

ISSN 2348-084X

COLLEGE POST

the higher education journal

VOL. 22, No. 1

January - March, 2023



The Quantum Computer - the future of Science and Technology changing our lives.

seed...



seed...

CHEST

International Diploma in Educational Leadership

-Higher Education

5th Batch

- One year diploma is based on adopted and adapted UNESCO - International Institute of Educational Planning, Paris Training Modules developed by Dr. Bikas C. Sanyal and Training Modules developed by eminent persons in India.
- The program will be imparted in four terms each of 12 weeks virtually with the provision of one week face-to-face interaction and one week (optional) international summer school in Paris/ Europe.
- The Programme is meant for Policy makers, Planners, Administrators, Entrepreneurs and key Decision Makers, Deans, Registrar of Universities, Principals of Colleges and persons aspire to occupy higher positions in higher education.
- Starting from 5th September, 2023. Last date of registration is 30th July, 2023. For details visit www.seededu.org, or call 011 43008598 and 09868820215 or e-mail seedicf@gmail.com, idelhe@gmail.com

College Post Editorial Board :

GD Sharma, Baldev Mahajan, M.M. Pant, S. Bhushan, S.C. Sharma, Kavita Sharma & Kunal Mathur

EDITORIAL

PROVIDING AND IMPROVING THE QUALITY OF HIGHER EDUCATION BY FOREIGN UNIVERSITIES IN INDIA- THE WHITE MAN'S BURDEN!



The System: The Indian Education system is very vast. The size of higher education is also very substantial. It is presently (2020-21) enrolling approximately 27 percent (4.14 crores) of the eligible higher education (18-23 years) i.e. 14.85 crores. NEP proposes to increase this ratio to 50 percent 2035 of the eligible age group population. Presently eligible age group population to the total population is around 9.29 percent. Based on the projected population of India 166 crores by 2050, the population in 2035 works out as 141.25 crores. Accordingly, the eligible age group population works out to 13.12 crores. If half of the eligible age group population is projected to register for higher education, the total enrollment would be 6.56 crores against the present 4.14 crores. Presently we have all put together (Universities, Colleges, Stand-alone institutions) 56205 institutions on average enrolling 737 students. We would (assuming the same number) need an additional 39718 by 2035 i.e. 95 923 institutions. This means we need to add on average 2648 institutions every year. Presently teacher per institution works out to be nearly 27 at the figure of total teachers of 15.05 lakhs. We would need another 10.84 i.e. nearly 11 lakh teachers i.e. total teachers 25.89 lakhs.

Some will be in the public sector and others would be in the private sector. Institutions of higher education in the private sector grew significantly from 2005 to 2012. Growth has now tapered. If institutions in the private sector do not grow as much as in the past few years, the burden will fall on the public sector, if it attempts to meet the target of 50 percent of eligible age groups in higher education.

Students Going Abroad and Coming to India: Besides this, about 7-8 hundred thousand students go abroad for studies. The projected figure for 2024 is more than one million. If we want to retain half of them we would need additional 679 institutions and a corresponding number of teachers. The number of students coming to India for studies is within 100 thousand. If we want to attract more students may be double of them in a couple of years we may need additional 200 institutions and a corresponding number of teachers.

CONTENTS

Editorial	1
News	2
Articles:	
1. Feminization of Market Gardening	3
2. State, Market, and Equity in Higher Education	11
3. The Challenge of funding and approach for Making Indian Higher Education a leader in the World- Viswaguru	16
4. Neuroeducation	19
5. Applications of artificial intelligence for teaching and learning	23
6. The UNESCO Quick Start Guide on Chat GPT	25
Researches in Education Across the Globe	27
Education News Analysis	29
Technology Watch	30
Book Review	31
	32

Editor

G.D. Sharma

Co-editor

Baldev Mahajan

The Funding: Presently we are spending (Centre + States) less than 0.37 percent of GDP on higher education. Taking the highest amount of GDP is Rs. 40780.25 Billion or 4078025 Million This works out as Rs.15088 million for higher education and-per institutions it works out as Rs.26.84 Lakhs and taking an average enrollment for 737 students per institution it works out as Rs.3636.36 per student. To meet future needs at the same level of expenditure we would need to double the expenditure on higher education. If expenditure is not commensurate with the need, the above calculation of 50% GER will go haywire. NEP 2020 promised so, but the last few years' expenditures do not meet the promised sum.

The Quality: The record of the quality of graduates produced in portals of higher education is quite reasonable as large numbers of engineers, doctors, and data scientists are manning engineering, health, and digital systems the world over. Maybe, it is a selective number. But vast systems of services- health, education, internal external security systems, manufacturing, infrastructures, trade, and commerce are managed by graduates of universities and colleges from India. India has not so far lacked the requisite manpower to man any of these. It is a different matter many are remaining unemployed because these sectors have not expanded or maybe because as often stated by foreign and Indian employers that they are unemployable owing to poor quality education and skills. But we have not seen any major industry claiming that owing to a lack of educated and trained people we are not able to expand. There used to be a shortage of Pilots therefore, expatriates were employed, but that shortage is diminishing as many pilots trained in good institutions are looking for jobs.

Those who went abroad for studies, particularly in developed countries in the West attempted to find jobs in one of these countries. Those who went to the eastern part of the world for medical and engineering education had a tough time finding jobs in these countries and India.

....contd on page 18

Two meetings of National Executive Committee of ICF was held inviting ICF state Secretaries for the meeting. ICF state secretaries were informed about the launching of a separate website for Indian Colleges Forum titled as indiancollegesforum.com. Members were requested that they can request ICF member colleges to go through the list of members given in the website by respective state update their information and suggest changes if any. All member colleges should also provide their web address link under the college name in the list. This help students and faculty members of member colleges to benefit from each other colleges' information within and outside the state. It will also provide a networking platform.

Members were also informed that International Diploma Programme in Educational Leadership is progressing well. Contents of modules are made available on Canvas LMS and an interactive session is organized every Thursday from 7-9 PM. It was mentioned to them that participants of the programme are very effectively participate in the interactive session. Under the new approach participants have been given opportunity to make their presentation of portfolio of learning. Two of the participants namely, Dr. M. Usman and Dr. Moahmadali have made presentation and interacted with other participants and experts on the panel. It was also informed that all the video of all the interactive session is made available on Canvas LMS as well as on U Tube.

President of Seed ICF said that State Secretaries of ICF should constitute a state level executive committee of ICF and have at least two meeting of executive committee and members of ICF. It was suggested that one meeting with State Executive Committee and members of ICF can also be held on Google meet as per convenience of state chapter.

Dr. M Usman suggested that under the new guidelines for Assessment and Accreditation the following aspects have been put for assessment of the Colleges:

The NAAC Manual for Self Study Report by Affiliated colleges has a brief section on 'Institutional preparedness for NEP' (description in maximum 500 words each), on the following six parameters:

- i. Multidisciplinary / interdisciplinary
- ii. Academic bank of credits (ABC)
- iii. Skill development
- iv. Appropriate integration of Indian Knowledge system (teaching in Indian Language, culture, using online course)
- v. Focus on Outcome based education (OBE)
- vi. Distance education/online education

ICF may consider organizing some online programmes on the above for the benefit of HEIs.

He also made the following suggestions:

- Member colleges may be encouraged to offer the credit courses of SEED-ICF on Value Education and Life Skills as a part of the Add on courses/Certificate courses offered by them. In this context the possibility for signing MoU by the colleges with ICF/ICF State chapters may be considered. It will be highly beneficial for colleges in the process of accreditation.
- The details of the scheme of National Development volunteers may be shared in the ICF website so that interested member colleges can introduce the scheme in their campuses.
- An online meeting/session of ICF member colleges and potential members may be held to broaden our membership base.

These suggestions accepted by the National Executive of ICF and Governing Body of SEED. Details of Certificate Courses in Values and Life Coping Skills along with other details have been forwarded to ICF State Secretaries, Details of National Development Volunteer Scheme is also being uploaded to Indian Colleges Website and being shared with State Secretaries.

Two Students of Rishihood University, Haryana are pursuing Values and Life Coping Skills certificate courses. These courses can be launched by the member Colleges in Collaboration with SEED-CHEST. These courses are free of cost to the registered students on LMS. Those who will to take test and get certificate of completion can register with the college as per fee prescribed by the college with some revenue sharing by SEED-CHEST for providing contents on LMS, Assignment evaluation and conduct of test. SEED-CHEST will also train the coordinator in the college to act as mentor to the students.

The scheme of National Development Volunteer was initially started at HMV College, Una, Rajkot, Gujarat. It is being revamped and reintroduced. A Chief Volunteer has been appointed to implement the scheme. The scheme will be shared with all the member colleges.

Dr. B.K Tyagi, Secretary General ICF observed that many head of colleges are not aware of how to implement NEP-2020 and NAAC provisions. There is need for providing orientation of them by ICF. Things in technology are also changing very fast and every head of the colleges and university need to be support to keep them up to date.

In the meeting of GB professor MM Pant offered all the help to conducting programme for making colleges up to date on AI and its use in higher education.

Shri Baldev Mahajan, Treasurer of SEED in GB meeting of SEED suggested that ICF is very important activity of SEED it has provided voice to colleges. Hence activities supporting colleges should be pursued vigorously.

FEMINIZATION OF MARKET GARDENING -A CASE STUDY OF FIJIAN WOMEN IN SIGATOKA VALLEY, FIJI

MANPREET KAUR *

This paper deals with how education, skill development of women can lead to education of their children and their economic empowerment. This paper can form valuable guidelines for under taking community education and development work by colleges in India. The paper is based on Ph.D. Thesis of the author submitted to University of Fiji.

ABSTRACT

Today, feminization of agriculture in Fiji has become a household name ever since the concept of 'buy local, grow local' and the introduction of 'Fijian Made' mooted by the Fijian government in the year 2009, primarily to promote Fijian produce and products, for domestic and international markets through a national branding strategy. In 2011, the cabinet endorsed the brand and reflected in the Industry Emblem Decree and regulation 2011. During this time, the focus has been given to women engagement in agriculture and the need to promote women participation in areas such as market gardening, root crops, backyard gardening, selling of fresh produce as hawkers to name a few in order to supplement family income and support households, adding to the country's economic growth. More so, the concept of feminizing agriculture implies to the quantifiable rise of women's engagement particularly centering on the agricultural region, predominantly in resource constrained nations such as Fiji Islands. According to UN Women (2016), "women are over-represented in subsistence agriculture and make up the majority of market vendors in Fiji and the wider Pacific. The income they earn from selling produce and handicrafts at the market often pays for their children's education and their families' day-to-day living expenses". This research aims to investigate feminization of market gardening - a case study of Sigatoka Valley, Fiji. The research endeavors to examine the role of women in market gardening in Sigatoka Valley and identify the challenges they face being women engaged in supplementing family income.

1.1 Introduction and Overview

Market gardening is defined as small scale vegetable farming for sale. According to "Ojeifor et al. (2006) market gardening is the growing of vegetables, mostly for commercial purposes and for domestic use. Bachmann

*Dr. Manpreet Kaur, Lecturer in English, School of Humanities and Arts, The University of Fiji, Fiji

(2002) also states that market gardening entails the intense production of high value crops and gives farmers the potential to increase their income from a few acres" (Ofoka, et. al. 2013: 3950). Market gardening also entails growing flowers for sale, however for the purpose of this research, the term would refer to vegetable farming for sale and family use. In Fiji, engaging women in market gardening enables women to set up savings funds through their associations, builds their capacity to organize and manage market gardens and improves their cultivation techniques. Also, due to the model tropical weather patterns, the Western Front of Viti Levu, particularly Sigatoka Valley is idyllic for cash crops. Thus, women's engagement in market gardening in Fiji has been seen as an opportunity to supplement familial income, generating additional support system for the family and empowering women through their rendezvous in self-paid employment scheme. The Ministry of Agriculture and The Ministry of Women are focused to provide support system to women to further boost their market gardening - an avenue to empower, educate, teach and create opportunities for women to be independent. Also, the concept of market gardening enables women to set up savings funds through their associations, builds their capacity to organize and manage market gardens and improves their cultivation techniques. Market gardening in Sigatoka Valley has made women realize the significance of being economically empowered to support their families.

1.2 Research Background

The Fijian Ministry of Agriculture and the Ministry of Women are committed in their efforts to empower women to be effectively engaged in market gardening, as one of the means to boost women's role and capacity to supplement family income. According to Women in Livelihoods (2013), "it is a common understanding that official statistics on women in agriculture do not reflect the reality on the ground across countries. Government statistics count 'registered' ones under certain criteria,

In Fiji, engaging women in market gardening enables women to set up savings funds through their associations, builds their capacity to organize and manage market gardens and improves their cultivation techniques.

which usually represented by men in patriarchal societies. While it shows smaller number of women appearing at official level, it is blind to women engaging in smaller scale agriculture and women's multiple roles played in on and off farm practices". Thus, it is pertinent today to investigate the role played by women in market gardening and how best can they be empowered and supported to fully fathom their position. Conducting a field study to investigate the role of women in market gardening at Sigatoka Valley, Fiji will form a premise to adjudicate the extent of women participation in agriculture sector and ways in which they can be further harnessed as a team for women empowerment. A similar research done in the same area was published in 2013 with an objective of understanding the then practices of vegetable farmers and the constraints they faced (Fink, 2013), however, this research does not duplicate it as it precisely focuses on women engaged in market gardening with an intention to further this study for women's capacity building. There have been some other researches done in Fiji on women in particular, however, these are not recent and do not focus on women involved in market gardening.

2.0 Literature Review

"Asia and the Pacific are the world's most populous region and also the most ecologically and climatically vulnerable. Family farming remains the predominant form of agriculture in Asia and the Pacific. Family enterprises in agriculture, forestry and fishery production play key roles in food security, local economies, sustainable use of natural resources, and climate change mitigation and adaptation. Smallholder farmers produce most of the food consumed in their households and up to 80 per cent of the food produced in Asia. Families often cultivate different plots for household consumption and the market" (International Fund for Agricultural Development, 2014: 2). Farming practices have and need changing and these also have challenges. Involving women, that is, feminization of agriculture is one of the many strategies to improve gardening in terms of increasing and diversifying yields and production.

"Feminization of agriculture refers to women's increasing participation in agricultural labour force, whether as independent producers, unremunerated family workers, or agricultural wage workers" (Ajani, 2011: 32). "Rural women have been involved in agricultural production since the invention of agriculture" (Lastarria-Cornhiel, 2006: 1). Women have always been tasked to take care of the house and to ensure the members of the family are fed. This has led to an even greater level of involvement of women in the agriculture sector, be it backyard gardening or large-scale farming. Women have been playing a huge role in the agriculture sector in the rural areas since decades, however with the current demand for female emancipation, fairness and women's role for sustainable

development; women in almost all areas are involved in market gardening. This enables them to shoulder the responsibility of household survival, in terms of nourishment and also allows them to participate in economic opportunities and contribute to the country's economy.

"Women make important contributions to the agricultural and rural economies of all regions of the world" (SOFA Team & Cheryl, 2011: 2). A FAO document "shows that while the proportion of the labor force working in agriculture declined over the 1990s, the proportion of women working in agriculture increased, particularly in developing countries" (Lastarria-Cornhiel, 2006: 2). Likewise, a survey done by SOFA Team and Cheryl (2011: 3) on five major regions of the world highlights "that women comprise just over 40 percent of the agricultural labour force in the developing world, a figure that has risen slightly since 1980 and ranges from about 20 percent in the Americas to almost 50 percent in Africa".

In addition, "world trade in agriculture is booming, yet food insecurity is at unprecedented levels. Global food production needs to double by 2050 to feed a projected population of 9 billion. In developing countries, women and girls form the backbone of smallholder agriculture. They serve as producers, labourers, processors and traders within largely domestic markets. They also dominate household-level food production and preparation. Women are responsible for 60-80% of food production in most developing countries, as well as for half of the world's food production" (World Economic Forum, 2013: 15).

"Official data for the year 2001 in India reported that 53 percent of male workers, 75 percent of all women workers and 85 percent of all rural women workers are in agriculture, and surprisingly, this percentage has declined less than 4 points since 1972-73" (Kelkar, n.d.: 3). In Nepal too, women have a vital function to play in the agriculture region. "In the absence of male, female members of the households are bearing more responsibilities in agricultural activities than they used to do before" (Tamang, et.al., 2014: 20).

Nigeria also has women's contribution in the farming segment. "They are dominant in farm work and sustaining their families even on a subsistence level" (Ajani, 2011: 31). These women are engaged in multiple tasks while on the farm. According to a research, "majority of the women farmers (93.3%) reported that one of the new roles they had assumed in agriculture is clearing of farmland. About 77.0% and 73.0% have taken up making of mounds and ridges and planting of white yams, respectively. Also, most (73.9%) of the women farmers carried out staking of yams with bamboo, while about 65% were involved in harvesting of white yams. Similarly, women farmers were involved in harvesting of oil palm fruits (56.3%), 75.6% harvested tree crops such as mango, orange, pear, cashew nut, etc and 61.3%

processed cassava using mills" (Ajani, 2011: 34).

"In many parts of the world today, there is an increasing trend towards what has been termed the feminization of agriculture" (Ajani, 2011: 31). Women take to the fields and farming as men leave or get fully involved in paid employment. Women's involvement in agriculture also provides them with an opportunity of having equal input in their familial units, society and at the national level as well. This can "include more resilient livelihoods options and better incomes, reduced workloads, improved health and education and improved management of their natural resources" (International Fund for Agricultural Development, 2014: 15).

Furthermore, "women, men and young people use different smallholder farming systems. For example, gender-based farming systems where men and women cultivate separate fields are common in many parts of sub-Saharan Africa. Similarly, poor rural women and men experience climate variability differently and cope in diverse ways in the face of climate change. Given their responsibilities to manage critical household assets and as stewards of natural resources, women are potential agents of change. Therefore, it is essential to draw on the local knowledge of female as well as male smallholders to develop adaptation strategies for families and communities to cope with changing climates" (International Fund for Agricultural Development, 2014: 7).

Women have been neglected from many works of life for a long time. Most households view women as being the support only and basically taking care of the household responsibilities. The responsibility of earning and being the sole provider for the family has for long been the men's. However, today, women are getting liberated, whereby they are seen in almost all areas of paid employment and as household head providing for the family's needs and wants.

Involving women in agriculture can be beneficial not only to the woman or the family concerned, but for the entire nation. It calls for gender division of labour and businesses running in sectors such as agriculture and food security and benefit from this. They can lend their novelty, resources and market understanding to bridge this gender gap (World Economic Forum, 2013).

"Furthermore, such investments can contribute to development overall by overcoming intergenerational cycles of poverty. Multinational companies, faced with a well-informed consumer base, are increasingly examining ways to engage in socially responsible practices and support international causes in emerging economies where their products are sourced" (World Economic Forum, 2013: 15).

"According to the Food and Agriculture Organization of the United Nations (FAO), women face a serious gender gap in accessing productive resources such as land,

credit, water and technologies. Closing this gap in agricultural yields alone could lift 100-150 million people out of hunger" (International Fund for Agricultural Development, 2014: 11).

However, involving females in the agricultural sector has some challenges for the women as well. Due to the urgency and awareness created for gender equality and women's emancipation and freedom to choose what they desire, it can be said that women's roles are limited when they are involved in the agriculture sector. Despite playing myriad roles, including contribution to agriculture, many studies suggest that women are still seen as secondary where they participate in agricultural activities to accommodate the demands of the family. Thus, the underlying ideology is still the same - women belonging to the home.

In Nepal, women are working "within the male-dominated agriculture system, which is not only adding to women's workload but is also inappropriate and unfriendly for them. In this situation, women are increasingly adopting the strategy of continuing farming as best as they can and also increasingly adopting less intensive farming practices, as well as abandoning their agricultural lands. As a result, there is reduction in food production, causing food insecurity primarily at local level" (Tamang, et.al., 2014: 21). This practice does not only limit women's growth and development, but the nation's development as well.

Not only this, many women who are involved in agricultural activities do not have freedom of all rights, such as education and decision making. Kelker (2009) contest that women are challenged with adisparatedrawback due to the fact thatas they are the ones who forgolearning and skill advancementprospects to administer land and farming. Thus, they lose out on what is now a necessity - education.

Likewise, in many families, men tend to migrate to other places, either another town or city or another country in search of better employment. There could be many other reasons for migration, however, many moves to earn more to support the family as required by the traditional responsibility assigned to them. Due to colossal male relocation, women have expanded and intensified their contribution in agricultural work as they are graduallyassuming the obligations for household endurance (Gartaula et al. 2010).

Females also tend to be disadvantaged when involved in agriculture as they play multiple roles and do many chores, inclusive of the household responsibilities. While females have expanded their span of toil in agricultural sector, they have to finish their other domestic and off-farm job as well (Cornhiel 2006). Tamang (et. al., 2014: 22) also states that "they have the compounded burden of productive and reproductive work."

A research on market gardening in Fiji highlights that

most vegetable farmers in Fiji were smallholders and relied on family labor with an average income in line with the national average income of rural households (Fink, 2013). Yabaki (2006) for his PhD dissertation, did a case study of a rural Fijian village located in the upper reaches of Sigatoka Valley with a focus on Women's Own Fish Pond Project and concluded that "the impact of modernization, particularly the influence of market economy, has been significant and has both challenged and complicated much of women's daily lived experiences".

Conclusively, women's participation in the agricultural sector is vital and "corporations interested in supporting meaningful food security interventions should be made better aware that women's empowerment is a core issue for gainful solutions" (World Economic Forum, 2013: 15). "Investing in women farmers will bolster agricultural productivity, reduce hunger, promote economic growth and contribute to the achievement of the Millennium Development Goals. The Food and Agriculture Organization estimates that if women had the same access to productive resources as men, they could increase yields on their farms by 20-30%; raise total agricultural output in developing countries by 2.5-4%, and reduce the number of hungry people in the world by 12-17%.¹ Investments in women's capacities to ensure more equitable access to assets and services - land, water, technology, innovation, credit, financial services, markets and training - will strengthen women's rights and potential - a win-win situation" (World Economic Forum, 2013: 15).

3.0 SIGNIFICANCE OF THIS STUDY

The findings will assist the Ministry of Agriculture and the Ministry of Women in Fiji to strengthen their policies and regulations for capacity building of Fijian women engaged in market gardening. This study will provide significant insight to promote women participation and active engagement in equally supporting their families through paid labour such as market gardening. Since the Western Front, particularly Sigatoka has a lot of women engaged in market gardening; the study will present opportunities to women in sustaining and encouraging rural community women's groups to be more vigorous in monetary programmes for aiding their sustenance and livelihoods. The study will also educate Fijian women entailed in market gardening to be cognizant on women's rights and protest the long-established gender responsibility since patriarchal traditions are still tough in the villages. The research will further foreground women on farming to push the boundary of traditional gender role and endeavor in innovative areas, such as cultivation, which otherwise was perceived to be controlled by males, will create an amendment in customary gender responsibilities. Also, the study will be of benefit to Fijian women in Sigatoka Valley to be exposed to new ideas, actions and techniques to entail in boosting their market gardening.

In light of the inclement in weather such as Tropical Cyclone Josie and Keni, women market vendors were affected, thus this research will provide direction and techniques that women vendors in Sigatoka Valley can entail in for mitigation purposes. The study will also ascertain the contribution of these women towards the economy of the society and country, thus allowing the relevant stakeholders to identify ways to assist and encourage the venture for higher productivity. Also, the study will make available relevant data on Fijian women's engagement and contribution through market gardening.

5.0 RESEARCH QUESTIONS

To accomplish the rationale of this study, this research was governed by the following overarching questions:

1. Why do women engage themselves in agriculture, precisely market gardening?
2. What benefits do they derive from this venture?
3. Are there any drawbacks/challenges in involving women in the agricultural sector?
4. How do women in agriculture contribute to the economic development of their family, society and the nation as a whole?

6.0 RESEARCH METHODOLOGY

The study entailed a mixed method approach - quantitative and qualitative. Questionnaires allow quantitative analysis while semi-structured interviews provide information for qualitative analysis. A survey research design was adopted in which questionnaires were used to collect information from the respondents. With this method, substantial information was collated from a large cohort in a short duration and in a relatively short time.

A descriptive design was used to describe the data. This design is a systematic method which involved observing and describing the behaviour of a subject without controlling it in any way. Quantitative method explained the phenomenon through the numerical data while qualitative research allowed collection of culturally specific information such as the principles, opinions, conduct, and social status of particular groups of people.

6.1 Study Sample

The area of study was Sigatoka Valley, precisely Navata, Nambaka, Jubairata, Raunitogo and Nagalimare villages since Sigatoka is the Salad Bowl of Fiji and is well known for its market gardening. This is an exploratory study which focuses on the selected villages with the target population as Fijian women engaged in market gardening and also their family members residing in the chosen settlements. The sampling catered for women engaged in gardening or producing vegetables for sale at home and also those entailed in selling the produce in the Sigatoka market or by the roadside or house to house as hawkers.

Since the sample size will only include females, the approximate female population for each village is taken to be 100. According to the 2017 Fiji Census Report, the female population for Nadroga/Navosa Province is almost half the total population, thus this understanding was used to estimate the female population at 100 from each village giving a total population of 500. The expected response is 70%.

Thus, a total of 96 individuals were part of the study. Questionnaires were administered to all 96 individuals and talanoa or unstructured interviews were with at least 50 as per availability.

6.2 Research Tool

Questionnaires were administered to the chosen women and family members to find out the perceived pattern amongst the respondents on their involvement in market gardening. Additionally, talanoa sessions (unstructured interviews) were conducted with some participants. Unstructured interviewing was feasible and proposed for this study as the researchers expanded sufficient indulgence of the milieu, and the chosen topic of study in order to gain an insight on the topic. Further, through this research design, it sets a premise for precise agenda for conversation with the informant, hence still remaining open to revision by respondents. The focal point for the researcher in an unstructured interview, getting the participants talk on a specific area of significance. This also allows opportunity to test the prior knowledge and at the same time, provide avenues to view and comprehend development in new ways.

The first two research questions were analyzed with the help of questionnaires and will require quantitative analysis. The five-point Likert category scale commencing from 5 (strongly consent) to 1 (strongly oppose) utilized in the study concentrating on the two questions to understand the theoretical and practical association of parents and guardians in their children's schooling. The other two research questions were analyzed after conducting interviews (structured and unstructured) with the sample population chosen. Open ended questions were utilized to collect finer points about parent or guardian engagement in children's learning and other educational accomplishments. This required a qualitative approach.

7.0 DISCUSSION AND FINDINGS

The section summarizes the key findings from the survey conducted with the Fijian women from the Sigatoka Valley. Out of 102 questionnaires given to the respondents, 96 participants responded which forms the premise of the discussion in this section.

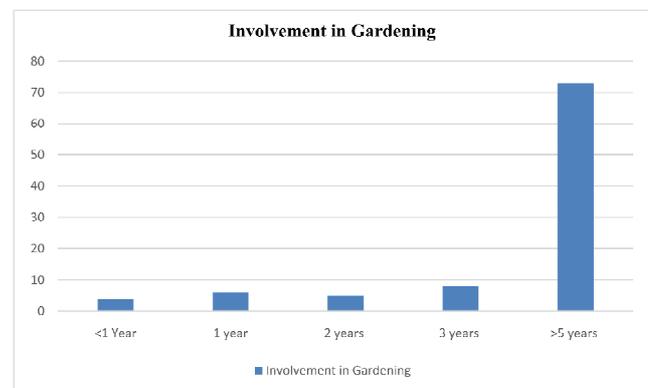
Farmer Background

Out of the 96 women farmers who responded to the questionnaires, a great number of respondents (56%, n=

54) were in their late 50's. 21 percent of the respondents were less than 40 years old while the remaining 19 percent were above 60 years old. The level of education of these respondents indicate that all had received primary level of education. 30% of the respondents had gone to attend secondary school out of which 7% did not complete. 46% of the respondents were Indo-Fijians while 54% were i-Taukei.

Duration of Involvement in Gardening and/or Selling Produce

The graph below shows the duration for how long the respondents have been engaged in gardening and/ or selling produce.



The results of the survey conducted with the women farmers show that while a small number of them have emerged recently into gardening and marketing of produce, a vast majority of these respondents (n=73) have been long term farmers. Their involvement in farmers spans from 10 to 30 years. These farmers have successfully farmed with the help of their family farmers and have marketed their produce at Sigatoka and Lautoka markets over the years. A follow-up question posed to the respondents revealed that 21% (n=20) of the respondents surveyed were small scale farmers while the remaining

Figure 1.



A small-scale farmer selling produce by the roadside, 2022.

79% (n=76) were engaged in large scale vegetable farming. Small scale farmers usually sold their produce at the nearest Sigatoka market on Saturdays or on the roadside stalls erected while the large-scale farmers opted to supply produce to Lautoka or Suva markets. Upon further investigation with respondents who engaged in large-scale farming, a small percentage (20%, n=15) opted for wholesale while the remaining preferred to sell themselves for profit maximization.

Figure 2.



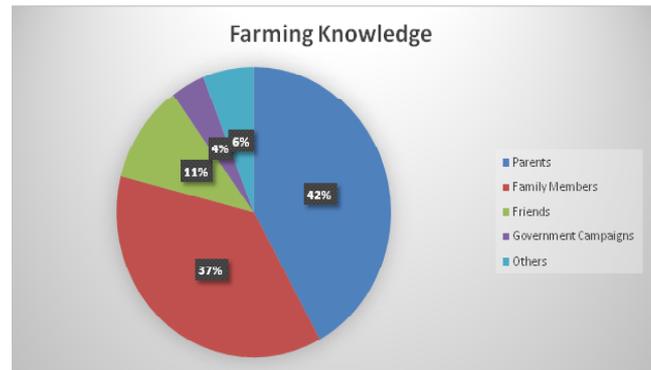
Large-scale farmers prefer to sell their produce at Sigatoka or Lautoka markets on Saturdays. Seen here are women vendors at the Sigatoka Market, 2022.

Farm Roles

For the women farmers of Sigatoka Valley, the roles and responsibilities on the farm varies. Since the farmers live in close-knit families, everyone is involved in the production of fruits and vegetables. It is worth noting that the number of people working on the farms depend on the size of land. Nearly all the respondents reveal that the physical labor-oriented task such as ploughing and land preparation are done by the males, females are engaged in other diversely important roles. The survey indicated that out of 96 women interviewed, 67% (n=70) help in weeding and planting, 18% (n=19) are engaged in harvesting of crops, 52% (n=54) help in selling their produce and 19% (n=20) are involved in administration roles. It should be noted that women farmers above the age of 60 (as mentioned earlier) are engaged in harvesting of crops which involve light duties such as inspection and bundling of crops. A follow up question revealed that these women chose to step back from other roles due to age factor but are willingly involved in light work.

Farming Knowledge

The survey revealed that respondents acquired whatever knowledge they had of farming from parents, family members, friends, government initiatives and campaigns and from other sources. A majority of them (42%)

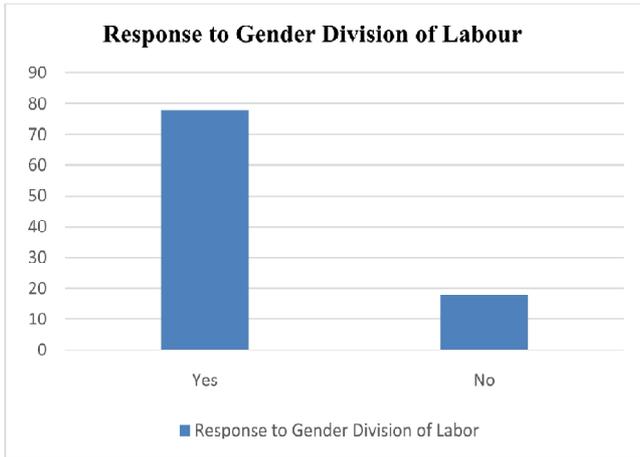


highlighted that parent were instrumental in imparting the skills and knowledge about farming to them and their siblings. Optimum utilization of land, crop rotation and harvesting methods were some of the knowledge that parents passed to these farmers. Other family members such as children, in-laws and husbands of these women farmers also helped them gain knowledge needed pertaining to farming. Thirty seven percent (37%) of respondents claimed that while they had prior knowledge about farming from their parents, they learnt a good deal after marriage. Government initiatives that were introduced helped a little while irrigation practices and modern farming methods were highlighted by the government officials. Upon questioning further, the farmers revealed that setting up irrigation pipes and using modern equipment in farming proved to be costly thus, preference for labor intensive task supersedes. It is worth noting that parents, family members, friends and government campaigns have also acted as inspirations behind farming for the respondents.

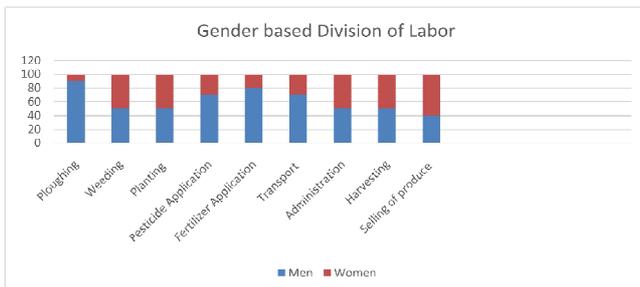
Information about this question was gathered through the 'talanoa' session. 'Talanoa' is an iTaukei word for story-telling. Most respondents shared their stories or inspiration behind venturing into the agricultural sector. Though a labor-intensive task, many preferred to be farmers as it was profitable financially and health wise. Sarojni Devi, 56, mentioned that it would have been challenging for her to find work in town or in resorts as she did not complete her high school. Upon marriage, she chose to help her in-laws in the farm. She further reveals that in doing so, she was able to stay fit, afford to send her children to primary, secondary and tertiary institutions and cater for the expenses at home as well. With the money earned from farming, Sarojni was able to buy a carrier van for transportation of produce to the market, a tractor and do home renovations. She highlighted that the inspiration she got from her parents, also farmers, and in-laws was worthwhile and she has never regretted since. A similar sentiment was also shared by Lusua Camari, 66, who mentioned that she got inspired by her husband. To support the children's education, Lusua and her husband chose to farm the land.

Division of Labour and Gender Inequalities

Since most farmers in the Sigatoka Valley are large-scale farmers (79%), it is rather a labour-intensive task to maintain the farming system in place. Respondents were asked about the gender division of labour on their farms and the results have been portrayed in the bar chart below.



Respondents who emphasized that there is no division of labour based on gender in their farms form the minority group with only 18 respondents. Reasons for this were that some males in the family were employed in the formal sector thus, the women took charge in managing their own farms. It is worth noting that these are small-scale women farmers who do not engage in labour-intensive tasks like the large-scale farmers. A majority of the respondents (78) agreed that there is division of labour based on their gender. The women farmers highlighted to being asked to carry out light duties than the male members of their family. A follow up question revealed the nature of duties that were expected from the women and men.



A bar graph reveals that duties that require more physical strength such as ploughing, pesticide application, fertilizer application and transport, which includes loading and unloading of produce, are usually carried out by the male counterparts while duties such as weeding, planting administration, harvesting and selling of produce are shared equally between the males and the female farmers in the family. 'Talanoa' session conducted to gather more information on this also revealed

that the males would start work on the farm earlier, around 5am in the morning and from 3pm in the afternoon, than the women. Women were and are, as revealed by some vendors, expected to cook for the family, tend to housework and then join the husbands or children in the farm. An impromptu question posed also revealed that women would join their male counterparts in the family after 8 am in the farm.

Benefits

The benefits outlined by the women farmers are that:

1. Farming keeps them physical fit;
2. It has secured them financially;
3. It leads to self-sufficiency and less reliance on processed food;
4. Reduces food shortage;
5. It is affordable to produce vegetables;
6. Keeps them away from sickness; and
7. It is a secured job. "As far as the land is there, there is a job. We do not have to worry about weekly income or finding another job" (Sarojni Devi).

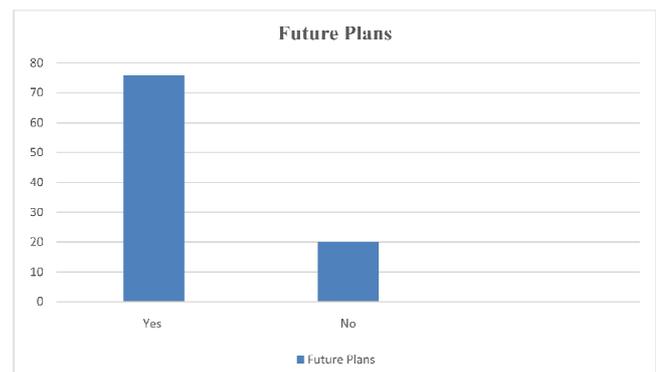
The benefits mentioned were the most common responses from those surveyed.

Encouraging other Women

The respondents surveyed highly agreed to encouraging other women to venture into farming or agriculture as it is a 'green gold' sector. The women vendors or farmers in the areas surveyed have become a source of inspiration for the coming generation as they are able to support their families and sustain livelihoods.

Future Plans

Out of the 96 women surveyed, 76 have future plans for their farms while the remaining 20 do not have any plans in the near future. Venturing into commercial farming, farming for export- markets and diversification of crops were some of the plans outlined by the respondents. While some farmers are supplying top quality and fresh produce to the resorts and hotels situated at the Coral Coast, others have been inspired to go the extra mile.



SUMMATION

It is conclusive from the research undertaken that women do contribute significantly to their familial income and sustenance by engaging in market gardening. Sigatoka Valley has a suitable climatic condition to support cash crops and other produce feasible for growth. Gardening being the 'green gold' has paved way for a lot of women to venture into market gardening. There is no denial that it has its own challenges, but the benefits outweigh the short falls. With UN's findings (2016), "women are over-represented in subsistence agriculture and make up the majority of market vendors in Fiji and the wider Pacific, this is evident here in Sigatoka Valley and subsequently in Sigatoka Market. The research revealed the active role Fijian women play in market gardening in Sigatoka Valley. Hence, there are some challenges they face being women engaged in supplementing family income, but the resilience and foresight these respondents revealed that it is a profitable venture. The research findings depict an overwhelming support mechanism that women play in supplementing their family and its sustenance.

9.0 REFERENCES

- Ajani, E. N. & Igbokwe, E. M. (2011) 'Implications of Feminization of Agriculture on women farmers in Anambra State, Nigeria', *Journal of Agricultural Extension*, 15(1) 31-39.
- Cornhiel, S. (2006) *Feminization of Agriculture: Trends and Driving Forces*. Background Paper for the World Development Report. Rimsip-Latin American Center for Rural Development.
- Creswell, J. W. (2003) *Research Design Qualitative, Quantitative, and Mixed Methods Approaches*, Sage Publications, London.
- Fink, A., Neave, S., Hickes, A., Wang, J. & Nand, N. (2013) 'Vegetable production, postharvest handling and marketing in Fiji', AVRDC The World Vegetable Center, Taiwan.
- Gartaula, H.N., Niehof A. & Visser L. (2010) *Feminisation of Agriculture as an Effect of Male out Migration: Unexpected Outcomes from Jhapa District, Eastern Nepal*. *The International Journal of Interdisciplinary Social Sciences*, 5(2) 565-577.
- International Fund for Agricultural Development, (2014) 'The changing role of women in the economic transformation of family farming in Asia and the Pacific', International Fund for Agricultural Development, Italy.
- International Fund for Agricultural Development, (2014) 'The Gender Advantage: women on the front line of climate change', International Fund for Agricultural Development.
- Kelkar, G. (n. d.) 'The Feminization of Agriculture in Asia: Implications for Women's Agency and Productivity', UNIFEM South-Asia Regional Office, New Delhi.
- Lastarria-Cornhiel, S. (2006) 'Feminization of Agriculture: Trends and Driving Forces', University of Wisconsin-Madison.
- Mathison, S. (1988) *Why Triangulate?* (n. p.)
- Ofoka, C. I. Chah, J. M. Madukwe, M. C. (2013) 'Characteristics of market garden in Anambra State, Nigeria' *African Journal of Agricultural Research*, 8(29) 3950-3957.
- Patton, M.Q. (1980) *Qualitative Evaluation Methods*, Sage, Beverly Hills.
- Tamang, S., Saudel, K. P. & Shrestha, K. K. (2014) 'Feminization of Agriculture and its Implications for Food Security in Rural Nepal', *Journal of Forest and Livelihood*, 12(1) 20-32.
- Tashakkori, A. and Teddlie, C. (1998) *Mixed Methodology: Combing Qualitative and Quantitative Approaches*. London: Sage.
- UN Women (2016). *Fiji's Market Vendors and Farmers Face an Uncertain Future*
<http://www.unwomen.org/en/news/stories/2016/2/fijis-market-vendors-and-farmers-face-an-uncertain-future>
 [Accessed 14 November 2017]
- Women and Livelihoods (2013). *Women in Agriculture in Fiji -We are Women in Asia & the Pacific*
<https://wearewomeninasia.wordpress.com/2013/09/15/women-in-agriculture-in-fiji/>
 [Accessed 14 November 2017]
- World Economic Forum (2013) *Five Challenges, One Solution: Women* World Economic Forum.
- Yabaki, T. (2006) 'Women's Life in a Fijian Village', Doctor of Philosophy, University of Canberra, Australia.

STATE, MARKET, AND EQUITY IN HIGHER EDUCATION- A DISCUSSION NOTE

G.D. SHARMA *

The paper is an exploration of ideas of State, Market and Equity in Higher Education from the aspects of state-an entity as formulated under the Constitution of India. It raises fundamental questions for further debate about the role of state in ensuring equality of opportunity to citizens in education as also in other spheres.

Abstract: The note defines the state and market. It brings out people's will to characterize the state, The Indian State is characterized by people's will in the form of the Constitution of India. This among other provisions the Constitution offers equality of opportunities to all citizens in all spheres. Logically, the state is to ensure the equality of opportunities for all citizens in higher education. The note also defines the market. It brings to the fore the change in market form -supply-demand - producer- buyer-trader and entry of Capital into the market. It brings out the slow and steady subversion of the equity principle in higher education by the state from the early 1980s. State causing indirect and direct entry of market in higher education and results thereof. It raises certain questions for further debate.¹

THE CONCEPT OF A STATE

When a group of people living in a spatial territory has collectively decided to choose or identify a person to head the group on broadly agreed norms and procedures for living on the spatial territory. The group agrees to pay from earnings to maintain and protect them from outside territory invasions by animals and man. This was the beginning of the concept of the state which in due course of time took the form of Kingship from the head of the group. When kingship became an institution it also acquired perpetual headship through generations. In the first stage, it was both agreed formation with built-in equity among the population who agreed to choose and identify the head of the group. But when this headship of a group living in a spatial territory became an institution of kingship it acquired perpetuity and divine authority over the people. People then became subjects and the person heading the group became the divine head of that spatial territory. This divine head supported by religious groups became a

law unto herself/himself. There is a story that in West Bengal, a person rearing the goats, was identified as head and became a king and his offspring ruled the people and territory for 200 years. In this concept of state, equity lost the ground and any help to remove any kind of disparity was viewed as charity when it came to economic means, and when it came to reward and punishment it followed the principles as laid down by the divine, which need not be equitable in nature or character. This is because all power is wrested with divine power. It is divine power that decided the law. The enlightened one who treated subjects with equity was viewed as benevolent the other type as a despot. This scenario prevailed for centuries within many spatial territories of continents of this planet earth. Bharat Jumbudweep/ Indian continent had several such territories defined as states. So is true for Europe, Africa, Arab and other territories. Some of them still have the vestige of the first form of the collective agreement and have moved to the kingship form- called by varying names.

In human history, this divine form of Kingship was questioned very recently when the king was forced to sign the charter acceding power to people called Magna Carta. This redefined the state from divine power to a political-administrative order as agreed by the people living in a territory. This assumed the form of a state -presently called a democratic state. People decided how and whom they would like to be ruled through a book called the constitution written or by conventions documented or practiced. In this form of state extent of equity in political, economic, and social administration was decided the agreed upon by the people under the written or unwritten conventions, which also became justiciable. Hence equity in political administration became justiciable as ordained in the Constitution. However, its interpretation depended on the courts of law from the lower to the highest. Change in the Constitution depended on the elected representatives of the people.

DEFINITION OF THE STATE AS PER INTERNATIONAL CONVENTION

Although a state has been defined under international

* President, SEED, Former Professor NIEPA, Former Secretary, UGC.

1. This paper was written for International Conference on Higher Education organized by NIEPA in Collaboration of British Council. Author was not well on that date and hence could not present the same. In this paper a few more questions have been added for debate.

Law 1933. According to international law, a state is typically defined as being based on the 1933 Montevideo Convention, According to Article 1 of the Convention, the state as a person of international law should possess the following qualifications:

1. Permanent population
2. Defined territory
3. Government
4. Capacity to enter into relations with other states.

Such a definition of state does not envisage a democratic state having the built-in concept of equity. The Montevideo Convention has 16 Articles. Article No.4 states that "States are juridically equal, enjoy the same rights, and have equal capacity in their exercise. The rights of each one do not depend upon the power which it possesses to assure its exercise, but upon the simple fact of its existence as a person under international law." Hence equality concept got built into juridical equality, enjoying the same rights, and having equal capacity in their exercise. However, within a state, the concept of equal treatment of people of the territory is even recognized as a state, depended on the will of the people and governing Constitution /convention of the state.

THE MARKET

The origin of the Market is older than the origin of the state. The exchange of goods and services produced by the people took place in a spatial place by groups of producers and buyers initially through the barter system. This is followed by token - a medium of value caused preciousness of items. Later on, it took the form of a Coin often guaranteed by the head of the group or head of state of the territory. There is a very good story about the history of coins. In order to ensure regularity of supply and demand within a territory a system of trading/trader started. The trader stocked supplies where feasible and provided them to those who demanded the stocked goods. Services were individual / group specific hence individuals moved within and outside the territory to match the demand for supply.

The market is basically characterized by the supply and demand of goods and services and exchange value in terms of commercial value, within a specified territory or beyond the territory. The exchange will not take place unless a supplier gets the value of goods or services. .

The market and the state are two distinct entities within a state. The state acquires a character by the way it is formed. Whether formed by the will of people - a democratic state with specific aims object or by the perpetuation of divine rights or by any other means. The market also acquires the character, the way it is operated by sellers and buyers, traders and investors-the capital.

Hence state and equity in higher education, which we are going to discuss here, may not be universally applicable and justiciable, yet it may be universally

accepted as an enlightened form of contract/agreement between people as citizens and the governing system as a state. So are the markets as they may differ from one state to another state.

INDIA AS A STATE

The people of territory Bharat/ India after being subjected for centuries gained independence in 1947 and formed and adopted the Constitution on 26th November 1949 and ratified it by the representative of the people- the Parliament on 26th January 1950. It made India a republic as a written Constitutional democracy. The preamble state that "**WE, THE PEOPLE OF INDIA** having solemnly resolved to constitute India into a **SOVEREIGN SOCIALIST DEMOCRATIC REPUBLIC** and to secure to all its citizens:

JUSTICE, social, economic and political;
LIBERTY of thought, expression, belief, faith and worship;
EQUALITY of status and of opportunity; and to promote among them all
FRATERNITY assuring the dignity of the individual and the unity of the Nation;
 IN OUR CONSTITUENT ASSEMBLY this twenty-sixth day of November, 1949, do **HEREBY ADOPT, ENACT AND GIVE TO OURSELVES THIS CONSTITUTION.**[3]"

Thus the Indian State has acquired a character through the adoption of a written constitution mandating the state to ensure equality of opportunity in all spheres to all the citizens.

STATE AND EQUITY IN EDUCATION AND HIGHER EDUCATION

Hence all the citizens became equal and the concept of a socialist democratic republic envisaged ensuring equity in all spheres so also in education and higher education. In order to address economic, social, and other forms of inequity, it adopted measures to ensure equity in education and higher education. It ensured equal access to higher education irrespective of gender, caste, creed, colour, race, religion, and region.

In order to address old age built-in inequity it adopted the principle of protective discrimination by ensuring a certain number of seats in higher education through a system of reservation, besides scholarships and free ships However, equity in access to higher education on the ground for gender, socially deprived sections and Scheduled Casts and Scheduled tribes demands actions and resources to ensure equity in higher education.

The state facilitated it to happen by setting up colleges and universities in various parts of the country; the State here is referred to as all central, state, and local self-government.

The market also facilitated it through surplus spent by philanthropists to set up educational institutions namely

colleges in different parts of the country. Indian state provided tax cuts for expenditure on education and grants-in-aid for running the institutions to address the issue of equity.

The state and philanthropist (Market surplus) supported system expanded in the form of Government Colleges, Government Aided Colleges, State and Central Universities, and professional education colleges to provide equal opportunities for access to higher education. Fees from receivers of education in both supported systems were kept low so as to ensure equal opportunity irrespective of the income level of citizens. This approach effectively worked in Indian state till the early eighties (1980s).

FAILURE OF STATE, ENTRY, AND CHANGE IN FORM OF MARKET

With the expansion of education at the school level and increased aspiration of people to acquire higher education, there was no commensurate response of the state to ensure equity in higher education by way of providing more institutions in particular in professional education colleges and also in due course general education institutions.:

An indirect entry of the Market in education: Birth of the Coaching Industry: The first sign was observed when the number of aspirants was more than the available seats in professional education colleges. This resulted in the conduct of tests for admission. This gave birth to the coaching industry to help students to compete for limited seats. The coaching industry operated on the principles of market supply and demand. Unwittingly state diluted the principle of equality of opportunities, as testing put an additional barrier to those who could not afford the high fees and living costs of their wards for their coaching. Thus state helped the commercial market to enter the education service indirectly.

Direct Partial Entry of Market in higher education: The Concept of Paid Seat: In the second stage, again owing to the lack of expansion by the state for the provision of required numbers of seats in professional education colleges to meet the aspirations of students, even philanthropists run education institutions converted themselves partially into the market by admitting students on the basis of paid seats. Thus the failure of the state gave rise to the commercial market indirectly through the coaching industry and directly through paid seats in partially supported philanthropist-run professional colleges. However, fees for paid seats were not determined by any of the principles of the market. Hence constitutionally mandated principle of equality of opportunities in higher education was subverted by the state. Because of principles of education for not-for-profit,

price fixation of paid seats was arbitrary - not driven by principles of the market/ unit cost of production.

CHANGES IN MARKET FORM- THE ENTRY OF CAPITALISM

With the introduction of financial institutions and individuals investment, other than stockists and traders. Capital influenced both supply and demand sides in the market by providing credit to producers and suppliers, and consumers of goods and services. So one more layer was added to the Market. Producer of goods and services, trader or stockist or connectors and investors. In Marxian terms - rent seekers. Capital significantly influenced both supply and demand. The capital also attempted to break/ blur the boundaries of the State and Market. The capital invested where returns are very high. One finds in Indian State, the entry of Capital began with health services, and school education services, with full cost plus recovery from patients and students. Surplus/profit to be ploughed back to education it not permitted by the law of land and where permitted profit is invested elsewhere.

ENTRY OF CAPITAL MARKET IN EDUCATION-INDIA

In India, as per law of the land education is to be provided not for profit. However, new institutes-called self-financing institutes-charged full-cost plus from the receiver of education -. Here the market worked, based on the demand and supply of education. Demand by those who could afford full cost + and supply by those who expected to earn to expand their education business. This kind of market did not exist till the late seventies or early eighties, in general, in India. There were, however, exceptions were there were even prior to independence and in post-independence also in the school sector, many (named as public schools) were charging high fees and admitted economically endowed classes. We have examples of Mayo College - it is in fact a school for Maharajas of Rajasthan, Doon Schools, Sanawar, and so on.

However, this new Capital market entered in education (other than partly paid seats) in the early eighties in higher and professional education, where there was scarce supply. This started with the setting up of Medical and Engineering Colleges which were in short supply in the public sector. Here the concern of the market was not equity, but supply and demand and the ability to recover full cost plus from the receiver of education.

In order to overcome the issues of equity some state governments paid tuitions fee for those, students who were admitted by these colleges, as per the policy of protective discrimination. Hence state paid the market for equity only for those who were under the reserved category (AP Government Case).

STATE ACTIVELY PROMOTED MARKET IN

MANAGEMENT OTHER PROFESSIONAL EDUCATION

The regulatory body - All India Council of Technical Education, allowed setting up stand-alone non-degree, but diploma-granting institutions on a self-financing basis. Hence Colleges and diploma-granting institutions in professional education were set up under the principles of market demand and supply. However, the price determination of the service was not based on market principles.

Entry of Market in Public Sector institutions:

The state, on the pretext of a lack of resources for the expansion of education by the state, permitted universities and government colleges to introduce self-financing courses. Thus market entered in public institutions for the select program. Again price determination of seats in these self-financing courses was arbitrary and not based on unit costs. State within its own institutions undermined the constitutionally mandated equality of opportunities for all in higher education. Those who could afford could only get admission to the courses. Some exceptions were made for students falling under protective discrimination.

Entry of Market in legislatively approved institutions - Private Self Financing Universities

As mentioned above Capital is a very powerful entity and has the capacity to break or blur the boundaries between the state and the market. The state resisted for a long to allow private self-financing universities set up through the legislative system. In the Indian States, universities were set up under central/state legislative acts or under the provision of UGC to set up Deemed to be universities with the approval of the government of India. Lawmakers resisted for a long at the central and state governments level private universities. However, under the newfound policy of liberalization, many state governments gave in to the pressure of Capital and passed the Private University Acts under a self-financing system. These Universities grew very fast during the last decade to surpass the number of public sector universities during this period.

Public Sector Oligopoly

Two types of Institutions were set up by the state in the field of technology and management education named IITs and IIMs these being fewer in numbers competition was fierce for limited seats. Hence the tests for admission led to the coaching industry for admission. Thus putting an indirect economic barrier to equal opportunity for access. It worked for a long on nominal tuition costs to students with several public and industry financial support systems. But recently both these types of institutions raised substantial fees and acted as oligopolies. An ecosystem of raising fees whether institutions require it or not has been encouraged. Here determination of fee is bereft of any economic or equity principles. Way out to

meet the market requirement, the capital has come forward to provide loans to students at PLR to access education. However, some of the loan conditions are discouraging for very low economically endowed people.

State, Market, and Equity in Higher Education

Over a period of 75 years the Indian state (this includes state governments), after the early eighties, slowly but steadily gave in to the markets and seriously compromised/subverted the constitutionally mandated responsibility of providing equal opportunities for all for access to higher education. As of today, nearly 27 percent of the eligible age population (18-23 years) had accessed higher education provided under state and market forms. Positions of public and private sector institutions under these forms are as under:

Universities -1113, Central Government -235, State Government-422, and Private -446+10 Private deemed Universities. Colleges- 43,343, Government 21%, Government Aided-13 %, and 65% Private unaided (Source: All India Survey on Higher Education, 2020-21).

State Failed both Public and Market:

The state failed to meet the equity principles for access to higher education. It slowly but steadily allowed the market to enter into the system of higher education to meet the aspirations of students. However, the state did not allow the market to operate on the principles of the market. Thus state did not allow: (a) the public sector to act on the equity principles, (b) the market to operate on the principles of the market. This state's role has very adversely affected the growth, quality, and equity of higher education. Some of the resultant effects is seen in the large number of students going abroad for studies.

Global Education Market: Migration of Students to access Higher Education Abroad

Let us look at the scenario abroad, more particularly in states where Indian students migrated for their studies. There could be several factors for students going abroad for studies, yet the key question is the quality and affordability of education. Recent data says nearly 3.7 Million Indian students are studying abroad during the period 2017-2022. The story of a huge number of medical education students getting stuck in war-torn Ukraine is very fresh in the minds of the people of India. A large number of them are studying in Russia and China also. The USA, and the UK, Australia attract a large number of Indian students. All these countries expanded higher education both under public and private sectors with a respectable and affordable quality for their citizens. The expansion was more than required by the number seeking admission to these institutions. These countries developed

a spare capacity to accommodate migrating students. Migrating students are charged fees different from domestic students. Here the market entered to generate a surplus from migrating students for growth and quality of higher education within their states.

Under the WTO regime, under trade in services, education is one of them. General Agreement in Services, had proposed trade in education services under four modes, namely, commercial presence, consumption abroad, and movement of a natural person, cross border supply. This was a formal global entry of the market in signatory states of WTO. However, this did not move further. But trade is taking place under these four modes in various states, including India without a formal trade agreement and with proper determination of the price of services and obligations.

A few questions:

There are a few questions that we need to answer:

- How a simple act of the state, not to expand education to meet the citizens' aspiration of equal opportunities for higher education transformed the education system in favour of market and inequity?
- Is there a constitutional remedy for the state not adhering to the principles of equality of opportunity for higher education?
- Is it subjective to various interpretations of the principles of equity depending on changes in the political outlook of principles of equity?
- How much loss has, the lack of adherence to

principles of equity, been caused in the development of quality human resources and in turn the development of the country?

- What is the economic, intellectual, and social cost if a large proportion of students migrate for higher education abroad due to quality and affordability?

At the back of all these questions there a fundamental question- in an electoral democratic system. This is:

- Can different parties interpret the concept of equality of opportunity in higher education? Can different parties in power subvert the constitution based on the mandate given by the electorates?
- Is this justifiable to do so without bringing about the changes in basic philosophy and structure of the constitution without following the process of change provided in the constitution?
- Is the mandate given by the electorate superior to mandate enshrined in the constitution?
- Is there a possibility of challenging non adherence of the process of change in court of justice that is meant to protect the tenets of the constitution?
- Is interpretation of constitution by court of justice is also subject to prevailing notions of equality of opportunities as being interpreted under different schools of thoughts of: liberalism, capitalism or socialism?

We need to debate these questions, irrespective of our faith in the goodness of our state- India.

COLLEGE POST — *A Journal of Higher Education*

To reach out to people who matters - advertise in the College Post

ADVERTISEMENT IN COLLEGE POST - TARIFF

Back Cover (Full Page) (Multi-color)	INR 35,000
Inside Cover (Full Page) (Multi-color)	INR 30,000
Full Page (inside pages) (Two-color)	INR 25,000
Half Page (inside pages) (Two-color)	INR 15,000
Quarter Page (inside pages) (Two-color)	INR 7,000

Copy of the College Post with ads remain on website for almost a year. College Post is circulated to all the universities and more than 500 colleges throughout the country.

THE CHALLENGE OF FUNDING AND APPROACH FOR MAKING INDIAN HIGHER EDUCATION A LEADER IN THE WORLD- VISWAGURU

NAVNEET SHARMA AND FURQAN QAMAR *

The paper deals with two important aspects of implementation NEP-2020 namely, funding and making it as world leader. It places facts and views for consideration by policy makers and implementors.

Funding is key issue in the implementation of NEP-2020, which needs attention, that is the budgetary allocation for education, the political economy not only guides the economics of education but also the socio-political deliverance by the education system. The allocation made for education in the Union Budget 2023 reminds a person of these lines from the Samuel Taylor Coleridge poem, "Work without Hope": "Work without Hope draws nectar in a sieve, And Hope without an object cannot live." However, the news headlines shouted out a different story: 'highest ever allocation to education'; '8% steep rise for education'; 'first-ever teacher and education-centric budget', and so on. But even a not-so-serious reading of the Budget and its provisions for education shows what is behind the facade. The provision of Rs.1,12,000 crore as compared to Rs.1,04,000 crore, does not take the education sector any closer to the top 10 list of allocations as a percentage of GDP. Still, an increase of Rs.8,000 crore may be termed as a massive increase. The school sector has been allocated Rs.68,804.85 crores, as against Rs.63,449.37 crore last year, largely due to a fresh allocation of Rs.4,000 crore for the PM SchSchools for Rising India), or PM-SHRI alone. This combined with the newly announced Eklavya model residential schools to be opened in every district of India actually brings down the provisions for already existing schools and their activities, leaving them high and dry to deal with rising prices and the pressure of increasing enrolment in government schools. Government and government-aided schools are still where the deprived and have-nots go to. Out of about 15 lakh schools, 10 lakh schools are owned and managed by the government, employing about 97 lakh teachers and catering to over 26 crore students.

The story about higher education is no different. Allocation for higher education has also been enhanced from Rs.40,828 crore in 2022-23 to Rs.44,094 crore, with

allocations to autonomous bodies (such as the University Grants Commission, All India Council for Technical Education, central universities, Indian Institutes of Technology, Indian Institutes of Science Education and Research, Indian Institutes of Information Technology, National Institutes of Technology, Schools of Planning and Architecture) having gone up by 13.60% on average. Of these, the central universities are the biggest beneficiary (22.39% increase). Total budgetary support to the Indian Institutes of Management is down from ₹Rs.653.92 crore in 2022-23 to Rs.300 crore this year. A bulk of the allocation is meant for the repayment of the Higher Education Funding/Financing Agency (HEFA) loan and interests thereon, leaving only Rs.15.17 crore in 2023-24. Such a drastic reduction might have caused unhappiness but that seemed inevitable as these institutes have raised their fees to justify public funding. We do not know whether this has impacted equity on their campuses. Many others may be genuinely disappointed too.

The allocation made for education in the Union Budget 2023 reminds a person of these lines from the Samuel Taylor Coleridge poem, "Work without Hope": "Work without Hope draws nectar in a sieve, And Hope without an object cannot live."

This year's Budget makes no provision for HEFA, which could mean no new loans for infrastructure development in the centrally funded institutions. The allocation for world class universities has been slashed from Rs.1,700 crore to Rs.1,500 crore. Also reduced to half is the Prime Minister's Girls' hostels allocation.

The interest subsidy and contribution for guarantee funds, scholarships for college and university students and the special scholarship for Jammu and Kashmir have now been merged into a new scheme, the Pradhan Mantri Uchchatar Shiksha Protsahan (PM-USP) Yojana. Thus, the allocation for the three schemes has been slashed from Rs.1,878 crore to Rs.1,554 crore. Budgetary allocations for research, innovation, incubation and startups have either been slashed or done away with. The Startup India initiative in higher educational institutions has a reduction from Rs.60 crore in 2022-23 to Rs.11.21 crore, whereas the provisions for the national initiative for design innovation are down from Rs.17.80 crore to Rs.10 crore. For IMPacting Research, INnovation and Technology (IMPRINT) and the Scheme for Promotion of Academic and Research Collaboration (SPARC), the

*Sharma teaches in the Dept of Education, Central University of Himachal Pradesh, Dharamshala; Qamar is professor, Jamia Millia Islamia, New Delhi, and former advisor for education in the Planning Commission

allocations have been reduced drastically. The Budget makes no provision for Impactful Policy Research in Social Sciences (IMPRESS). All these three schemes were launched with fanfare. While the provisions for the National Mission on Education through Information and Communication Technology (NMEICT) have been unaltered at Rs.400 crore, no money has been provided for virtual classrooms and massive open online courses (MOOCs), e-ShodhSindhu, the national digital library and the national academic depository. The Budget had made the grand announcement of opening 'three' centres of excellence for artificial intelligence in the top educational institutions. It also promised a policy on national data governance. It is hoped that these do not overwhelm the education sector. The proposed National Research Foundation has been allotted Rs.2,000 crore through the Department of Science and Technology, but this awaits approval from the Union cabinet.

Thus, the overall increase in allocation to higher education is due to a reduction in recoveries from Rs.14,250 crore in 2022-23 to Rs.6,000 crore. In reality, the allocation for higher education has declined from Rs. 55,078 crore in 2022-23 to Rs.50,094 crore in 2023-24. Going by the Economic Survey 2023, the combined expenditure on education by the Centre and States (as a percentage of GDP), has remained stagnant at 2.9% during 2019-20 to 2022-23 (BE). As a percentage of total government expenditure, it slid from 10.7% in 2019-20 to 9.5% in 2022-23 (BE), while the share of education in social services nosedived from 42.5% to 35.5% during the same period

The issue is how the higher education system will face challenges of enhancing enrollment and increasing quality of higher education with this meagre resources. The system is looking for bit of promised 20 per cent allocation on higher education. Will the state able to meet the promise?

Approach: Yet there is another issue of expecting Indian higher education be a leader in the world- Vishwaguru with this meagre resources. One of ways attempted to have been sought is inviting foreign higher education institutions to open campus in India. It is reported that UGC has written to many leading universities in the world for setting up campus in India. But response is not very warm. Yet UGC has come out with guidelines for encouraging foreign education providers for setting up campus in India. From this point scene emerges is like this:

The new education policy (NEP 2020) seems to believe colonial mindset has been holding India back in its path of progress and seeks to reverse this onslaught on Indian minds and envisions producing 'Sanskritised' people, irrespective of the colour of their skin but with due respect to caste and gender in hushed tones.

Global economic compulsion, however, compelled the policy to pitch for the internationalisation of higher education. It is to this end the nation is now roping Foreign Higher Education Provider (FHEP) Promoted as a win-win situation, it is expected to provide Indians 'foreign' degrees with 'quality' education at a lower price and they will not have to travel across seven seas in search of the same.

The higher education system in India is quite heterogeneous already and adding yet another layer of heterogeneity must not be an issue. The worry is that it must not absolve the nation from the responsibility of improving the quality of Domestic Higher Education Providers (DHEPs) on the pretext that the same has been outsourced to FHEPs.

What possible justification would be there to the question of afresh producing 'Macaulay'mindset under the more 'nationalistic' regime? Maybe, these FHEPs may be required to alter their curriculum and pedagogy to suit and serve the cause of promoting the Indian knowledge system. But then, how would they be able to show that their courses and programmes are the same as they offer on their main campuses?

Reservation in admission and appointment would however pose no problem as they are not applicable in the case of the private DHEPs. Accreditation and ranking would also pose no difficulty as FHEPs would be governed by their domestic requirements. The regulation seems susceptible to making these institutions new age agraharas for the ones who could afford to rise beyond and above regulations. Students do attach value to degrees from a world-class university. Their decisions are seriously constrained by their access and affordability. Only those who could afford higher fees will be able to avail of FHEPs. But would parents want to deny their offspring the cross-cultural experiences, global exposure, career prospects, income opportunities and possibilities of settling abroad by going abroad for studies?

With regard to subject discipline many disciplines like Indology, Indian Philosophy, and classical languages could also be missing under the new dispensation and may thus constrain their nationalistic appeal to the masses as dreamt by the this government.

FHEP may want to open their campuses in Metropolitan cities only. This would only create pocket burrows of knowledge hubs in the country. It may also lead to the 'quality' shift of teachers from many DHEPs who are stuck in remote areas.

The FHEPs may not be able to spare foreign faculty and may have to resort to local recruitment. Chances are that they would prefer the indigenous teachers. Given the guarantee of freedom in the appointment of faculty, it may be assumed that would be insulated from political and bureaucratic interference. The fetish for 'white' teachers and 'white' degrees does not go well with the

'swadeshi' plank of the present policy planners. Are we going to be a vishwaguru with the help of FHIEP? Shouldn't India be imagining the locally born, bred and nurtured talents to becoming vishwaguru?

(Note: The contents in this piece has appeared in parts and pieces with various titles, Nector in Sieve, Disdain for Knowledge, Vishwagurudom, via Macaulay, and Budget 2023 is a case of education taking a hit, in Deccan Herald and The Hindu).

...contd. from page 1

The Liberalization - opening door for Foreign higher education institutions in India: The following was attempted in the mid-nineties when there was pressure for allowing foreign higher education Institutions in India, A committee was set up to frame guidelines for the promotion of Indian education abroad and the regulation of foreign universities in India. The focus here was making quality higher education Institutions of Indiago abroad and allowing quality foreignhigher education institutions to come to India. Therefore, it proposed to allow entry of institutions into India only to those figuring in the list of top 200 universities in THE and QS raking systems. However, this committee report did not operationalize due to several reasons. Interestingly, the same provision of permitting foreign institutions ranked within the 200 ranks of THE and QS can set up a campus in India is also mentioned in the NEP 2020.

Education Exports to India: As there were concerted efforts by foreign education providers to export education to India first by enrolling Indian Students in their counties- consumption abroad, and partly by opening some institutions in India. Holding education fairs by Foreign Higher Education Institutes in India (FHEI) was very common. This paid dividends to them as the number of students going abroad from India steadily increased. These countries created enough capacity for their students and had spare seats to market these abroad. India also held fairs abroad but the response was not of the same tune as the foreign education providers got in India.

Lack of Expansion of Professional Education in India: In contrast to this, India did not expand to meet the aspirations of students, particularly in professional subjects. This restricted supply in public sector institutions gave rise to the opening of institutions in the private sector. Here also owing to several restrictions and shortage of supply and fees being high, students went abroad to study to meet their aspirations. This is despite to separate risks jobs, resources, and emotions- owing to separation from their homes.

Trade in Education Services: Under the General Agreement in Services, (GATS) of the WTO (1995) regime a great deal of discussion took place about education services under four modes, namely, Consumption Abroad, Commercial Presence, Movement of Natural Persons, and Cross Border Supply. Proposals made by developed and developing countries as request offers, India also made.

Education Services. Under the GATS countries would have been required to mutually agree upon the system of trade under WTO legal framework and mutual recognition degrees by India of the foreign universities and Indian university degrees by foreign universities agreeing to trade in India. But, developed countries pulled out the concept of education services. Thus all request offers went into cold storage. The USA was the first country to withdraw request offers under GATS.

The UGC Guidelines: In this background let us look into the recent announcement of the UGC for setting up foreign Universities' campuses in India. It is not very clear whether it falls under the purview of the UGC Act 1956 amended from time to time. The formation of a committee, as mentioned above, was within the purview of the MHRD, Government of India which could do so with an executive order/ordinance or bringing an amendment to the UGC Act of 1956. That has not happened. Therefore, the aspects of these guidelines are the subject of a legal challenge.

Having said so, even if these guidelines are put into operation, it attempts to dilute the very aspect of quality by allowing institutions ranked below the list of two hundred top institutions in the THE or QS ranking. Even it goes to the extent of doing away with any kind of ranking for reputed institutions. Without ensuring any reciprocity in terms of Indian Institutions going abroad or mutual recognition of degrees. It also does not fall under the principles/legal framework of trade in education (as proposed under GATS)

The guidelines propose to give autonomy to institutions concerning admission, contents of courses, recruitment of teachers, and finances related to these aspects. So much so it considers education at par with the commercial establishment without being registered under the Companies Act (as joint with Indian or solo) against the law of land and provisions made in NEP 2020. If such foreign institutes wind up owing to losses leaving students and teachers in the lurch there is no scope built into legal recourse, except for aspects of contents affecting the security of the country.

These guidelines besides being discriminatory vis a-vis Indian Universities are based on a presumption that such institutions will act as catalysts to cause changes in the quality of higher education by providing quality education to a minuscule number of students and making Indian universities follow their lead. A psyche of "the white man's burden!"

NEUROEDUCATION - WHAT NEUROSCIENCE TELLS US ABOUT LEARNING AND EDUCATION

ER. RAHUL AGARWAL *

The article highlights the development of neuroscience in education. It brings out aspects of how this new knowledge can be used in education.

Pedagogy is the study of the teaching and learning process. It refers to methods of teaching - how teachers teach, and aims to make teaching and learning more effective.

Psychology studies the human mind through observation of behavioural and mental processes. Neuroscience studies the human brain through observation of the structure and function of the nervous system. It looks at the biological processes underlying the behavioural and mental processes studied in psychology.

As learning and education is directly linked with human brain, pedagogy has a close linkage with psychology and now neuroscience as well.

Neuroeducation combines pedagogy with neuroscience and psychology. It helps us understand how the brain processes information into learning. It also helps in knowing more about what it takes for students' brains to be engaged, responsive, and alert.

Here are some learnings about brain provided by Neuroscience:

BRAIN COMPLEXITY

It is said that the human brain is the most complicated object in the known universe. It has 100 billion neurons, each neuron potentially connected to 10 thousand other neurons.

WHAT ARE NEURONS?

Neurons are the fundamental units of the brain and nervous system. These are cells that act as sensors as well as motors (actuators). As sensors these are responsible for receiving sensory input from the external world. As actuators they send motor commands to our muscles.

For example, when the hand touches a hot object, the signal goes to the 'sensor' neurons which in turn passes on this 'threat' information to the 'actuator' neuron that instructs the muscles to withdraw immediately. This communication of 'threat' from sensor to actuator neuron happens via neurotransmitters.

NEUROTRANSMITTERS

Neurotransmitters are chemicals present in neurons which get released by sensor neurons. Absorption of these neurotransmitters by receptor leads to action by the actuator neuron. The action can be instructions to muscles or it could cause some feelings which the person gets. For example, tasty food may give a feeling of pleasure. From learning perspective, this helps in understanding why students behave in certain way. The behaviour of students depends on the emotions they get.

As learning and education is directly linked with human brain, pedagogy has a close linkage with psychology and now neuroscience as well.

FEEL-GOOD NEUROTRANSMITTERS

Dopamine is a neurotransmitter that is signal for pleasure. Serotonin is a chemical of self-pride and makes one feel good when in a position of assertion. Oxytocin is released when one gets assurance of social setup. Endorphin is chemical that enables extreme effort by

masking pain

The group of these 4 Neurotransmitters - Dopamine, Serotonin, Oxytocin & Endorphin is also referred to as Happiness Chemicals or Feel-good Neurotransmitters.

NEURAL PATHWAYS - BASIS OF OUR LEARNING

A neural pathway is a series of connected neurons that send information from one part of the brain to another through electrochemical signals. A new neural pathway forms when you encounter a piece of information for the first time. For example, experiencing the shape, colour, smell, taste of a new fruit, say dragon fruit will create new pathway. Your brain has now attached meaning to that specific pattern. The more you think about the dragon fruit, the more the pathway is used and the more dominant it becomes.

LEARNING NEW SKILL

Let us consider that a person wants to learn how to take catch in cricket.

The fielder needs to make an extremely quick assessment of the direction, speed and height of the ball's flight, and the muscles of the body need to be aligned accordingly. The brain controls everything by activating specific neural pathways for each and every muscle movement. If it's your first time doing it, you don't yet have a pathway for that movement in your brain and you

* Head of Technology and Operations at 3 SR Consultancy, Gurugram

need to create it. The brain is like a forest full of trees and dense foliage with no clear pathway between point A and point B. As you learn the mechanics of taking the 'catch', you create a trail through the forest. Now you can catch a ball flight because you've created that pathway in your brain. With practice, this 'catch' pathway in your brain gets strengthened. Ultimately, with more practice, the pathway becomes like a highway making you an expert

NEUROPLASTICITY - UN-LEARN AND RE-LEARN

Like a physical pathway on the ground, if you keep going over the same route, it becomes a habit. Similar to real road system, the brain can be changed and adapted. This flexibility of the brain is called Neuroplasticity. Neuroplasticity enables you to acquire new skills and change habits through conscious effort.

NEUROGENESIS

The brain can generate new neurons through a process called Neurogenesis (it has stem cells in its hippocampus), which is important for learning and spatial memory. New neurons are produced throughout adulthood, but most of them do not survive if not used in some learning - "Use it or throw it"

THREAT AND REWARDS

The brain exists for our survival. It constantly scans the environment to identify and respond to threats and opportunities, seeking ways to minimize threats and maximize rewards. Understanding how the brain's threat and reward networks leads us to move toward some things and away from others is the key to applying neuroscience in education.

Social rewards and threats can be very powerful. The brain perceives threats to status and social standing - social injury - similarly to the way it perceives physical injury and pain.

Psychological and social factors like recognition, appreciation, calm environment, supportive friends, friendly teachers, mastery of skills, novelty, and so forth, are treated like rewards by brain. Rewards lead to release of neurotransmitter dopamine, giving pleasure.

WITHDRAWAL VS ENGAGEMENT

In the context of a class/educational course, threat will induce withdrawal or disengagement with the class, causing low performance. On the other hand, reward leads to better engagement and enhanced performance.

NEUROMYTH

A neuromyth is a commonly-held false belief about how the mind and brain function. The term refers to the translation of scientific findings into misinformation regarding education. Once these myths take hold in the

public consciousness, it's often difficult for people to separate brain facts from fiction. The prevalence of the neuromyths in teachers has potential to seriously impact student learning. Some of the prevalent neuromyths are listed below:

1. **Being Left brained or Right Brained makes a difference to one's learning**

The left and right hemispheres of the brain work together. There is no evidence that people's learning differs in important ways based on one hemisphere being more dominant than the other.

2. **Brain development has finished by the time children reach puberty.**

Brain does not keep getting bigger with age and reaches its largest physical size around 11 (for girls) and around 14 (for boys). But, the internal structure of brain continues developing and maturing until mid- to late-20s. Brain's limbic system develops years ahead of the prefrontal cortex. The limbic system is associated with emotions, impulses, aggression and instinctive behaviour. Prefrontal cortex, the brain's rational part, is one of the last brain regions to mature and its development continues until age 25 or so. It is the area responsible for planning, prioritizing and controlling impulses. In teens brains, connections between the emotional part of the brain and the decision-making centre are still developing. This is the reason for teens being more emotionally charged. The teen brain is ready to learn and adapt.

3. **We only use 10% of our brains**

This neuromyth is further cemented by Hollywood Movies like "Lucy" and "Limitless". The fact is that a healthy person uses 100% of his or her brain. The myth probably comes from William James, widely considered as the father of psychology, who wrote that it's unlikely most people would ever reach 10% of their potential. Somehow, this became 10% of their brain. However, brain imaging hasn't shown any inactive areas in a healthy brain.

People love this myth because it makes them feel good. It means that you may have some huge amount of untapped potential which could unlock should you use the right techniques or tools. Marketers also love this myth because it helps them sell dubious products that are supposed to let you access the remaining 90% of your brain capacity. First, there's lots of evidence showing that whatever an individual is doing-even if they're told to just lay down in the scanner and not do anything-pretty much all of the areas of the brain are active. Second, it makes no evolutionary sense to have an organ that is 90% unused. Especially when it comes to the brain, which uses a staggering 20% of the body's energy, despite being only 2% of its weight.

4. Learning is due to the addition of new cells to the brain

It is true that Neurogenesis adds new neurons to brain and this process continues even in adulthood. But learning arises from changes in the connections between brain cells - development of neural pathways. Hence mere addition of new cells doesn't lead to learning automatically. In fact, most of the new neurons die in absence of any use - following the principle of "use it or throw it"

5. Mental capacity is something one is born with and cannot be changed

Mental abilities do have a genetic component. But they are also heavily influenced by environmental factors. Also rely on adequate experience in order to develop. This is a misconception that the brain is static, unchanging, and set before you start school. Our brains grow, change, and adapt at all times in our lives (Neuroplasticity).

6. When we sleep, the brain shuts down

Patterns of brain activity shift when we go to sleep, but the brain is active 24 hours a day, whether we are sleeping or awake. While sleeping, brain undertakes memory consolidation

7. Brain can efficiently multitask handling multiple challenging tasks

The brain can't attend to two or more attention-rich stimuli simultaneously. We pay continuous partial attention in an effort not to miss anything. It is an always-on, anywhere, anytime, anyplace behaviour that involves an artificial sense of constant crisis. Simply put, multitasking doesn't work.

8. Forgetting part of memory is an impediment to learning

Forgetting is a perfectly normal part of memory. In fact, it's a necessary part of memory. We make memories all the time - while attending an educational course, the process of committing something to memory is a very deliberate & intentional process. But most of the time, the process of memory happens just automatically - whatever you attend to, you form some representation of what's happened to you. Over time, the pruning system of brain clears memories that are not refreshed or are not associated with some events that had high emotional value, giving room for new memories. Normal brain development doesn't just involve growth, but also the selective loss of brain cells and connections that are not being used (also known as pruning).

This is a sample list of neuromyths out of hundreds. As neuroscience throws newer lights to brain functions, more neuromyths will get identified. Educators need to

be aware of these neuromyths and correct their beliefs accordingly.

NEUROTECHNOLOGY

Neurotechnology is technology (methods, devices, instruments, etc) that enables a direct connection with the nervous system to monitor or modulate neural activity. This can help in finding out what is happening in one's brain or to control external device (like prosthetic arm) through brain.

Here we cover few of these concepts and technologies:

FMRI (FUNCTIONAL MAGNETIC RESONANCE IMAGING)

fMRI is a Non-invasive brain imaging technology that detects brain activity by measuring changes in blood flow. An fMRI can reveal what part of the brain is active during specific functions, such as lifting your arm or even just thinking about something. Researchers and physicians can use this information to better understand, diagnose, monitor, and treat various conditions. It can potentially even "see" your thoughts and feelings.

BRAIN WAVES

Brain cells communicate via electrical impulses and are active all the time, even during sleep. This activity shows up as waves called Brain Waves, which are oscillating electrical voltages measuring just a few millionths of a volt. The nature of Brain Waves depends on the brain activity at the moment. There are five widely recognized brain waves associated with different brain conditions.

BRAIN-COMPUTER INTERFACE (BCI)

BCI is a direct communication pathway between the brain's electrical activity and an external device, like a computer or robotic limb. BCIs are often directed at researching, mapping, assisting, augmenting, or repairing human cognitive or sensory-motor functions. Implementations of BCIs range from non-invasive and partially invasive to invasive, based on how close electrodes get to brain tissue.

EEG

An electroencephalogram (EEG) is a non-invasive BCI technique. In this test, brain's electrical activity is measured using small electrodes attached to the scalp. The test captures Brain Waves that show up as wavy lines on an EEG recording. The EEG recordings can be analysed to get an understanding of what is happening in the brain.

EDUCATIONAL NEUROTECHNOLOGY

Educational Neurotechnology is application of neurotechnology in the field of education.

WEARABLE DEVICES TO MONITOR STUDENT ATTENTION

It is a cap like EEG device that has small sensors placed on brain of students. This device provides real time data about what is happening in student's brain. We can view even during the lecture what portions of brain are active, which student is concentrating and which student is not.

EEG BASED LEARNING ENVIRONMENT

An EEG based learning environment. In this, the neuro-data captured through EEG device during a test could reveal whether a student is finding an assignment challenging. This can be successfully used to predict workload in students solving arithmetic exercises with increasing difficulty. The system adapts the difficulty of the presented exercises to hold the learner's workload level in an optimal range. This is in contrast to an error-adaptive learning environment, where the system adapts based on the student performance.

OPTOGENETICS

It is a biological technique that combines the powers of light & genetics. Neuroscience has shown that the memories of an event are more permanent when combined with a novelty. Researchers at Stanford University have found that Optogenetics can be used to excite neurons to bring novelty effect using light. This results into much longer memory.

BRAIN-BASED LEARNING - NEUROSCIENCE BASED EDUCATION MODEL

Brain-based learning is a concept that uses neuroscience to create an informed curriculum and lesson design. It refers to teaching methods, less on designs, and school programs that are based on the latest scientific research about how the brain learns, including such factors as cognitive development-how students learn differently as they age, grow, and mature socially, emotionally, and

cognitively. Based on this concept, a course should take the following under consideration:

- o Health and Exercise - The more active and engaged students are physically, the better their learning outcomes.
- o Positive Emotions - The happier students are, the more they are willing to learn and think effectively.
- o Group Work - Group Work helps students retain information they may not have accepted or understood from the teacher.
- o Peer Teaching - When students teach materials to their peers, it helps them retain that same information.
- o Practice - Learning through repetition and trial and error is more effective than simple memorization.
- o Limited Lectures - Making lessons largely discussion-based promotes student learning.
- o Meaningful Information - Students are more likely to remember information if they are engaged with the lesson.
- o Written and Verbal Information - Having students both write and verbalize information will help move it from their short-term memory to their long-term memory.
- o Stimulation - Catching students' attention through humour, movement, or games stimulates their brains' emotional centre.
- o Less Stress - In a calm classroom environment, students have the opportunity to perform at higher levels.

AT THE END

Brain is central to Education and Learning. It is the most complex system in the world. As neuroscience is evolving and trying to solve the mysteries of brain, it is providing inputs which are crucial for design of education and learning programs. Use of neurotechnology will open up new possibilities. Neuroeducation is poised for an exciting journey.

**Readers are encouraged to send their comments,
opinions, and alternative views on any of the issues
published in this issue for consideration by the
College Post.**

Editor

APPLICATIONS OF ARTIFICIAL INTELLIGENCE FOR TEACHING AND LEARNING

DR. RAMESH CHANDRA SHARMA *

This brief note gives lists of AI software which can be used for several academic activities in higher education.

Some of the teaching activities which we do can be listed as below:

- Lecturing
- Facilitating discussions
- Conducting group activities
- Demonstrating
- Providing feedback
- Assigning and grading assignments
- Conducting assessments and evaluations
- Planning and designing less on plans and curricula
- Providing one-on-one instruction and tutoring
- Creating and using visual aids and instructional technology

Learning activities involve:

- Active reading and note-taking
- Participating in discussions and debates
- Completing assignments and projects
- Conducting research
- Collaborating with peers
- Reflecting on learning experiences
- Engaging in self-directed learning
- Practicing and applying new skills and knowledge
- Using instructional technology and digital tools
- Participating in experiential and hands-on learning activities.

Let us see how we can enhance the effectiveness of these activities using Artificial Intelligence empowered tools for teaching and learning.

For Lecturing and facilitating discussions:

- Nearpod (<https://nearpod.com/>) - AI-powered presentation and interactive learning tool
- Classcraft(<https://www.classcraft.com/>)- AI-powered classroom management and gamification tool
- Mentimeter (<https://www.mentimeter.com/>) - AI-powered audience engagement tool, I have been using it for the past many years.

Conducting group activities

- Kahoot! (<https://kahoot.com/>)-AI-powered game-based learning platform.

- Quizlet (<https://quizlet.com/>)-AI-powered study tool for creating and sharing digital flashcards, quizzes, and games

For Demonstrating concepts

- Explain Everything (<https://explaineverything.com/>) - AI-powered interactive white board and screen casting tool
- Camtasia (<https://www.techsmith.com/video-editor.html>) - AI-powered video editing and screen recording tool

Turnitin (<https://www.turnitin.com/>)-AI-powered plagiarism detection and writing feedback tool. Recently Turnitin has enabled it for ChatGPT detection, read more here <https://www.turnitin.com/blog/sneak-preview-of-turnitins-ai-writing-and-chatgpt-detection-capability>

Providing feedback

- Turnitin (<https://www.turnitin.com/>)-AI-powered plagiarism detection and writing feedback tool. Recently Turnitin has enabled it for ChatGPT detection, read more here <https://www.turnitin.com/blog/sneak-preview-of-turnitins-ai-writing-and-chatgpt-detection-capability>

- Grammarly (<https://www.grammarly.com/>)- AI-powered writing assistant for checking grammar, spelling, and punctuation errors. From grammar and spelling to style and tone, Grammarly's suggestions are comprehensive, helping you communicate effectively and as you intend.

Assigning and grading assignments

- Gradescope (<https://www.gradescope.com/>)- AI-powered grading tool for assignments, quizzes, and exams. Immediate feedback is a vital part of the learning process.
- Socrative gives you just that for the classroom or office - an efficient way to monitor and evaluate learning that saves time for educators while delivering fun and engaging interactions for learners. <https://www.socrative.com/>
- Socrative I used for quite quizzes on classes and for them was really attractive the "Spacrace" module.

Conducting assessments and evaluations

- Coursera (<https://www.coursera.org/>)- AI-powered online learning platform with assessments and evaluations for courses and certifications
- ProctorU (<https://www.proctoru.com/>)- AI-powered online proctoring and exam monitoring tool

* Professor of Technology, AUD, New Delhi

Planning and designing lesson plans and curricula

- SmartSparrow (<https://www.smartsparrow.com/>) -AI-powered adaptive learning platform for designing and delivering personalized learning experiences
- Edpuzzle (<https://edpuzzle.com/>)-AI-powered video tool for creating and sharing interactive video lessons

Providing one-on-one instruction and tutoring

- Wyzant (<https://www.wyzant.com/>)-AI-powered online tutoring platform for connecting with tutors in various subjects
- SquirrelAI (<https://en.squirrelai.com/>)-AI-powered adaptive tutoring system for personalized learning<http://squirrelai.com/>
- Adaptive learning is an education technology that can respond to a student's interactions in real-time by automatically providing the student with individual support.

Creating and using visual aids and instructional technology

- Canva (<https://www.canva.com/>)- AI-powered design tool for creating visual aids and graphics. I have been using Canva for a long time and it says =use it to design anything
- Adobe Creative Cloud (<https://www.adobe.com/creativecloud.html>)-AI-powered creative software suite for designing and creating visual aids and multimedia content

Now let us see the power of Google

- <https://ai.google/about/>
- <https://www.tensorflow.org/js>, it has wonderful applications: like pose detection and many more let us see few of them.

Try this <https://holobooth.flutter.dev/#/>

activate your camera

- select your avatar
- select a scene
- do not miss the back ground music
- choose your prop
- your video is ready
- and here is pose detection <https://github.com/tensorflow/tfjs-models/tree/master/pose-detection> activate your camera it captures our movements hope you will find these tools useful for your work.

- **Otter.ai (<https://otter.ai/>)** - Otter.ai is an AI-powered transcription tool that can transcribe meetings, interviews, and other audio content in real-time. It can also identify different speakers, summarize conversations, and generate searchable transcripts.

- **Calendly (<https://calendly.com/>)** - Calendly is an AI-powered scheduling tool that helps users schedule meetings and appointments without the back-and-forth emails. It can integrate with Google, Outlook, and other calendars to find the best available time slots.

- **Brainly (<https://brainly.com/>)**- Brainly is an AI-powered social learning platform that connects students and teachers to help them solve homework problems. It uses machine learning to match students with relevant questions and provide instant answers.

- **<https://www.roamaround.io/>**- This is a travel planner built using ChatGPT3. Enter the city and the number of days, and it gives you an itinerary within 40 seconds. Try it--it is pretty amazing.

About Cover Page

QUANTUM COMPUTERS

Quantum computing is an area of computer science focused on the development of technologies based on the principles of quantum theory. Quantum computing uses the unique behaviors of quantum physics to solve problems that are too complex for classical computing.

Source: Google.com

THE UNESCO QUICK START GUIDE ON CHAT GPT-APPLICATION IN HIGHER EDUCATION

The UNESCO has issued a Quick Start Guide on use of Chat GPT. College Post is reproducing relevant portions of its application in Higher Education

Note:- ChatGPT, an Artificial Intelligence (AI) tool that has taken the world by storm, reaching 100 million users just two months after being launched. The Quick Start Guide provides an overview of how ChatGPT works and explains how it can be used in higher education.

The Quick Start Guide raises some of the main challenges and ethical implications of AI in higher education and offers practical steps that higher education institutions can take. This Quick Start Guide was published in April 2023. Artificial Intelligence (AI) is a rapidly developing field. This guide is based on GPT-3.5, the latest free version of ChatGPT available at the time of writing. As well as dynamic changes in technology, the ethical implications of ChatGPT and other forms of AI are also swiftly advancing. Readers are advised to constantly check reliable sources for the latest news and updates.

APPLICATIONS OF CHATGPT IN HIGHER EDUCATION

Although still a recent development, ChatGPT has already been applied widely in different functions of higher education. This section outlines some possible uses of ChatGPT in teaching and learning, research, administration, and community engagement.

TEACHING AND LEARNING

Due to its ability to generate and assess information, ChatGPT can play a range of roles in teaching and learning processes. Together with other forms of AI, ChatGPT could improve the process and experience of learning for students. To do this, ChatGPT can be used as a standalone tool, or it can be integrated into other systems and platforms used by HEIs. ChatGPT can perform many simple or technical tasks (e.g., basic research, calculations, proofing) and the examples outlined in the table show how ChatGPT could be incorporated and used to augment teaching and learning.

RESEARCH

ChatGPT can be used by researchers at different stages of the research process. This is summarized in figure 3. ChatGPT has also been trialled in other processes relating to research, such as completing the technical parts of research grant applications (e.g., communications plans).

ChatGPT has also been used to generate entire academic journal articles, opening an ethical debate about whether a non-human author can be considered a

contributor to the creation of knowledge. At the time of writing this Quick Start Guide, no consensus had been reached.

Some publishers have argued that ChatGPT cannot take responsibility for the Role.

DESCRIPTION

Example of implementation
Possibility engine
AI generates alternative ways of expressing an idea
Students write queries in ChatGPT and use the Regenerate response function to examine alternative responses.

Socratic opponent
AI acts as an opponent to develop and argument
Students enter prompts into ChatGPT following the structure of a conversation or debate.

Teachers can ask students to use ChatGPT to prepare for discussions.

Collaboration coach
AI helps groups to research and solve problems together
Working in groups, students use ChatGPT to find out information to complete tasks and assignments.

Guide on the side
AI acts as a guide to navigate physical and conceptual spaces
Teachers use ChatGPT to generate content for classes/courses (e.g., discussion questions) and advice on how to support students in learning specific concepts.

Personal tutor: AI tutors each student and gives immediate feedback on progress
ChatGPT provides personalized feedback to students based on information provided by students or teachers (e.g., test scores).

Co-designer: AI assists throughout the design process.
Teachers ask ChatGPT for ideas about designing or updating a curriculum (e.g., rubrics for assessment) and/or focus on specific goals (e.g., how to make the curriculum more accessible).

Exploratorium: AI provides tools to play with, explore and interpret data.
Teachers provide basic information to students who write different queries in ChatGPT to find out more.

CHATGPT CAN BE USED TO SUPPORT LANGUAGE LEARNING

Study buddy
AI helps the student reflect on learning material. Students explain their current level of understanding to ChatGPT and ask for ways to help them study the material.

CHATGPT COULD ALSO BE USED TO HELP STUDENTS PREPARE FOR OTHER TASKS (E.G., JOB INTERVIEWS).

MotivatorAI: offers games and challenges to extend learning. Teachers or students ask ChatGPT for ideas about how to extend students' learning after providing a summary of the current level of knowledge (e.g., quizzes, exercises).

Dynamic assessorAI provides educators with a profile of each student's current knowledge

Students interact with ChatGPT in a tutorial-type dialogue and then ask ChatGPT to produce a summary of their current state of knowledge to share with their teacher/for assessment.

ADMINISTRATION

ChatGPT's main role in supporting higher education institutions' (HEI) administration has been in improving the efficiency of processes. In this way, ChatGPT can reduce human administrative time spent on tasks such as: Responding to queries from applicants (potential students)

Helping students to sign up for courses, complete course requirements, check administrative information (e.g., exam timetables, location of classes) Finding news, resources, and other Information. Sending reminders or notifications Translation of information for international students/staff With the use of ChatGPT, administrative services can be available 24/7 and can be supported across different platforms. As well as integration into websites, it can also be used with social media, messaging services and learning management systems/ virtual campuses.

SOME CONCERNS

LACK OF REGULATION

ChatGPT is not currently regulated, a concern addressed by the UNESCO. The extremely rapid development of ChatGPT has caused apprehension for many, leading a group of over 1,000 academics and private sector leaders to publish an open letter calling for a pause on the development of training powerful AI systems. This cessation would allow time for potential risks to be investigated and better understood and for shared protocols to be developed.

PRIVACY CONCERNS

In April 2023, Italy became the first country to block ChatGPT due to privacy related concerns. The country's data protection authority said that there was no legal basis for the collection and storage of personal data used to

train ChatGPT. The authority also raised ethical concerns around the tool's inability to determine a user's age, meaning minors may be exposed to age-inappropriate responses. This example highlights wider issues relating to what data is being collected, by whom, and how it is applied in AI.

COGNITIVE BIAS

It is important to note that ChatGPT is not governed by ethical principles and cannot distinguish between right and wrong, true and false. This tool only collects information from the databases and texts it processes on the internet, so it also learns any cognitive bias found in that information. It is therefore essential to critically analyse the results it provides and compare them with other sources of information.

GENDER AND DIVERSITY

Concerns about gender and other forms of discrimination are not unique to ChatGPT but to all forms of AI. On the one hand, this reflects the lack of female participation in subjects related to AI and in research/development on AI and on the other hand, the power of generative AI to produce and disseminate content that discriminates or reinforces gendered and other stereotypes.

ACCESSIBILITY

There are two main concerns around the accessibility of ChatGPT. The first is the lack of availability of the tool in some countries due to government regulations, censorship, or other restrictions on the internet. The second concern relates to broader issues of access and equity in terms of the uneven distribution of internet availability, cost and speed. In connection, teaching and research/development on AI has also not been evenly spread around the world, with some regions far less likely to have been able to develop knowledge or resources on this topic.

COMMERCIALIZATION

ChatGPT was created by a private company, OpenAI. Whilst the company has pledged to maintain a free version of ChatGPT, it has launched a subscription option (currently US\$20/month) that offers greater reliability and faster access to new versions of the tool. The involvement of private entities in higher education is not new and calls for care and regulation if selecting AI and other tools that are run by companies dependent on making profit, may not be open source (and therefore more equitable and available), and which may be extracting data for commercial purposes.

Source: <https://unesdoc.unesco.org/ark:/48223/pf0000385146>

This column brings out briefs of : Ph.D, M.Phil Researches in Education, Economics of Education, Social, Political, Psychology aspects of education conducted in University /College departments. It also brings out briefs on researches done by Research Institutions, Industry and NGOs. This column was introduced from April-June, 2016 issue of College Post. Method of reporting the researches completed and in progress was given in that issue. Interested researchers, professors and Heads of institute are requested to send their brief accordingly. Purpose of this column is to high light the researches in education conducted in university and college departments and in any other institution / industry and NGO for the benefit of policy makers, research scholars, thinkers. Readers are welcome to encourage relevant person and institute to send briefs on research done and being done in education.

This issue brings to you briefs on following Researches in Education.

PH.D. THESIS

TITLE: THREE ESSAYS ON ECONOMICS OF EDUCATION

RESEARCHER: MUHAMMED REFEQUE EGUIDE(S): M ABDUL JAMAL, DEPARTMENT OF ECONOMICS UNIVERSITY: UNIVERSITY OF MADRAS, COMPLETED DATE: 20

The Objective of the Study;

The specific objectives of the study include:

1. To assess the depth of inequality of educational attainment in India in general and in Kerala in particular across different gender, socio-religious groups and regions; and to identify the factors determining the educational attainment
2. To examine how does education help in human capital formation, and to study the nexus between education and employment; and to identify the factors determining employment both in a national context and in a Kerala context;
3. To measure the returns to different levels of education across various sectors, occupations, age groups, gender, religion, and caste separately for India and Kerala.

DATA SOURCE AND RESEARCH METHODOLOGY

The data used for present the study are extracted from the 68th round employment /unemployment survey conducted by National Sample Survey Organization and India Human Development Survey 2011-2012. For a comprehensive analysis, Multinomial Logistic Regression, Mincer Regression Function and Quantile Regression techniques are used.

Backdrop:

"Three Essays on the Economics of Education" begins the discussion by analysing the views of economists and philosophers including Aristotle, Adam Smith, Amartya Sen, and Gary Becker. With the evolution of discipline of economics, the term education also started to get a prominent space in the academic literature.

KEY FINDINGS

Educational Inequality:

The general characteristics and demographic features are: A total sample of 464960 with a rural-urban representation of 61.5% and 38.5% respectively. Out of this total sample, 51.4% are males and 48.6% are females. 75.8% of the sample units are Hindus, 12.9% are Muslims, and 7.0% are Christians. Considering the social groups, 39.3% belong to Other Backward Communities, 15.4% belong to Scheduled Castes and 13.4% are Scheduled Tribes. Remaining 31.9% belong to social group categorized as 'others'.

Most of the sample units are involved in the occupation category of skilled agriculture and fishery workers (19.1%) followed by elementary occupations (18.7%). In the rural sector, obviously, 29% of the samples are skilled agriculture and fishery workers, whereas in the urban sector, service workers and sales workers constitute the biggest occupation (16.5%) in terms of labour absorption.

The data shows that the percentage of illiterates is 19.7% and the percentage of people with graduation is 8.5%. This shows that, educational attainment at higher levels is still lower in the country. Rural-urban disparities in educational attainment is noted where 23.4% of the rural people are illiterates 174 and the urban illiterates are 14%.

The sectoral disparity is worse when it comes to educational attainment at higher levels where the percentage of rural graduates is 5.1% and of urban graduates is 13.9%.

The results show that educational attainment touches the lowest point at the lowest levels of income and the highest points are touched at the highest levels of income. The logistic regression estimates conducted to study the determinants of educational attainment in India shows that almost all the factors considered for the analysis are affecting the educational attainment in India in a significant manner.

The massive roles played by religion, caste, parents' economic status and educational levels are to be further emphasized. This means that, in this diverse country, religion, caste, sector, gender and economic status matter a lot when it comes to educational attainment and social well-being.

Employment and Education:

The analysis highlights that, though education is enhancing the likelihood of labour market participation, there exists inequalities on various ground where same level of education is benefiting differently based on the gender, caste, sector and religion. In order to identify the important determinants of employment

The inter-religious inequalities are visible in the employment status as well where Christians are found to be more likely to employed in almost all the occupation categories. This effect is significantly positive among the employment categories such as professionals, technicians, clerks, service workers and skilled agriculture and fishery workers. This can be perhaps due to the high levels of educational attainment among Christians, and naturally the jobs that require a certain level of education are occupied by the Christians. The odd ratios for various employment categories are found to be significantly negative among Muslims.

There are rural-urban difference, gender inequalities and inequalities on the ground of religions and social groups in the employment in India. Urban sector is acting as an advantageous factor in securing reasonably descent jobs such as legislators, manager and senior officials. Being in the rural area is found to be a disadvantageous factor in securing these positions.

The most important determining factor selected for this multinomial regression analysis is the level of education. The results thus show that, education plays a positive role in employment status of the individuals. The jobs that are generally perceived as good jobs are predominantly occupied by the people with good level of education.

Thus, it can be inferred that, at the national and Kerala contexts, education plays as an important role in the employment especially in the leading jobs such as legislators and senior officials, professionals, clerks and technicians. Education is found to be highly significant for all these categories of occupations. An extra level of education improves the likelihood of employment of the people. it thus becomes important for the governments to take proper measures and to formulate policies to promote education among the people. If education is provided to all the individuals irrespective of their state of origin, gender, religion and caste, inequality in the employment can be eliminated to a great extent

Returns to Education:

The returns to education are basically calculated using the standard Mincer regression. However, in order to assess the returns to different levels of education and to identify other factors affecting wage earnings, augmented Mincer regression was also used along with Heckman sample correction estimates. The quantile regression

estimates were also conducted to see how returns vary across the wage distribution.

Based on the values of education coefficients derived from the wage equation, the annual returns to education are calculated for each levels of education by gender, sector, religion and caste. Private returns to education are positively associated with education as higher levels of education leads to higher returns. The returns to primary education are low compared to other levels which implies that, primary education as such does not result in higher returns.

Returns to education increase with levels of education among all the religions. This means that, investing in higher education is useful as it will help the people yield more returns and thereby inter-religious inequalities can be eliminated to a great extent. pursue higher levels of education.

The analysis of returns to education reveals the inequality in returns to education on various grounds such as sector, religion and caste. Inequalities in returns can be either due to the open discrimination existing in the job market, or due to the factors that constrain the access of the disadvantaged groups to better jobs. It can also be due to the absence of necessary skills required to perform in the labour market.

Analysis of returns to education in Kerala is also indicative of the inequalities in terms the returns on various grounds. As in the case of national analysis, returns to higher education are higher among females. In Kerala, SC and ST communities are having high returns to graduation compared to OBC and other forward groups. This will definitely incentivize SC and ST communities to pursue graduation. Kerala analysis shows that the magnitude of inequality is not that voluminous in the state compared to national level estimates. However, low returns to higher education in Kerala indicates the necessity of improving the quality of higher education along with widening the access to all categories of people irrespective of their socio-economic status.

College post highly recommends this study to researchers and policy makers.

Scholars and Researchers are encouraged to send their briefs & abstract on Ph.D., M. Phil. and sponsored research studies for publication in this column of College Post.

CLIMATE CHANGE JUSTICE - VOLUNTARY LAW STUDENTS OF UNIVERSITY PACIFIC (USP GROUP WERE CATALYST FOR UN CLIMATE VOTE)

The campaign for the landmark resolution, supported by more than 130 member countries, started its journey in 2019 when a group of final-year law students conceived the project as an extra-curricular activity known as 'learning by doing' on USP's international environmental law course at their campus in Port Vila in Vanuatu.

In 2019 Dr. Justin Rose set up an extra-curricular exercise that students could volunteer for. "There were 20 participants from a class of 140," he said, recalling how the project started. "It was a way to teach a different skillset to those interested in doing some extra work and to empower them to do something positive about climate change.

"The exercise was, firstly, to discuss among the group the most productive legal action Pacific island countries could initiate within international law, and secondly to prepare letters and a brief that could be sent to PIF [Pacific Island Forum] leaders seeking to persuade them to implement it," explained Rose.

When, at the annual summit meeting of the PIF leaders in 2019, the leaders only 'noted' the proposal, the students did not give up but instead formed an organisation - Pacific Islands Students Fighting Climate Change (PISFCC) - to start what soon became a global youth campaign for an International Court of Justice climate change opinion.

Their key objective was to convince the governments of the world to seek an advisory opinion from the International Court of Justice answering a question that would develop new international law integrating legal obligations around environmental treaties and basic human rights.

They were soon joined by the World's Youth for Climate Justice.

Cynthia Houniuihi, the Solomon Islands-based president of PISFCC, who was one of the original law students at USP that initiated the project said "We are just ecstatic that the world has listened to the Pacific youth and has chosen to take action. From what started in a Pacific classroom four years ago," Houniuihi in a statement released from New York said "We in the Pacific live the climate crisis. My home country Solomon Islands is struggling. Through no fault of our own, we are living with devastating tropical cyclones, flooding, biodiversity loss and sea-level rise. The intensity and frequency of it is increasing each time. We have contributed the least to the global emissions that are drowning our land,"

"The vote in the United Nations is a step in the right direction for climate justice."

The International Court of Justice will now hold hearings and hear evidence on the obligations of states in respect to climate change, with a view to handing down an advisory opinion in 2024. A favourable opinion should make it easier to hold polluting countries legally accountable for failing to tackle the climate emergency, possibly with compensatory payments given to victim countries.

USP Vice-Chancellor and President Professor Pal Ahluwalia in a statement said "These are exactly the kind of high-achieving publicly minded graduates that we aim to produce. We are enormously proud of everything our alumni at PISFCC have achieved".

Source and Courtesy: World University News, Kallinga Seneviratne April 5

IS AMERICAS EDUCATION SUPERPOWER FADING?

A recently published article on America's Educational Superpower is Fading by Aldrian Woodrige published in Economic Times, on 10th April 2023 highlights that a relatively small proportion of graduates coming from universities in the young age group feel that the benefit of college degrees is higher than the cost. The proportion of those who feel so is slightly more than half. Whereas, more than 80 percent of persons in the higher age group felt that the benefit of college degrees is more than the cost of education

The paper also highlights that a relatively small number feel race and regional diversity is a major factors and most feel these are not major factors. Interestingly some companies feel degrees have overrated for jobs as compared to skills and other abilities.

The article points out that Academic Tuition cost has increased substantially since the 1970s to 2020. Tuition costs in the public institution are more than \$20,000 in 2020 as compared to slightly more than \$1000/- in 1970. In the Private institutions tuition cost is more than double or tuition cost in public institutions in 1970 and in 2020. Student debt in 2020 is more than \$30,00/- per student. Thus college education has become costly and student debt has increased.

The article points out that American universities were built on four pillars, namely, Democracy and Marketization. Meritocracy, and Freedom of Speech. It says America has taken the first two principles too far. There is a need to balance it by focusing on the third and fourth principles of freedom of speech.

HOW NOT TO REFORM THE PROCESS OF ASSESSMENT OF INSTITUTES OF HIGHER EDUCATION?

There have been news reports about the system of assessment of institutes of Higher Education by the National Assessment Accreditation Council, set up by the University Grants Commission in the year 1994 as an autonomous body. The director of the NAAC is appointed by the UGC out of three names recommended by the search committee. The Chairman of the council is also appointed by the UGC through the constitution of the search committee constituted by the UGC. The Council consists of members as per the provision of NAAC. Since its inception, NAAC has assessed and accredited 418 Universities and 9062 Colleges, some of which could be over several 5-year cycles. The system of assessment and accreditation has moved from star grading to Alfa-numeral sign grades like A++ or A- or B++ and so on. There is a system of detailed documentation by the institute's internal quality assurance Cell/committee. This document is sent to NAAC and it in turn after necessary data analysis for verification of facts and assessment of quality on the ground constitutes a peer /expert group committee to visit the institute. This peer group/expert committee visits report and analysis of documents submitted by the institute is then aggregated and a grade is assigned to the institute. Here opaqueness and subjectivity come to play. There is no benchmark either for analysis of documents in terms of what an institute is likely to get if the library is of this level, teacher students ratio is of this level, the performance of intake and outturn of students with different subjects and grade is of this level, per teacher research/ extension activity or any other contribution of this level. Similarly, the peer/team has to verify facts and claims by the institute. Hence visiting team should be in the know of the level stated to have been attained by the institutes as per the benchmarks of parameters. Owing to this opaqueness there have been complaints about the award of grades to the institution. These complaints have been for quite some years both under the previous system and the present system. In order to understand and find out if there is any systemic problem, Professor Bhushan Patwardhan, the executive chairman of NAAC set up a committee of experts to study and find out if there are any systemic or any other issues involved with regard to these complaints. The committee submitted its report to the Council. The Executive Chairman wanted to implement the suggestions and accordingly, he sent his suggestion to Chairman, UGC to reflect and give the commission's view on them. Perhaps some time lapsed and Executive Chairman again reminded, as reported in the press, expressed his intension as reported in the press. Instead of reflecting on the recommendation made to him the Chairman of the

Commission chose to construe it his resignation from the post and appointed a new Chairman of NAAC. Hence for some time, there were two persons in the same position. Professor Bhushan finding it odd and keeping in with the dignity of office resigned. In following day newspaper reports, NAAC defended that their system is robust. Yet, on 10th March 2023 a news report published in Indian Express states that CAG has pointed out discrepancies in the processes by citing examples of an arbitrary method of assigning grades by peer group visiting teams The questions would remain what were Professor Bhushan's recommendations and what made the commission, instead of responding to the recommendations to do away with the person who proposed reforms? On April 3, there was a detailed interview by the Chairman UGC making a case of strengthening the NAAC.

THE THE WORLD UNIVERSITY RANKING SYSTEM PLEADING WITH IITS INDIA TO RE-JOIN

The news published by Indian Express on the 26th stated that The Times Higher Education World University Ranking body is pleading with IITs to rejoin the THE World University Ranking System. In the year 2020, old IITs namely, IIT, Bombay, Delhi, Kharagpur, Madras, Kanpur, and Roorkee of India had boycotted The THE World University System over the issue of "transparency". The representative of the THE World University Ranking made a presentation to IITs to resolve the issues of "transparency". The representative said the issue of criteria of Citation Matrics having 30 percent weightage is resolved by redrawing three new criteria which collectively account for 15% i.e. typical research strength -5%, Excellence in Research-5%, and network effect of citation -5%. It has now kept a 15 % weightage for citation metrics. In our view, the newly conceived measures are also very vague. When the representative of Indian Express asked for the response of the Directors of three IITs, it is reported that since the decision to boycott had been taken collectively, hence the decision to resume or not will also be taken collectively. A detailed article published in the College Post in The College Post 2013 (July-September-14(3)) issue, had shown that indicators used by the THE are highly biased towards UK, European, and American universities. Therefore, the system of THE World University ranking is not relevant for India. This is also partly true for QS and other World University Ranking systems. Interested readers may also look for a detailed article on World University Ranking Sytems - Are they Indicators of Quality? Published in India Higher Education Report- 2017 titled Teaching, Learning and Quality in Higher Education, Edited by N.V. Varghese et all and published by NIEPA and Sage. 2018

Chat GPT an open AI platform with Large Language Modelling and machine learning is making news all over the world. The OpenAI platform has progressed from Chat GPT-1 to Chat GPT-4 and Chat GPT-5 is progress. Many IT giants has expressed their apprehensions and pleaded for slowing down the research on this further. But researcher have their own view and therefore they proposed to continue with the same vigour. One of our esteemed friends send a poem constructed by AI on NEP-2020. It was quite amusing. Let me share a few stanza from this:

Oh Higher Education Reforms in India,
Thou art a puzzle, hard to define,
With promises grand and visions bright,
But results, alas, are out sight.

So the software is able to gather information from various sources, process it and compose the poem. It worries teachers whether student has done a write up of an assignment by herself or with the help of software. In USA most of university teachers have asked their students write the assignment instead of submitting it online.

This LLM has strong possibility to effect ability of learning and application of mind. It, at the same time, the machine learning can provide information /contents of the subject after it is curated by experts to a large number of students at their own pace and time

A recent article in TOI (19th April,23) states that Chat GPT is performing following functions in educational institutes: "As teaching Aid for personalized tutoring, for creating quizzes at the end of the lesson, to modify lesson plans, replacing take home exams with in class test and discussion, helping to generate ideas for classroom activities, summarizing log text and extracting key points" This report also points out that-

"Other than ChatGPT there are AP like Gamma, Prompt Storm, Rose, Perplexity, ChatPDF, HeyGen and TLDY provide several education services.

There are some apps which help detect AI cheating. These are : originality.ai, writer.com, Moss, Turnitin, Urkund, and ChatGPTZero and so on."

Every technology has two sides- positive and negative. In fact education has also two sides-positive and negative. It can liberate the learner and it can also subjugate the learner. Hence the new role of education is to discern what is right and useful for the students and society.

Let us look at how technology has taken out knowledge, skills out of portals of libraries and classrooms of universities and colleges. It has enabled the knowledge to reach out to any part of globe- having facility of IoT. Certain platforms provide videos lectures of eminent persons on a specified topic all over the world.

In India development of video lectures by eminent persons started as early as mid-1980s when Education Media Research Centres were established. By 1990s several of EMRCs and Audio Visual Research Centres (AVRCs) produced lectures on various subjects. There were earlier telecast as Country Wide Class Room programme and subsequently under GyanDarshan and

Vyas Channel- a higher education channel. Now it is being done under Swayam internet portal with lecture videos and E-contents.

A large number of edtech companies have come up in USA and in India offering several platforms for delivery of education. In India it is yet more at K-12 or competitive exam levels. It is said there are 25 top edtech companies in USA offering education and related programme. Coursera - offering programme of undergraduate students in Economics, Engineering, Mathematics is one of them. There companies engaged in offering programme under adaptive learning and language learning. Duo lingo is said to teach several language on line. Many of edtech companies have taken a role of providing Indian universities distant education programme through their LMS.

SEED-CHEST is offering online one year diploma in education leadership development programme-higher education on open source LMS Canvas. It has put interactive video development during interaction SEED Channel of YouTube.

College Post has published an article on use of AI in higher education. Yet another article on Open Source Intelligence Network -an intelligent sourcing of information. College Post has also published a review of a book making projection of future AI under title AI- 2041. Reader would greatly benefit going through review and the book. The book brings out positive and negative side of AI. Cloning, Morphing under Augmented Reality (AR), Virtual Reality (VR), and Extended Reality (XR) to the extent to appear as real is a help in education but at the same time a threat which can influence a large numbers and have devastating effect on polity, society and people on this planet earth.

Look for more on this in "Technology Watch" in next issue.



A WORLD WITHOUT WORK- TECHNOLOGY, AUTOMATION AND HOW WE SHOULD RESPOND by Daniel Susskind. Random House, UK, 2020

The future of work raises exciting and troubling questions owing to rapid changes in emerging technologies attempting to replace the even cognitive skill related jobs and automation replacing human needs to accomplish the tasks. Daniel Susskind in his book "A World Without Work - Technology, Automation and How we Should Respond" shows how technology, automation, as it has evolved beginning from mechanical looms where workers were replaced by machines to current advances in Artificial Intelligence (AI) where all kinds of jobs are now at risk.

The book is written in three parts each having four chapters. Part-I provides us the context. In part-II the author deals with the potential threat and finally in Part-III he tells us how we should respond.

In the first part of the book he begins with examination of the history of technological development to show why those who worried about being replaced by machines turned out repeatedly to be so wrong. In chapter 1: A history of misplaced anxieties, he explores how economists have changed their minds over time about the impact of technology on work. In chapter-2: The age of labour, he tells us that technology has in general benefitted labour but not all of them have always benefitted. In chapter three and four (the pragmatist Revolution, and understanding machines) he turns to the history of AI which is largely responsible for the renewed sense of unease that many now feel about the future: intellectual and practical revolution of today has caught flat footed many scientists, computer scientists and many others who till yesterday had tried to predict which activities machines could never do.

Four Chapters of Part-II - Task Encroachment (Ch.5) deals with the question of identifying which of the human faculty (manual, cognitive and effective capability) are hard to automate and singles out that new technologies that struggle to perform task that require social intelligence - Activities that require face to face interaction or emphatic support.

In Chapter 6 and 7, he discusses the role of technology to explain why past worries about automation were misplaced. In exploring this he uses the argument - technology unleashes two forces - harmful substituting force and a helpful complementary force which plays out at once displacing workers while simultaneously raising the demand for their efforts elsewhere in the economy (p.98). Using this he tells us that threat of technological unemployment increase more when the balance between substituting and complementary forces becomes more biased towards substituting and such a bias result in less and less work. Chapter-8 of this part is devoted a disentangle the relationship between technology and income inequality. The thesis he explores is - prosperity has always been unevenly shared out in society and

human beings have always struggled to agree on what to do about that. Economic inequalities though not new, the danger he argues is that technological progress has made this problem even more severe and harder to solve in the future as prosperity increases so does inequality which essentially becomes problems of distribution in society.

The impact of these technologies on the labour market and the organization of work has varied across sector, countries and regions. The author propounds two-pronged response. One is economic and the other is non-economic. For economic response the author elaborates that technological unemployment is essentially a skill challenge and if we can give people the right education and training then this challenge can be resolved (Ch.9). Note "Better educated workforce were better equipped to put these technologies to better use: (p.154)".

While discussing the role of education he tells us that there are both who believe that if we can adapt what, how and when to teach then education is our best current bulwark against technological unemployment (p.161). The author highlights the purpose of education which goes beyond simply making sure people are able to find well paid jobs. These purposes are non-economic concerns and are dealt by him in chapter 10 and 11 of this book. However, in chapter 9, he does recognize two limitations of education in providing effective answer namely, Unattainable Skills, and Insufficient demand.

Realizing that when workers skill levels are already plateauing and there are some limits on how effective education can make human beings more productive/happier, responding properly to technological unemployment then means finding new finding new answers to the question how we share our prosperity, that do not rely on jobs and the labour market at all. He says we need a new institution to take place of the labour market. He calls it "Big State" (Ch. 10), a state which has all the features of a welfare state - income sharing, capital sharing and labour supporting that can keep the increasingly divided (Diverse) societies from falling apart.

In Chapter 11 -"Big Technology", he underlines the rise of big technology giants and the nature of their growing political power in the face of decline of work. The situation will demand more and more of our attention, but we are almost entirely unprepared to respond to it yet effectively.

Finally, Chapter 12 deals with figuring out how to use prosperity. For, as we know work for some people is a source of income and nothing else but for others the work they do is a source of purpose. The problem therefore reduces to not how to live but how to live well, and thus are forced to consider in future what it really means to live a meaningful life.

This is one of the books recently published on the subject of impact of technology on life of people, social groups, political systems that challenges our wit and therefore it deserves to be read by leaders of higher education.

Dr. S.C. Sharma

CERTIFICATE COURSES ON VALUES & LIFE COPING SKILLS

MODULE 01 - 2 CREDITS

THIS MODULE IS DIVIDED INTO THREE BROAD UNITS NAMELY:

(1) Value Orientation - Definition, Norms and Values, and Perennial Values-

- i. Sincerity
- ii. Concern
- iii. Seeking to do the best
- iv. Sense of thought and action which can harm the individual and the society.
- v. Sense of duty
- vi. Sense of character

(2) Values in Modern Society - (i) Modernization and Modernity, (ii) Rationalist and liberal model, (iii) Revivalist and Orthodox Model, (iv) Radical and Revolutionary model.

(3) Types of Contemporary Societies - (i) Traditional, (ii) Transitional, (iii) Modern Societies - Ethics and moral foundation and Culture (iv) Post-Modern Society.

- Each of the units has assignments. These will be supplemented with the latest ideas while interacting with specialists.

MODULE 02 - 2 CREDITS

THIS MODULE IS DIVIDED INTO THIRTEEN UNITS NAMELY:

- | | |
|--|---|
| 1. Emotional Intelligence | 8. Sense of Duty |
| 2. Self Esteem | 9. Habits of Thrift |
| 3. Yoga | 10. Environment Protection Policy of India |
| 4. Skills for Quality Life | 11. Fundamental Rights and Duties |
| 5. True North Principle | 12. National Security |
| 6. Potential for Four Human Endowments | 13. Personal Security with its several sub-aspects. |
| 7. Work | |

- Each unit and sub-unit have assignments to be attempted by the participants.

IMPORTANT NOTE-

Courses will be offered in collaboration with the institutions. Also, students can directly enroll for the Certificate Courses.

CONTACT DETAILS

E-mail - seedicf@gmail.com
Phone - 9868820215
Landline - 011 43008598

Partly supported by ICSSR, New Delhi



College Post R. No. 65288/95
ISBN 978-81-929059-0-7

seed...

Society for Education and Economic Development,
Flat no. 56, Sector-1, Pocket-1, Dwarka,
New Delhi-110075



Centre for Higher Education Studies and Training



Indian College Forum
A Professional Body of Colleges of India

COLLEGE POST

College Post - The higher education journal



Centre for Economic Analysis and Development
International Centre for WTO and WIPO Studies



**Women Empowerment through Micro Enterprise
(WEME)**

Other Centers

- **Centre for Assessment of Standards in Education**
- **Centre for Public Policy and People**
- **Centre for International Cooperation and Peace**

**SOCIETY FOR EDUCATION AND ECONOMIC DEVELOPMENT
NEW DELHI**

Published and Edited by Dr. G.D. Sharma on behalf of the Society for Education and Economic Development, from Flat No. 56, Sector-1, Pocket-1, Dwarka, New Delhi-110075, Phone 43008598, lasertypeset by Suvidha Computers, 86-A, Adchini, New Delhi-110017, and printed at Supreme Offset Press, K-5, Malviya Nagar, New Delhi-110017. Printed on 13th February 2023