी.पी.एस, एन.डी.ए. आदि एवं सरकारी नौकरियाँ भी इन्हीं कौशलों को प्रमुखता देते हैं। एनईपी में बच्चे अपने पसंदीदा विषयों को चुन सकते हैं। वे अपनी क्षमताओं को पूरी तरह से इस्तेमाल कर अपनी कौशल को दर्शा सकते हैं। पुरानी शिक्षा नीति ज्ञान का आधार है। लेकिन नई शिक्षा नीति पर ज्ञान के साथ-साथ विद्यार्थियों की रूचि को भी आधार बनाकर बनाया गया है। एनईपी शिक्षा समानता, गुणवत्ता, सामर्थ्य और जवाबदेही के पाँच मार्गदर्शक स्तंभों पर आधारित है। यह हमारे युवाओं को वर्तमान और भविष्य की विविध राष्ट्रीय और वैश्विक चुनौतियों का सामना करने के लिए तैयार करेगा।

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Multi-Disciplinary integration into the Higher Education to meet challenges in future careers

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Abstract

The comprehensive nature of the multidisciplinary approach to education is evident in its inclusion of various disciplines such as sciences, humanities, arts, social sciences, management sciences, etc. The International Bureau of Education, a prominent UNESCO institution, defines this approach as integration of diverse perspectives from different disciplines. The National Education Policy of 2020 emphasizes the adoption of multidisciplinary approaches by all higher education institutions in the country. The policy envisions a holistic and multidisciplinary education system that fosters the overall development of individuals in intellectual, social, cultural, physical, emotional, and moral aspects, all integrated seamlessly.

NEP 2020 also sets the goal of establishing large multidisciplinary higher education institutions in every district by the year 2030. The aim is to cultivate individuals with well-rounded capacities, including critical 21st-century skills across various domains such as arts, science, humanities,

languages, social sciences, and professional, technical, and vocational fields. Holistic education, as outlined by the UGC, encompasses social engagement, communication, discussion, debate, and rigorous specialization. Ultimately, this approach is envisioned to become the standard for all undergraduate programs, ensuring the development of individuals with a broad skill set and a comprehensive understanding of diverse subjects.

In the ever-evolving job's market, one thing is clear that relying on a single skill set is not enough to secure a prosperous future in the career. The rapid advancements in the technologies changed the employment landscape, so that employees with adaptability can only survive in the competitive environment.

This study aims to assist faculty members and students of Higher Education in gaining a profound comprehension of their conceptualizations and practices to meet the challenges that will occur in the future career. Additionally, it seeks to aid engineering educators in developing courses that incorporate multi-disciplinary integration.

Keywords: *Multi-Disciplinary, National Education Policy, Higher Education*

Introduction

Higher Education plays a significant role in a graduate's personal life. It is an important process to train the student's ability so that they can apply the knowledge and skills to improve their practical ability by enhancing their ability to analyse and solve problems. The rapid development of science and technology, modern society becomes the cross integration of multi-disciplinary. The community of multi-disciplinary needs higher and new requirements of applied talents (Zhiguo Zhao et.al, 2011).

National Education Policy 2020 is an important policy that provides the vision of the Indian government for modernizing education in India. Multidisciplinary education is of utmost priority in achieving modernization. Multidisciplinary in higher education revolutionises knowledge through the interactions of disciplinary knowledge and is helpful to solve problems in society. Since the 1970s multidisciplinary centres and departments were established. Curricular changes allowed multidisciplinary education. Choice based credit system offers students to choose and study specialization based on disciplines as well as the option to study subjects from other disciplines. The recent initiative of multidisciplinary education of the government of India, contained in NEP 2020, is important. There are challenges of institutional restructuring as large investment is required for a single discipline institution to convert into a multidisciplinary institution. However, partially the curricular restructuring will enable multidisciplinary teaching in Indian higher education.

This study examines the challenges that graduates may encounter in their future careers. Additionally, it explores how a multi-disciplinary approach in higher education can effectively address and navigate these challenges.

Challenges for graduates in their career

The rapid advancements in technology have significantly altered the employment landscape, presenting several challenges for graduates in their careers. Some key challenges include (Kolade et.al,2022):

Skill Obsolescence:

Technological advancements often lead to the rapid obsolescence of certain skills. Graduates may find their skill sets outdated, requiring continuous learning to stay relevant.

Job Displacement:

Automation and artificial intelligence may lead to the displacement of certain jobs, impacting employment opportunities for graduates in specific fields.

Increased Competition:

As technology facilitates global connectivity, graduates face increased competition not only locally but also internationally. Global talent pools can intensify competition for job opportunities.

Changing Job Roles:

The nature of job roles is evolving with technological changes. Graduates may need to adapt to new and hybrid roles that demand a combination of technical and non-technical skills.

Shortened Industry Cycles:

Industries experience rapid cycles of innovation and change. Graduates may need to navigate frequent disruptions and adapt quickly to stay competitive in dynamic markets.

Digital Skills Gap:

The demand for digital skills is on the rise, and graduates may face challenges if their education did not adequately prepare them for the digital aspects of their chosen fields.

Continuous Learning Pressure:

The need for lifelong learning has become more pronounced. Graduates are under pressure to engage in continuous learning to keep up with evolving technologies and industry trends.

Uncertainty and Ambiguity:

The fast-paced technological changes contribute to an environment of uncertainty and ambiguity. Graduates may need to navigate ambiguous situations and make informed decisions in rapidly changing contexts (Brigid et.al, 2021.).

Cybersecurity Concerns:

With increased reliance on technology, graduates need to be aware of cybersecurity issues. Industries are increasingly concerned about protecting sensitive data and digital assets.

Adaptability and Resilience:

Graduates must develop high levels of adaptability and resilience to cope with unexpected changes. The ability to bounce back from setbacks and quickly adjust to new circumstances is crucial.

Ethical Considerations:

As technology plays a more significant role in various industries, graduates must navigate ethical considerations related to data privacy, artificial intelligence, and other emerging technologies.

Integration of Soft Skills:

While technical skills are essential, graduates also need strong soft skills such as communication, teamwork, and problem-solving to thrive in collaborative and rapidly changing work environments.

Addressing these challenges requires a holistic approach, and a multi-disciplinary education that combines technical expertise with broader skills can better prepare graduates to navigate the complexities of the modern employment landscape.

Multi-disciplinary approach to meet the challenges in the future career

A multi-disciplinary approach is an effective strategy for addressing the challenges that individuals may encounter in their future careers. This approach involves integrating knowledge, skills, and perspectives from various disciplines to create a more comprehensive and versatile skill set. Here's how a multi-disciplinary approach can help meet the challenges in future careers (IITMS):

Adaptability to Change: Rapid changes in technology and industries demand adaptability. A multi-disciplinary background equips individuals with diverse skills, making it easier to pivot and embrace new roles or industries.

Innovation and Creativity: Innovation often occurs at the intersection of different disciplines. A multi-disciplinary approach encourages creative thinking by combining ideas from various fields, fostering innovative solutions to challenges.

Effective Communication: Professionals with a multi-disciplinary background are often skilled communicators, capable of translating complex concepts into accessible language. This skill is essential for effective collaboration with colleagues from diverse backgrounds.

Versatility in Skill Set: A multi-disciplinary approach results in a versatile skill set that spans different domains. This versatility enhances an individual's ability to take on diverse roles and responsibilities within a dynamic work environment.

Interdisciplinary Collaboration: Many contemporary challenges require collaboration between professionals from different disciplines. Individuals with a multi-disciplinary approach

are well-equipped to collaborate effectively in interdisciplinary teams (Economic Times).

Global Perspective: Globalization has increased the interconnectedness of industries and markets. A multi-disciplinary background provides individuals with a broader understanding of global issues and the ability to navigate diverse cultural contexts.

Continuous Learning: The multi-disciplinary approach instills a mindset of continuous learning. Professionals with this background are more likely to engage in lifelong learning to stay updated on emerging trends and technologies.

Ethical Decision-Making: Considering ethical implications is crucial in decision-making. A multi-disciplinary approach encourages individuals to consider ethical aspects from different perspectives, promoting responsible and well-informed choices.

Leadership in Innovation: In rapidly evolving fields, leaders often emerge from those with a multi-disciplinary background. These individuals are better positioned to lead teams through innovation and navigate changes effectively.

Addressing Industry-Specific Challenges: Different industries face unique challenges. A multi-disciplinary approach enables professionals to bring insights from various fields to address industry-specific issues more comprehensively.

Enhanced Problem Recognition: Professionals with exposure to multiple disciplines develop a broader awareness of potential challenges. This enhanced problem recognition allows for proactive problem-solving and risk mitigation.

In summary, a multi-disciplinary approach is a valuable asset for individuals navigating the challenges in their future careers. It not only equips them with a diverse skill set but also fosters a

mindset that is adaptable, innovative, and capable of addressing complex problems from various angles.

Multi-disciplinary integration into the higher education

To ensure a multi-disciplinary integration into higher education that effectively meets the challenges of future careers, institutions can adopt various strategies:

Develop degree programs that integrate courses from different disciplines, allowing students to gain a comprehensive skill set. Encourage collaboration between departments to design courses that bridge the gap between disciplines and provide a holistic education. Implement project-based learning experiences that require students to apply knowledge and skills from various disciplines to solve real-world problems. Facilitate collaborative research projects that involve faculty and students from different departments, fostering a culture of interdisciplinary research. Design flexible curricula that enable students to choose courses from diverse disciplines, tailoring their education to their career goals (Parker et.al, 2022).

Organize seminars and workshops that bring together experts from different fields to discuss interdisciplinary approaches to contemporary challenges. Implement capstone projects that require students to integrate knowledge and skills from multiple disciplines, showcasing their ability to address complex issues. Infuse technology into educational practices, emphasizing how different disciplines utilize technology in solving problems and advancing their fields. Incorporate a global perspective into curricula by addressing international issues and promoting cross-cultural understanding (Aliabadi, R et.al,2023). Provide professional development opportunities that encourage faculty to collaborate across disciplines, fostering a culture of continuous learning

and innovation. Collaborate with industries to align educational programs with the skills needed in the workforce, ensuring graduates are well-prepared for their future careers. Facilitate student exchanges and internships that expose them to different disciplines and work environments, broadening their perspectives. Integrate soft skills development into the curriculum, ensuring that students acquire communication, teamwork, and problem-solving abilities.

Offer courses or activities that enhance cross-cultural competency, preparing students for diverse workplaces and global collaboration. Establish mechanisms for continuous feedback from both students and industry partners, allowing the curriculum to adapt to changing needs and trends.

By adopting these strategies, higher education institutions can create a learning environment that not only imparts discipline-specific knowledge but also fosters a holistic, multi-disciplinary perspective. This approach prepares students to navigate the challenges of future careers that increasingly require a synthesis of skills and knowledge from various domains.

Discussion

Higher education institutions can create degree programs that combine courses from several disciplines, promote departmental collaboration, use project-based learning, support cooperative research projects, create flexible curricula, host seminars and workshops and etc. These strategies create a learning environment that not only imparts discipline-specific knowledge but also fosters a holistic, multi-disciplinary perspective, preparing students for future careers that require a synthesis of skills from various domains.

Graduates can utilize their acquired knowledge in their professional endeavors, enabling them to thrive in the competitive

job market and maintain job sustainability. Multidisciplinary skills prove beneficial not only for individual career growth but also for devising solutions to real-world problems, thereby contributing to societal welfare.

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Pros and Cons of Multidisciplinary approach in Higher Education

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Abstract

This paper explores the significance of a multidisciplinary approach in higher education, particularly focusing on Women's Christian College (WCC) in Chennai. The historical context of discipline-based education is discussed, highlighting the evolution towards interdisciplinary education, which gained prominence in the 1960s. The National Education Policy (NEP) of 2020 emphasizes the integration of multidisciplinary education to foster holistic development, critical thinking, and research opportunities. The paper outlines the various ways by which WCC incorporates multidisciplinary education through elective courses, research activities, innovation and incubation initiatives, global perspectives and practical applications. The benefits of this approach at WCC encompasses holistic education, development of interdisciplinary skills, adaptability, problem-solving abilities and preparedness to address global issues. This paper also highlights the hurdles encountered in implementing multidisciplinary programs with respect to curricular integration, resource allocation, faculty collaboration etc. Despite these challenges, the implementation of multidisciplinary education at WCC

demonstrates a commitment towards providing students with a comprehensive and holistic education, aligning with the goals of NEP 2020.

Keywords: *Multidisciplinary approach, Womens's Christian College, Chennai, NEP 2020*

Introduction

Interdisciplinary approach is considered to be the most recommended approach for higher education in the present times. Discipline based education which has been in place since the middle ages when universities were established in Paris and Bologna [1] finds its origin in the human tendency to organize study in any field of interest by categorizing, classifying and then conceptualizing. Further scientific approach also involved specialization in relevant fields to be economically beneficial. The boundaries of a discipline however becomes a limiting factor that prevents the drawing in of knowledge from other disciplines.. This interdisciplinary approach started gaining importance in the 1960s when students voiced their desire for replacement of disciplinary structures in universities by a more holistic approach that allows for reforms, innovation and progress [3]. The advocates of interdisciplinary approach pointed out that it fosters creativity, helps in identifying grey areas within a given discipline, provides solutions for many social, intellectual and practical problems and allows greater flexibility in research..

A subclass of interdisciplinary approach is the multidisciplinary approach which is a juxtaposition of disciplines with no apparent connections between them. For example, a lot of work is being done to identify the connections between music and mathematics which are apparently unrelated disciplines. Advantages of a multidisciplinary approach includes possibility for students to

change their major field without any difficulty, possibility for careers in varied fields and the possibility of opening up new areas of knowledge that lead to new discoveries [5]. Multidisciplinary approach will enable learners to gain knowledge and acquire skills in more than one discipline, integrate knowledge and apply skills from varied disciplines to solve complex problems [6]. Multidisciplinary approach can be incorporated in the curricula at the elective course level, in the program level or at the research level.

A multidisciplinary education, as envisaged in the NEP-2020 includes.

The promotion of a multidisciplinary approach in education by the National Education Policy (NEP) of 2020 can be attributed to the following aims of the policy makers:

- Development of social, physical, intellectual, emotional and moral capacities of human beings in an integrated manner.
- A flexible curriculum that facilitate students to interconnect all sorts of knowledge and inquiry to derive effective solutions. This approach would help the learner to overcome learning difficulties and attain overall development.
- Innovative Curriculum that includes credit-based courses and projects in the domains of community engagement and service, environmental education and value-based education
- Enhancement of research opportunities through a holistic and multidisciplinary approach.
- Vocational Education in partnership with Industry and NGOs
- Promoting innovation among student communities by setting up start-up incubation centres
- The structure and lengths of degree programmes to be adjusted to provide multiple entry and multiple exit options within the period, with appropriate certifications

Multidisciplinary education in the context of WCC

Multidisciplinary education at WCC involves a curriculum that spans a wide range of academic courses providing students with a holistic and well-rounded education within the context of their respective disciplines. This is accomplished by incorporating a multidisciplinary approach in the curricula at the elective or skill development course level and at the research level.

- **Elective Courses:** In addition to the mandatory Core Subjects of each discipline, students can opt for a number of elective courses which are multidisciplinary / interdisciplinary in nature. This allows students to integrate knowledge from multiple disciplines and explore the intersection of courses based on values, gender issues and social sciences as envisaged by NEP 2020. At the elective level, several non-major elective courses of the multidisciplinary nature have been successfully introduced at WCC. For example, Forensic science is offered by the department of Chemistry as a non-major elective course to students interested in considering a career in forensic science. The multidisciplinary nature of this course allows students from various disciplines to appreciate the role of their respective disciplines in the process of crime detection based on the principles of Forensic science.
- **Skill based courses:** Offering Skill development courses to students of other disciplines also achieves the aim of providing a multidisciplinary education to students in the undergraduate or postgraduate levels. One such course is the Web Design course which is offered by the department of Computer Science to students of other disciplines.
- **Research Opportunities:** Multidisciplinary research requires exposure to the fundamental concepts and language

of different disciplines. Research scholars who pursue multidisciplinary research gain proficiency in diverse disciplines and integrate the knowledge to devise appropriate methods to carry multidisciplinary research. They will also connect with faculty guides from different disciplines and acquire the technical skills required to collect data, conduct experimental work and correlate the observations to arrive at meaningful inferences. When carried out effectively the outcome of multidisciplinary research will provide solutions to problems of social, economic, environmental and political nature and have real-time impact. Hence, WCC students are engaged in multidisciplinary research projects that allow collaboration across departments. For example, the UG and PG students have carried out projects that involve nanoscience and chemistry or physics. Several research scholars of the Biotechnology department undertake research work involving biotechnology, chemistry and plant biology disciplines.

- **Promote multidisciplinary innovation and incubation:** The Institution's Innovation Council of WCC collaborates with industry and start-ups to conduct workshops on entrepreneurship, innovation and incubation and provides students with real-world exposure and mentorship opportunities through hackathons and competitions that encourage students to work on multidisciplinary projects interacting with professionals, entrepreneurs and researchers from diverse disciplines.
- **Global perspective:** Students who take up Semester Abroad Program offered in WCC are exposed to a curriculum that incorporates a global perspective fostering an understanding of global challenges and solutions.

- **Practical Applications:** Through project work, research activities or on the job training, students of WCC are given an exposure to methods and technologies of diverse domains to nurture critical thinking, adaptability, problem solving, analytical and communication skills in the learners as advocated by NEP.

All the above multidisciplinary approaches incorporated in WCC focus on the holistic development of students, encompassing intellectual, emotional, and spiritual growth.

Benefits of Multidisciplinary Approach in the context of WCC

The potential advantages of implementing multidisciplinary approach at WCC include the following:

1. **Holistic Education:** Multidisciplinary education provides WCC students with a well-rounded exposure to a diverse range of subjects, fostering intellectual growth and a broader perspective on various issues.
2. **Interdisciplinary Skills:** Students learn to integrate knowledge from different disciplines, think critically, solve problems whereby they are better equipped to face the complexities of the real world where solutions often require a combination of skills and perspectives
3. **Adaptability:** Exposure to diverse subjects enhances students' adaptability and versatility. They learn to navigate different fields of knowledge with flexibility to handle evolving career paths
4. **Problem Solving Skills:** Hackathons, innovation challenges and competitions organized at WCC encourage students

to work on multidisciplinary projects with creativity and problem-solving skills.

5. **Preparation for Global Challenges:** The multidisciplinary courses, research and on the job training also impart global perspectives and prepare students to address complex, global challenges.
6. **Integration of Faith and Learning:** Multidisciplinary approach also offers opportunities to integrate faith with learning and creates scope for students to explore the intersection of faith with various academic disciplines.
7. **Enhanced Communication Skills:** Engaging with diverse subjects enhances communication skills as students learn to convey complex ideas to individuals from different backgrounds and disciplines
8. **Career Readiness:** Multidisciplinary education equips students with a broader skill set, making them more attractive to employers who seek individuals with diverse talents and the ability to adapt to changing workplace demands.
9. **Service Learning:** Multidisciplinary education through service learning projects encourages community engagement, connecting academic knowledge with real-world issues and fostering a sense of social responsibility.

Challenges of Multidisciplinary Programs in Higher Education Institutions(HEIs)

While multidisciplinary programs as envisioned by NEP 2020, may offer numerous benefits, they also pose certain challenges. These challenges can arise from various factors, including institutional, logistical, and pedagogical considerations. Some

potential challenges to be addressed while attempting to implement multidisciplinary programs at WCC include:

1. Curricular Integration

Ensuring seamless integration of diverse subjects into a coherent curriculum without compromising on the fundamental requirements of each discipline can be challenging at the designing stage of the curriculum.

2. Resource Allocation:

Allocating resources, such as faculty, facilities such as laboratories, classrooms across multiple disciplines can be a logistical challenge. The need for specialized resources in each field might strain the college's budget.

3. Faculty Collaboration:

Coordinating faculty from different disciplines to collaborate on course design and delivery may require careful planning and the faculty may require additional training.

4. Student Advising and Support

Providing effective academic orientation for students pursuing multidisciplinary programs will be crucial to guide students in selecting appropriate courses and navigating diverse academic paths

5. Assessment and Evaluation:

Developing fair and comprehensive assessment methods and evaluation criteria for multidisciplinary programs can be challenging.

6. Progression to Higher Education:

On successful completion of a multidisciplinary degree program the students may face difficulty to pursuing higher

studies due to the diverse nature of the course content and the prerequisites of the post graduate degree program the student wishes to pursue

7. Staying Current with Trends:

Keeping multidisciplinary programs relevant and aligned with current trends and developments in various fields can be demanding. Regular updates to the curriculum may be necessary to address emerging issues and technologies.

8. Institutional Support:

Ensuring consistent institutional support for multidisciplinary programs is crucial. Adequate funding, faculty development programs, and administrative support are necessary for the sustained success of these initiatives.

9. Student Engagement:

Maintaining student engagement in multidisciplinary programs may be challenging, especially if students perceive certain disciplines as more demanding or less relevant to their career.

Conclusion

The multidisciplinary approach adopted at the level of elective courses, skill based courses and research activities at WCC facilitate development of interdisciplinary skills such as enhanced adaptability, improved problem-solving abilities and nurture holistic development of the learners. The challenges faced in implementing multidisciplinary programs underscore the need for ongoing institutional support, strategic planning and adaptability to ensure the sustained success of multidisciplinary initiatives in higher education institutions like WCC.

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