

**DESIGNING CURRICULUM MODEL IN POTTERY FOR
ENTREPRENEURSHIP**

**A thesis submitted during 2023 to the University of Hyderabad
in partial fulfilment of the award of**

**DOCTOR OF PHILOSOPHY
in
EDUCATION**

BY

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DECLARATION

I, **Debapriya Ghosh**, hereby declare that this thesis entitled “**Designing Curriculum Model in Pottery for Entrepreneurship**” submitted by me under the guidance and supervision of **Dr.T. Sumalini** is a bonafide research work.

I also declare that it has not been submitted previously in part or in full to this University or any other University or Institution for the award of any degree or diploma. I hereby agree that my thesis can be deposited in Shodhganga/INFLIBNET.

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A. The student has the following publication before submission of the thesis for adjudication and has produced evidence for the same in the form of the reprint in the relevant area of research:

1. Titled "**Tracing the Roots of NEP-2020 to Gandhiji's Nai-Talim through Document Analysis and Interpretation**", published in *Shodh Sanchar Bulletin*, UGC CARE Journal, ISSN 2229-3620, Vol. 11 Issue 41, March 2021, page nos. 93-97
and

B. The student has made presentations in the following conferences:

1. Paper entitled '**Learning beyond Boundaries: Devising Holistic strategies for Indigenous Provincial Art-integrated Vocational Pottery**', presented at International Conference on 'Education Outside the Classroom' organized by TLC, BITS-Pilani, Goa, on 29th-30th July 2022.
2. Paper entitled '**Holistic Play Pedagogy for Budding Entrepreneurship and Green Economy: Adopting Sustainable Multidisciplinary Approach for Elementary Schools**', presented at International Conference (Online Mode) at 9th LSME International

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Further, the student has passed the following courses towards fulfilment of coursework requirement for Ph.D. doing coursework in November 2019 and was awarded:

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(In words)-EIGHT POINT SIX SEVEN



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LIST OF ABBREVIATIONS

CBSE	Central Board of Secondary Education
CNP	Curriculum Need Perception
CSS	Centrally Sponsored Scheme
CSSSAP	Craft Sustenance and Skill-Based Questionnaire for Skilled Artisans in Pottery
CVI	Content Validity Index
CVR	Content Validity Ratio
DIET	District Institute of Education & Training
EA	Entrepreneurial Attitude
EAO	Entrepreneurial Attitude Orientation
EEM	Environmental Education Module
EI	Entrepreneurial Intention
EIQ	Entrepreneurial Intention
ELT	English Language Teaching
ESD	Education for Sustainable Development
ESL	English as Second Language
ESTEP	Entrepreneurship and Skill-Based Questionnaire for Trade Entrepreneurs In Pottery
ICT	Information and Communication Technology
ITI	Industrial Training Institute
LAEICNP	Learning Aspirant Entrepreneurial Intention and Curriculum Need in Pottery
MANOVA	Multivariate analysis of variance
MHRD	Ministry of Human Resource Development
MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act
NASSCOM	National Association of Software and Service Companies
NCIVE	National Committee for the Integration of Vocational Education
NEP	National Education Policy
NSQF	National Skills Qualification Framework
PSSCIVE	Pandit Sunderlal Sharma Central Institute of Vocational Education

SAC	Skilled Artisan from Chaltaberia
SAG	Skilled Artisan from Ghurni
SAK	Skilled Artisan from Kumortuli
SAP	Skilled Artisan from Panchmura
SCERT	State Council of Educational Research and Training
SCVET	State Council for Technical Education & Vocational Training
SPSS	Statistical Package for the Social Sciences
SWOC	Strengths, Weaknesses, Opportunities, and Challenges
SWOT	Strengths, Weaknesses, Opportunities, and Threats
TA	Thematic Analysis
TEC	Trade Entrepreneurs from Chaltaberia
TEG	Trade Entrepreneurs from Ghurni
TEK	Trade Entrepreneurs from Kumortuli
TEP	Trade Entrepreneurs from Panchmura
TVET	Technical and Vocational Education and Training

ABSTRACT

Education is the best tool for achieving societal evolution. The world is undergoing expeditious transformation in the knowledge landscape, and the need for a skilled workforce is strongly felt with each passing day. The National Education Policy 2020 addresses the growing developmental imperatives of our country. The Policy comes up with refurbishing all ingredients of education, aligning with the 21st-century skills, while building upon Indian value systems and culture. India is the treasure house of rich craft culture, of which pottery is one of the most age-old crafts, practised across several generations.

The research problem purports to design a curriculum model in pottery, to develop the fullest potential of any learning aspirant, with entrepreneurial intention and curriculum perception in pottery, for understanding the principles and concepts, instilling foundational capacities and imbibing entrepreneurship in pottery. Extensive related literature reading by the researcher highlighted that there exists a lacuna of research evidence in pottery curriculum designing and pedagogy. The study employs a Mixed Sequential quan->QUAL method.

To achieve the objectives, the researcher first assessed entrepreneurial intention and perception towards the need for a pottery curriculum among learning aspirants and figured out the relationship between them using a self-constructed 5-point scale and Spearman's correlation. To understand the skills, competencies, needs, opportunities and challenges in pottery, the researcher conducted an extensive field survey in four well-known pottery sites in Bengal. The researcher obtained primary data from active field functionaries using self-constructed questionnaires consisting of close-ended and open-ended questions. The questionnaires were analyzed graphically and thematically. The researcher also

maintained a field diary for noting down every observation in the field- the process of crafting, seller-buyer relationship, gestures and reactions of all respondents. Data from various sources were ‘triangulated’ to create a connected whole that resolves the research questions. The identified themes were derived from patterns that emerged from the data and linked to curriculum model development.

The competency-building curriculum model in pottery for entrepreneurship, the resultant of the analysis is divided into 15 units (pottery basics, tools, techniques, innovative products, entrepreneurial and other skills) along with learning outcomes, content, teaching-learning strategies and evaluation modes. The researcher also prepared a learning module with eight activities to apply the principles of pottery crafting and developing skills at the basic and advanced levels. Further, the learning aspirants with moderate entrepreneurial intention and moderate to high curriculum need perception in pottery was subjected to different learning activities and the efficacy of the module was examined through observational analysis and follow-ups.

However, the researcher suggests further research for alternative plan of implementation of the curriculum model in further studies in other places across the country. This model will help to understand and interconnect with the societal needs as well as universal needs since a curriculum should be a mirror of society, and enable self-reliance and sustainable livelihood among learners in the future.

CHAPTER I

INTRODUCTION

CHAPTER I

INTRODUCTION

“No research without action, no action without research”

- **Kurt Lewin**

1.1 Background of the Study :

Education is the process of shaping responsible citizens to rebuild a nation. Education aims to build positive human existence and clarify the individual's inner self. Education is a powerful tool for meaningful social development. The reciprocal relationship between education and society makes education and the societal future inseparable. Education can be redefined as a flow of events commencing with childbirth and ending with death. Education leads to the balanced development of the individual personality. Education is not just a competition to earn grades, but the development of self-awareness. Our understanding of the future of education helps us identify the kind of knowledge and skills that are cardinal for generations to come. Diversified development scenarios are presented in several countries, more or less contributing to the challenges, complexities, controversies and inequalities in sustainability arising from environmental, national, cultural, social and economic heritage issues. However, accelerated globalization has been influenced by the technological revolution for millennia. It has reduced disparities between countries in terms of potential resource mobilization, forcing us to perceive and solve problems at every level as a citizen of the world. This requires educating people worldwide to acquire the skills and competencies needed to learn, think and behave sustainably. However, our efforts should not be limited to imparting knowledge or raising awareness but promoting sustainable behaviour, cognitive skills and abilities, motivation, willingness and social disposition to solve problems responsibly in different situations. Education should seek to integrate the values, activities and principles associated with

sustainability into all forms of learning. Education is also expected to change learners' attitudes and values to ensure a more sustainable future. Education is a platform for experimentation and the critical reflection needed to devise alternatives for the future, which is only possible through rigorous research.

1.1.1 Employability Crisis among Youth in India and its Cause

The prime reason for all afflictions prevailing in our society is the separation of knowledge from work. Separation of learning from work accomplishes injustices and prejudices in society. In India, the youth unemployment rate has been rising steadily over the years.

According to a NASSCOM report, India adds approximately three million graduates and post-graduates annually to its workforce. Of these, only 25% of engineering graduates and 10-15% of regular graduates are considered employable in the industry.

According to “World Economic Forum”, out of 13 million people entering India's workforce annually, only a quarter of management professionals, one-fifth of engineers and one-tenth of graduates qualified possess the skills to get recruited.

The regional director of a professional training company, IndiaSkills, says, "Almost 85% of graduates are out of work, while 75% of engineering graduates are out of work." This can be explained by graduates' lack of focus on definite career paths, overemphasising academic excellence with general knowledge without understanding of the subjects and lack of a meaningful curriculum. Industry-relevant curriculum and industry-university partnerships in research programmes, internships, and industry projects with expert professional advice are the needs of the hour. In contrast, our society values office jobs and often despises those with a general degree in an academic field.

The resolution of India's employability crisis requires a multipronged intervention combining skill development from the school years with a prospering industry-academic partnership. It is expected to equip the youth with employability skills and provide the workplace accountability to utilise the country's demographic dividend with appropriate resource optimization.

Today's enterprise is tomorrow's education. Skill education can vehemently help generate interest-based self-employability opportunities among the youth population through inquiry and experiential methods, as the best practices.

1.1.2 Vocational Education and NEP-2020 -The saviour of employability crisis:

Vocational education has become an increasingly important priority for India. In the words of Gandhiji, "A vocation is the best vehicle for the all-round development of a boy or a girl, and therefore the curriculum must revolve around vocational training."

MHRD has released National Education Policy 2020, whose recommendations are expected to address the employability crisis situation prevailing in India, if implemented properly.

NEP 2020 aims to break stereotypes to bring about change in the overall education sector over the next decade. The policy talks about revolutionary changes that will be applied throughout the education system, especially concerning vocational education. The reach of education should be broadened by facilitating different learning pathways, involving both institutional and informal modes.

Second, it advocates a mix of apprenticeship and academia, and gives learners more flexibility in choosing subjects to study, including arts, crafts, physical education and skills. The previously existing rigid separation of the two streams resulted in a

stereotypical upbringing. It is time to end it. Vocational skills will be integrated into the sciences, humanities and mathematics school curricula.

Third, vocational education will begin to be implemented at the school level from the 6th grade, advocating that every child should practice at least one vocation, being open to many other vocations. Quality vocational education will integrate seamlessly into higher education with an early exposure at school. Essential occupations, such as carpentry, textiles, metalwork, horticulture, pottery, etc. at the discretion of the states and local communities, will be integrated during the school years.

Fourth, the local occupations surrounding the area of school will be identified using mapping techniques. There is a gap between what society necessitates and what schools teach. Society needs masons to build classrooms, but construction has never been taught in schools. Local artisans and experts, who are directly involved, have never been appreciated in the existing system. This policy breaks this rigidity. Students in grades 6-8 are encouraged to attend ten days of free learning directly from local professionals such as artists, gardeners, carpenters and potters. Learners in grades 6-12 will be offered apprenticeship opportunities in vocational subjects.

Fifth, there is a clear gap between schools that offer vocational stream and those that currently do not. In addition, professional courses are not offered in all schools. To overcome this shortfall, the policy proposes gradual inclusion of vocational education in the general education curricula of all schools in upcoming years. This will also include partnerships with local industries. Competence laboratories have been proposed to be established.

Sixth, in higher education, institutions will provide vocational training or cooperate with industries. Vocational streams will be made available to learners enrolled in

undergraduate programmes, including multidisciplinary alternatives. Higher education institutions will also be encouraged to organize certification courses for learning various skills, including “LokVidya” (*Bharat*-centric knowledge), to be made available to students through integrated vocational courses.

Seventh, the Ministry of Education will set up the National Committee for the Integration of Vocational Education (NCIVE), with vocational education experts and members representing every ministry in collaboration with the Ministry of Education and Training.

The present study aims to design a competency-developing curriculum model in pottery for learning aspirants, irrespective of age and socio-economic background, to help them qualify for their respective vocation and create sustainable livelihoods.

A question might arise as to why the researcher considered pottery in the research problem. The following section explains this.

1.1.3 Pottery – An age-old traditional craft

Pottery is a century-old historical craft of our diverse India. Pottery has existed all over the country since time immemorial and continues to do so. In India, we have a great tradition of pottery making, continuing till date, due to its innovative and eco-friendly nature.

East Indian pottery has gained nation-wide recognition since the craft received royal patronage in an age of culture appreciation. Eastern India has produced countless skilled potters who effectively produce outstanding art masterpieces. Various techniques have evolved over time to revive the ancient tradition of this craft, which is the livelihood of the inhabitants of Eastern India. West Bengal pottery is as old as the Neolithic period. Pots and figurines of the *dieties*, were produced by potters in West Bengal since its

advent. The potters used the rich clay deposits along the rivers of Bengal as the fundamental raw material for this work.

Pottery was therefore chosen as a vocation-oriented discipline with importance felt through developing each learner's creative potential and fundamental personal capacities through this age-old craft.

1.2 Conceptual Framework

1.2.1 Vocational Education and Skill Development

India is home to a rich craft culture, preserved by the hard work and passion of artisans across the country. Since time immemorial, craftsmanship and artistry have been a source of livelihood in rural areas, where artisans have received tremendous respect and appreciation. With rapid industrialization, technology integration, artistic excellence, and creativity; hard labour of rural artisans and their traditional artistry has been overshadowed. It is the prime time to encourage such skilled artisans bring out their creativity to the world for disseminating the same among the youth through entrepreneurship education.

Vocational Education “comprises of education, training and skills development relating to a wider range of occupational fields, production, services and livelihoods”. Vocational Education has taken centre stage for building competencies, capabilities, attitudes and skills among learners. About 66 percent of the population in India belonging to the working group of age 15–49, greatly acknowledge the urgent need for quality vocational education. The crux of vocational Education lies in merging theoretical concepts and practical skills to develop entrepreneurship.

Education and skill development are central pillars of lifelong learning and sustainable livelihoods. Skills development is key to promoting sustainable development by

facilitating the switch from the informal to the formal economy. In the context of globalization, skills development also addresses the threats to meet the new needs of these changing economies and emerging technologies. The principles and values of the traditional crafts guide design thinking, provide skill development and effectively manage socially rational transitions. Skills development is essential to improve national productivity, employment scenarios, growth and development. Skills development help create a framework within which the quality and relevance of education and training for people foster innovation, investment, technological change, entrepreneurship, diverse economy and competitiveness to accelerate the production of efficient products. Training and skills development has several meanings and includes many different elements. However, skills development must be linked to broader strategies for growth, employment and development that require the Government to partner with industry, develop policies that link education and skills and change the landscape of technology, commerce, and the economy that goes with it, targeting entrepreneurship.

National Education Policy 2020 provides the impetus to light up the entrepreneurship revolution. Entrepreneurship education is a constructive teaching-learning approach that explores the academic content and skill sets that learners acquire to open doors to the world of work.

1.2.2 Vocational Education in India

Vocational education provides millions of learners with a comprehensive and holistic way to develop their skills. Implementation of Vocational subjects includes a hub-and-spoke model, whereby an institution with the necessary infrastructure will act as a hub and transfer skills to learners from surrounding institutions. Programme policies provide

additional funding for such "hubs" and the transportation of learners between hubs and their spokes.



Fig F1.1: Development of Vocational Education in India

1.2.3 Reimagining Vocational Education through NEP-2020

The Government of India launched the *National Education Policy - 2020 (NEP-2020)* in July 2020, 34 years after the last NEP was set in motion in 1986. The NEP-2020 sets to usher in a reformative transformation in the Indian education sector, simultaneously being culturally grounded, internationally competitive but geared toward quality transformation.

The policy has placed a colossal emphasis on skill-building. In this context, transitioning our educational system towards the direction of competency development is imperative today. Nurturing young minds through critical thinking, problem-solving, communication skills, creativity, empathy etc, is the need of the hour and calls for a radical revamp of our educational system.

Besides proposing foundational principles for educational change concerning Indian knowledge systems, culture and values, the NEP-2020 proposes revamping all education sectors, including its structure, curriculum and pedagogy, teaching-learning strategies, resources, assessment, skilling and employability, facilitating optimal learning environment and learner support, modes of evaluation, internationalization, research and funds, governance, leadership, regulation and accreditation.

The National Education Policy 2020 states,

“The aim of education will not only be cognitive development, but also building character and creating holistic and well-rounded individuals equipped with the key 21st century skills” (Para 4.4).

Though up-skilling serves a vital step towards this aim, the policy refers to a sequence of challenges including perceived socio-economic hierarchy connected with vocational education and lack of its integration with mainstream education at any educational level.

Significantly, NEP 2020 also encourages implementing Vocational Education models so that locally relevant skill courses can be offered in suitable ways.

“By 2025, at least 50% of learners through the school and higher education system shall have exposure to vocational education, for which a clear action plan with targets and timelines will be developed... .. The development of vocational capacities will go hand-in-hand with the development of ‘academic’ or other capacities” (Para 16.5, NEP 2020).

Recommendations are also postulated to provide exposure of upper-primary children to Pre-vocational Education, focusing on activity-based learning to provide opportunities to the students, align them with industry-specific skills required in employment sectors and equip them to take unerring decisions while choosing their subjects for higher education. This not only diminishes the gap between bookish and practical knowledge, but also gives students access to specific skills, helping them make accurate decisions for the future. These activities will also instill the blossoming of diverse skills, better values, collaboration, teamwork and a sense of quality. Desired attitudes and values allied with manual labour must be nurtured through experiential learning, collaboration and cooperation. Its implementation with nominal available resources has to be done at the grassroot level, and supported by faculties of all subjects, making it easy to replicate on a larger scale.

At the middle and high school levels, NSQF-compliant vocational courses have been offered to learners along with other subjects. National Skills Qualification Framework (NSQF) is an integrated national competency-based framework that organizes qualifications into a range of knowledge and skill levels. Learners not only participate in learning career skills in any chosen field in the school labs or field trips but also gain career-specific experiences by participating in internships or pre-job orientation training.

Chapter I/Introduction

The Work Skills module includes Entrepreneurship Skills, Self-Management Skills, Communication Skills, Information Technology Skills and Green Skills in the Professional Courses of PSSCIVE. This skill-building outlook for learners from elementary to high school, helps change the concept of vocational education as “applied learning” and nurtures them with “essential life skills, thereby preparing them for further study, employment or leadership in the future”.

NEP also addresses integrating vocational education in all education institutions, thereby eliminating disparity between general and vocational education. A credit accumulation and credit transfer framework needs to be developed to integrate academic and professional streams and accelerate migration between the two. It will also make vocational education more motivating and close the gap between the two streams.

Skills education must dominate the ever-changing socio-economic landscape, making it relevant to learners, industry and communities. Skills enhancement courses, course transaction processes, and assessment networks must remain productive for their holistic development, as envisioned in the NEP. The consequences of skills education will be visualized as learners transcend from school to higher education, employment or livelihood. This transition must be accomplished by elevating consciousness among learners, institutions and organizations about alternative learning methods, professional guidance and promoting career skills as a child paving the way towards ambitious career path.

As the Prime Minister pointed out, “Revamping skills, especially in occupations, through vocational education has become a recurring and increasingly important priority for India.” Therefore, the education ecosystem needs a turnover to provide vocational education conjugate to aspects of holistic education by transcending the barriers of social

hierarchy. India is on track to implement key reforms to integrate vocational education into general education. Simultaneously, the stakeholders must ensure that learners have the opportunity to hone the life and work skills needed for the 21st century.

1.2.4 Nai Talim: A Vocational Work-Based Learning Approach

Nai Talim is an educational methodology that came into existence due to Gandhiji's devoted contribution to giving shape to the education scenario in post-independent India, based on his educational experiments at the Tolstoy Farms in South Africa. He administered several educational experiments and emerged the breakthrough at the Wardha Conference in 1937. He integrated art, craft work and local demand-based vocation into teaching-learning. Nai-Talim involves a deeper understanding of native minds, their needs, patriotism, and an awakened nation. It is "education for life, education through life and education throughout life". Nai-Talim aims at the complete development of individuality, including productive efficacy. "The objective of basic education is the physical, intellectual and moral development of the children..."(Harijan -April 6, 1940). Nai Talim surfaced into public purview at the "Wardha Shiksha Sammelan of 22-23 October 1937". The chief propositions at the conference are as follows:

Table T1.1: Chief Propositions at Wardha Education Conference (1937)

Proposition 1	"There should be free and compulsory education for seven years provided to all learners."
Proposition 2	"Education should be imparted through the mother-tongue."
Proposition 3	"Education should be centred around productive work, keeping the child's interests in mind and favouring local context."
Proposition 4	"The teachers' salaries would come from the income generated through this productive work."

1.2.5 Resemblance of Nai Talim and NEP-2020

1. Through Nai-Talim, Gandhiji supported the medium of instruction as mother-tongue. Other languages of national importance must be imparted with much care.

NEP-2020 emphasizes the medium of instruction as mother tongue or other regional language along with promotion of multilingualism. The policy also proposes an array of initiatives for the conservation and promotion of the languages of India.

2. Nai-Talim emphasized crafts, including pottery, gardening, wood-work, leatherwork, paper-art, spinning-weaving, metal-work and book-binding. Nai-Talim includes 3-H development to harness a balanced individualistic personality.

NEP 2020 lists an internship for learners from Grades 6 to 12 in a local need-based vocation under the supervision of vocational experts – potters, carpenters and artists. Each learner during Grades 6-8 is supposed to take an activity-based course that gives a first-hand experience of the choice-based vocational crafts, such as carpentry, pottery, metal-work, mapped as local need.

3. Nai-Talim provides free and compulsory education to school learners for seven years to acquire skills and values irrespective of socio-economic constraints. NEP-2020 entitles every child with education as a fundamental right. The policy aims to achieve 100% gross enrollment from pre-primary to secondary school by 2030. NEP-2020 contemplates access to quality education for every child.

4. Nai-Talim means task-oriented education. Learning to connect with socially relevant and productive things paves the way for building a creative mind. This allows learners to become proficient in local crafts with a conceptual, inquiry-oriented spirit and

autonomy.

NEP-2020 reiterates holistic and experiential school pedagogy, focusing on learners' conceptual understanding, wholehearted creativity, and rational critical thinking.

5. Gandhi correctly recognized that the role of the teacher tended to produce responsible citizenship of the nation through the Nai-Talim, and, therefore must be accorded absolute respect, stating that a teacher's reward comes from productive work.

NEP 2020 accentuates teachers as the soul of the educational process, designating them as agents of change. The NEP has set national professional standards for teachers, which will guide teachers for professional development, salaries and promotions.

6. Gandhi meant a national educational system for a common and peaceful existence. Nai Talim was based on learning for non-violent and cooperative living. NEP-2020 envisions the development of people who support culture and values, contributing to a just and inclusive society balanced between scientific thinking and creativity.

7. Nai-Talim promotes maintaining "dignity of work" and advocates that any form of manual labour must be respected and no occupation should be discriminated. NEP-2020 acknowledges the goal of education to develop a fully blossomed personality of an individual. NEP 2020 highlights equal opportunity and equality of work.

1.2.6 Vocational Curriculum and Pedagogy

Vocational Education is the pathway that prepares learners to gain skills and competencies in a specific field, expected to meet the era's needs. Lucas (2012) quotes "Vocational pedagogy is the science, art and craft of teaching vocational education". A curriculum is a collective bundle of planned activities consisting of topic-focused modules that incorporate graduate skills and allow students to expand their knowledge

and deepen their expertise through objectives, instructional strategies and assessments. The curriculum should follow the goals, scope and depth of the content, and the organization encouraging the development of hard and soft skills that can be applied in different situations (Arianty & Purwanto, 2018). The curriculum emphasizes key skills such as entrepreneurship, communication, self-management, green, and ICT skills (PSSCIVE curriculum).

1.2.7 Entrepreneurship

Entrepreneurship empowers national development and entrepreneurs aid in the subsequent economic development of the country. Today, it is the hour's need to create a new generation of Entrepreneurs. Entrepreneurship is an individual or collective system of developing something innovative, from conceiving an idea to starting a business. The idea of incorporating entrepreneurship into education, can lead to productive effects, including economic growth and generate self-employment opportunities.

1.2.8 Entrepreneurship in India

Craft-centric entrepreneurship in India is as primitive as human civilization. The rural community was India's economic activity centre before it came into contact with the west. Indian economy visualized several changes, as follows :

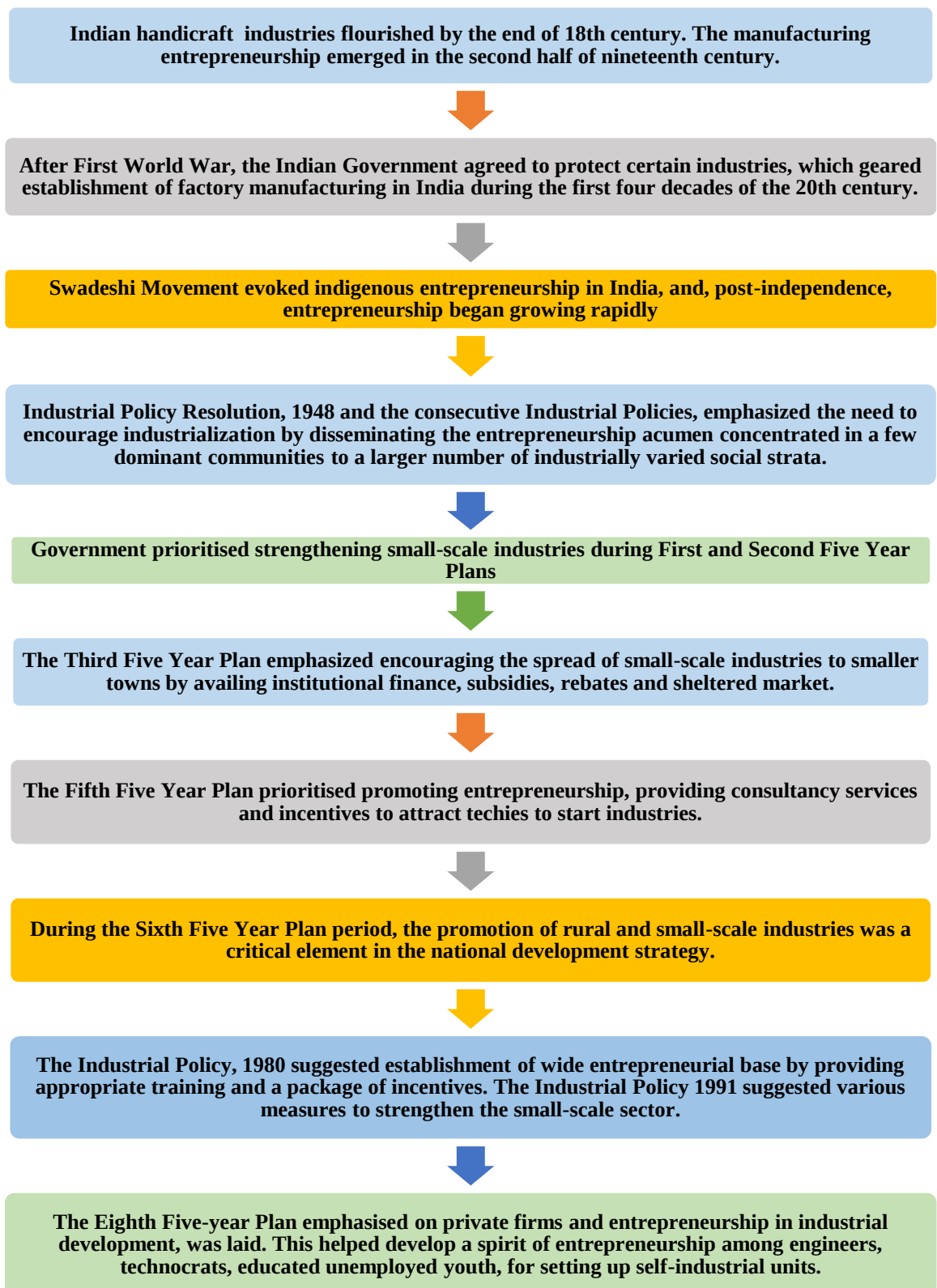


Fig F1.2: Entrepreneurial Development in India

1.2.9 Role of Entrepreneurship in Economic Development

The education system gears up the economic development of the nation and empowers human resources. Almost all endogenous growth theories and models recognize that human resources and education quality is vital for economic growth. Entrepreneurship is essential for rapid economic development in both developed and developing countries. Entrepreneurship's role in economic development is increasing per capita output and also transforming society. Increasing business supply, therefore, becomes an important aspect of the growth of modern society. The world we live in offers breathtaking contrasts. Some countries are very wealthy, but nearly two-thirds of the world's population live with below-average income, poor nutrition, poor housing, deficiency of medicines and illiteracy. Despite the remarkable technological advances, poverty remains a human concern even in the last part of the 21st century. Entrepreneurial interest essentially stems from a vested economic interest in a region or country. India possesses the possibility of giving birth to entrepreneurs. Entrepreneurship is considered a key determinant for industrial growth in any country. The historical schema of economic development in developing or developed countries, shows that entrepreneurs have contributed significantly in this regard. The nature and magnitude of such contributions vary from one society to another and from one country to another, depending on the responsibility of the industrial environment, material resources and political system.

1.2.10 Entrepreneur and their Skill Development

An entrepreneur is a human being who envisions an industrial enterprise with the soul intent to combine all and turn it into the production of desirable goods and services. Entrepreneurs should carry out these production-related activities solely for customer satisfaction. Entrepreneurs bring about general change through innovation to maximize

social benefit. Entrepreneurs are visionaries with good leadership qualities and a desire for peak performance, with the well-being of society as their top priority.

Our country is rich in young people with immense opportunities and entrepreneurial skills. Governments should therefore take immediate initiatives to build their skills for sustainable living.

Entrepreneurs create their own business unit by taking responsibility for risk and maintaining, managing and developing sales and production. Great entrepreneurs have special personalities that can inspire people and motivate them to work together. Entrepreneurs set up business units for production and sales, using various forms of business organization such as sole proprietorships and partnerships. Uncertainty is primarily associated with new ventures. Entrepreneurs take risks in businesses where profits are uncertain. Profit is the backbone of any business activity. Entrepreneurs have socio-psychological motivations, but the ultimate motivation is profit. Entrepreneurship is a major source of innovation to recreate new products, services, production methods and explore markets contributing to rapid economic development. Most successful entrepreneurs tend to modify their decisions according to circumstances. Entrepreneurs play an important role in the development of society. They work for us, create innovative products and services, encourage businesses, and create employment opportunities. Entrepreneurs start a new business. This opens up new opportunities and makes the best use of them. Entrepreneurs have a strong desire to improve their new skills and achieve excellence. They have strong self-confidence to attain achievement by creating self-employment opportunities.

An entrepreneur must be stupendously intelligent with creative thinking abilities for selecting the best among alternatives and should possess a sound leadership ability to

take rational decisions. The range of skills which an entrepreneur should possess includes-

Technical skills (monitoring environment, entrepreneurial management, technological know-how),

Management Skills (Planning, goal setting, maintaining cordiality, marketing, budgeting, accounting, ability to organize, network building negotiation, venture launch),

Entrepreneurial Skills (Persistence, discipline, communication with dealers and customers, risk-taking, innovation, team-leading).

“Entrepreneurial Development Institute of India” at Gandhinagar, Gujarat describes the *entrepreneurial competencies* as under:

Initiative-taking: Entrepreneurs should possess the competency to take the initiative to begin any task even before being asked or forced under the circumstances. The initiative-taking ability accelerates efficiency to create a sustainable competitive advantage for the enterprise.

Seeking and Acting on Opportunities: Entrepreneurs should intensify their access to physical and well as non-physical resources that help them grab unusual opportunities.

Persistence: Another critical competency that makes all entrepreneurs outstanding is perseverance and persistence, which helps them overcome obstacles without feeling low and continued efforts make them emerge victorious.

Information-Seeking: The information-seeking competency of entrepreneurs helps identify various information sources and ensures an interrupted information flow to ensure organizational accomplishment.

Maintaining quality: A skilled entrepreneur has the competency to beat existing standards of excellence with superior quality of his work, giving him a sense of accomplishment.

We are a young nation in an ageing world. This creates an opportunity to become a global source of skilled labour for under-developed countries. The development of skills and competencies in young people has long been advocated. The past decade has been instrumental in the emphasis on skills development programmes. The Government of India launched its first National Skills Development Policy in 2009, marking the beginning of competency-based skills development in the country.

Encouraging youth entrepreneurship becomes imperative to create employment opportunities that benefit many. The Indian economy needs to accelerate its transition to an economy based on technology, knowledge and innovation. There is a need to train, re-train and upskill everyone to participate in the global knowledge economy, driven by emerging technologies. Undoubtedly, entrepreneurship education has been identified as the most innovative way to prevent graduate unemployment globally, empower any country and maximize benefits from the global context. Discussing different perspectives on entrepreneurship and skills development under the guise of turning India into a self-reliant nation is inevitable. In this decade, when the need to empower our country is undeniable, we anticipate that we will have a fruitful discussion to come up with a new vision of entrepreneurship to enhance the development and prosperity of our nation.

1.3 Theoretical Framework

A perusal of the theoretical framework to get an idea of the existing theories in work-based education or vocational education along with the curriculum designing-cum-

evaluation models in action was necessary for the investigator to progress through the research problem.

1.3.1 Philosophical Theories on Work-based Education by Indian and Western Philosophers

1.3.1.1 Tagore's Rural Reconstruction Experiment

During Tagore's lifetime, rural India was much more backward. Thus, he found it necessary to start his development programme from the interior of rural Bengal, and even after selecting a single village, Tagore's main goal was to make that village self-sufficient. According to him, all the potential is inherent in the social structure. Tagore believes every human possesses strength, power, courage, and ability. Furthermore, each society has its own source of knowledge. But neither society nor its members are aware of it. Therefore, this potential power remains unused and people are entirely unaware of it. Tagore feels that the educated middle class is detached from this rural population as this population is the real foundation of Indian society and that India can only grow if and until the segment of society is adequately developed. It is enough to revive it and rebuild it. Tagore's rural reconstruction model was widely debated and criticized throughout his life, and contemporary society was reluctant to accept him as a "one-size-fits-all" for the upliftment of rural India. But Tagore as a visionary, recognized rational, scientific and practical solutions to so many upheavals associated with the lives of the rural masses in our society. Today it takes the exemplary leadership to realize all of Tagore's ideals of rural upliftment through collaborative effort, analysing and solving the problems of village life through a holistic perspective.

1.3.1.2 Gandhi's Nai Talim for Livelihood Education

“Nai Talim” is ‘education for life’. It is synonymous to “basic education”. Its aim is to make a child self-reliant by equipping him with relevant knowledge and skills in real-life situations. It is child-centred education- adjacent to the needs and interests of a child. Nai Talim supports the spirit of ancient Indian education, based on the rich Indian culture and supporting their values.

Table T1.2: Postulates of Nai-Talim

1. Free and compulsory education	Free and compulsory education is entitled to every child on a nationwide scale from 7-14 years.
2. Medium of Instruction	The medium of instruction should be mother tongue.
3. Productive work	Education should be imparted through a useful and productive craft.
4. Training of teachers	The teacher should possess the best character, be well- trained and possess expertise of the subject.
5. Co-relation between subjects	Subjects bear strong correlation with each other.
6. Industrious	Knowledge and work are not separate. There is no alternative to hardwork for being victorious in education.
7. Practical knowledge	Education centres around real-life knowledge where one can get the opportunity to make newer discoveries.
8. Child- centredness	Education should develop child's personality- body, mind and soul.
9. Holistic process	Nai Talim encompasses the chained process of tutor-tutee-tuition.
10. Inculcation of Values	Education creates a sense of brotherhood, cooperation and social service among children.

Nai Talim builds child's creativity. It upholds the dignity of an individual. Nai Talim has a democratic format- education for all, equality, cooperation, a universal mindset, and civic spirit. It addresses the modern value of education while preserving the tradition. In Nai Talim, the curriculum of all subjects is intertwined in a network. It connects the body, mind and soul.

1.3.1.3 Dewey's Pragmatism

Understanding Dewey as a pragmatist involves four cardinal concepts in the philosophical tradition of pragmatism – concrete experience, reflection, abstract conceptualization, and application.

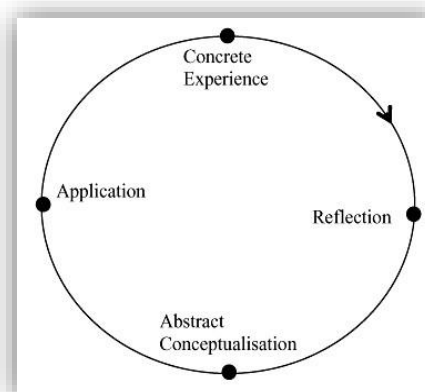


Fig F1.3: Dewey's Pragmatism

1.3.1.4 David Kolb's Experiential Learning Theory

David Kolb's theory on experiential learning is an accomplished learning approach. The experiential learning cycle is a cyclic four-step learning process that repeats in every interaction and experience.

It is a learning process that begins with a particular experience, requiring reflection, reconsideration, putting the experience into perspective, then thinking abstractly to draw conclusions and conceptualising meaning from experience, leading to action.

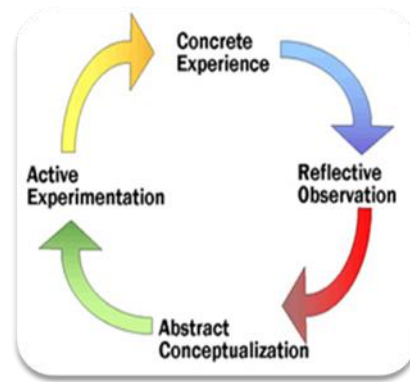


Fig F1.4: David Kolb's Experiential Learning Cycle

1.3.2 Psychological Theories on Entrepreneurial Intention

1.3.2.1 Ajzen's Planned Behaviour Theory

Ajzen (1985) proposed the Theory of Planned Behaviour, which states that an individual's behaviour is influenced directly by intention chiefly, revolving around attitude, subjective norms and perceived behavioural control (Jing et al., 2019). After reviewing an earlier theory called Theory of Reasoned Action by Fishbein and Ajzen, 1969, he came up with his own theory, illustrated in the following figure.

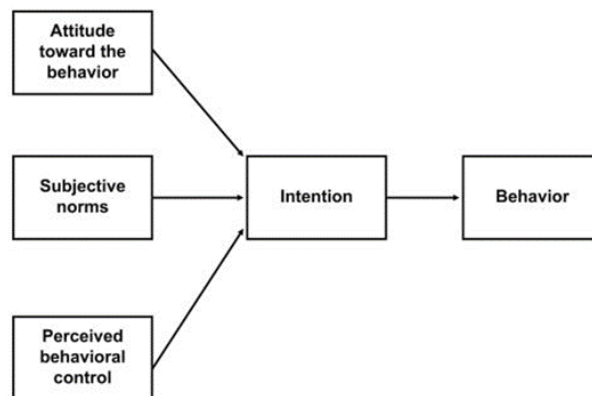


Fig F1.5 : Ajzen's model of planned behaviour

Ajzen's theory demonstrates three antecedent factors – attitudes, subjective norms and perceived behavioural control, which were designated by Kolvereid (1996). Socio-

economic and psychological factors and other decision-making processes determine behaviour. Intention directly affects the achievement of specific goals and behaviours in the theory of planned behaviour. Behavioural intention refers to the individual's tendency to engage in a specific behaviour. Attitude can be understood as the product of a subject's perception of the behaviour and its outcomes (Al-Mamary et al., 2022), reflecting the subject's expectations and evaluating the consequences of certain behaviour. While attitude is significantly related to intention, subjective norm refers to the group's expectations and attitudes towards the subject. Cognitive behaviour refers to the degree of control and difficulty in performing a particular behaviour.

1.3.2.2 Modified Theory of Planned Behaviour in Entrepreneurship

The planned behaviour theory, proposed by social psychologist Icek Ajzen, predicts an individual's behaviour in different domains. When applied to entrepreneurship, the theory suggests that engaging in entrepreneurship is better predicted by intention than by personality, demographics, or beliefs.

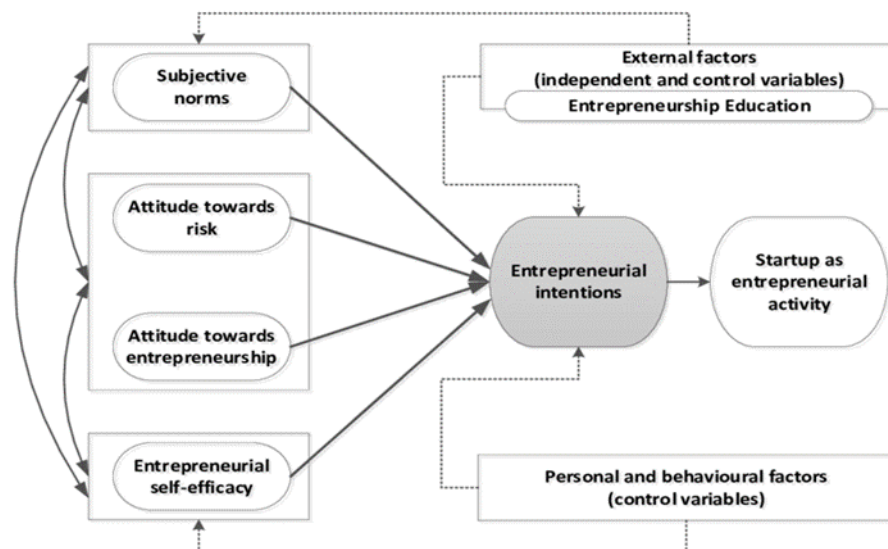


Fig F1.6: Ajzen's Modified Theory of Planned Behaviour for Entrepreneurship

Entrepreneurial intention refers to an individual's intention to start an enterprise. Exploring the studies on entrepreneurial intention, researchers began considering the influencing factors affecting entrepreneurial intention including psychological characteristics, individual outlook and perceptions of entrepreneurs and analyzed the evolutionary mechanism of entrepreneurial intention (Shapero and Sokol, 1982; Shaver and Scott, 1991; Kickul and Krueger, 2004).

1.3.2.3 Shapero and Sokol's Entrepreneurial Event Model (EEM), 1982

Shapero and Sokol (1982) proposed a model, which considers factors influencing one's intention to start a new entrepreneurial venture. This model considers three factors for predicting Entrepreneurial Intention: Perceived desirability, perceived feasibility, and propensity to act. Perceived desirability is the degree to which an individual finds the prospect of starting a venture attractive. Perceived feasibility considers an individual's belief of his self-efficacy to start a enterprise (Shapero & Sokol, 1982). Finally, propensity implies individual's tendency to act according to his/her decisions (Shapero, 1975).

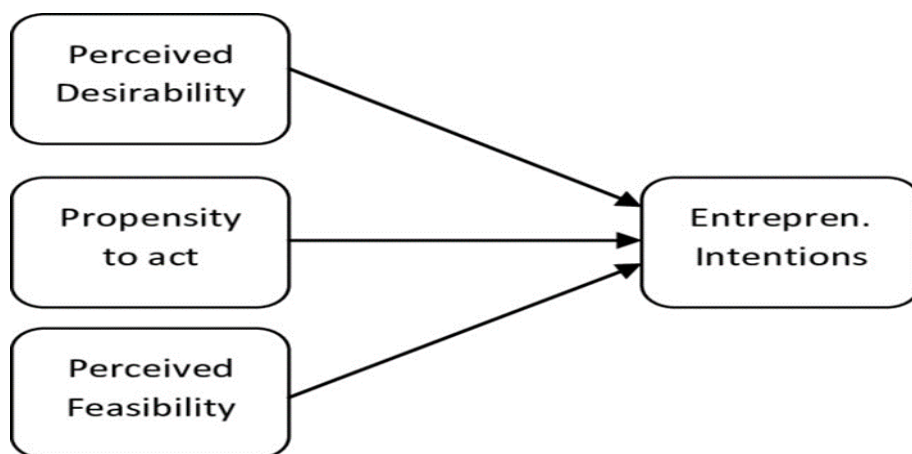


Fig F1.7 : Shapero and Sokol's Entrepreneurial Event Model, 1982

1.3.3 Curriculum Development Models

1.3.3.1 Taba's Model of Curriculum Development

Taba's curriculum development model has listed seven steps as below:

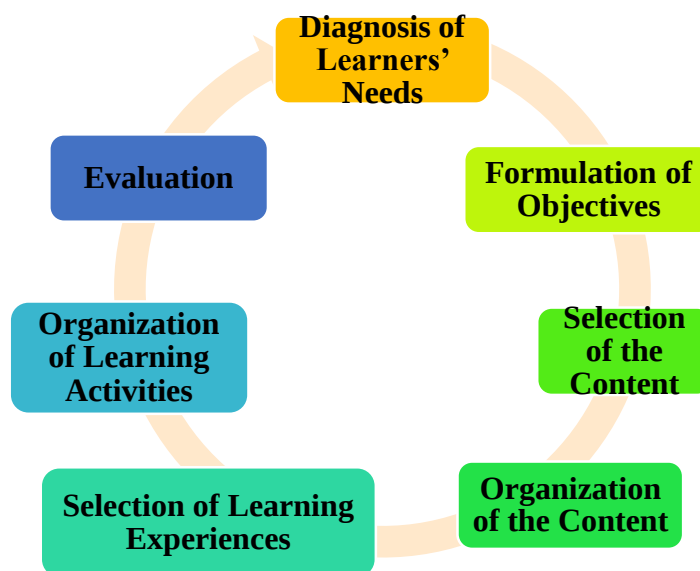


Fig F1.8: Taba's Model of Curriculum Development

1.3.3.2 Functional Models of Curriculum Development

There are several functional models for program development, but two Hungerford-specific models are mentioned most often. Hungerford's first model was called the "Interdisciplinary or Diffusion model"; the second is called the "Multidisciplinary or Infusion Model".

Hungerford diffusion model

In this model, all relevant components from different educational disciplines are disseminated, drawn from their respective fields and brought together in a common discipline or discipline.

Hungerford infusion model

In this model, common sustainable development concepts/skills/attitudes are integrated or embedded in different subjects and common subjects without introducing new subjects or courses, making the course structure more cumbersome.

The combination of the two so-called models, or the Hybrid Model, is considered even more relevant in integrating Education for Sustainable Development (ESD) into vocational training curricula. This allows the creation of a new multi-dimensional discipline for vocational training and a focus on emerging professions and provides ready-made proposals on the relevant integration of sustainable development (Majumdar, 2009) to prepare aspiring personnel for the world of work.

1.4 Significance of the Study

After a long 34 years, in 2020, the National education policy- an innovative, democratic and student-centred policy surfaced, outlining a new vision for the education system in India. Leaving aside the previous National Education Policy (1986), NEP 2020 proposes a comprehensive framework to revolutionize the education system in India, with particular emphasis on integrating vocational education.

In addition to proposing fundamental principles for educational change related to indigenous knowledge, culture and values, NEP-2020 proposes reforms in all areas of education, including structural, curriculum, pedagogy, teaching-learning strategy, teaching-learning resources, technology inclusion, vocational education, skills and employment, 21st-century learning, life skills, learner support, assessment methods, internationalization, research and funding, governance, leadership and regulation.

The key recommendation of the National Education Policy 2020 in educational institutions is competency-based experiential learning.

“In all stages, experiential learning will be adopted, including hands-on learning, arts-integrated and sports-integrated education, story-telling-based pedagogy, among others, as standard pedagogy within each subject, and with explorations of relations among different subjects. To close the gap in achievement of learning outcomes, classroom transactions will shift, towards competency-based learning and education” (Para 4.6, NEP 2020).

Education through work is a method of integrating work into education. The function of education through work is to impart the knowledge and competencies necessary to advance the discipline. It plays a key role in developing the country's suitable human resources by creating skilled personnel, enhancing industrial productivity and improving quality of life. NEP 2020 recommends that flexible curriculum structures allow for creative combinations of disciplines, breaking existing boundaries and creating new opportunities for lifelong learning. It has also been observed that flexibly innovative curricula may involve entrepreneurship towards attaining holistic and multidisciplinary education.

Entrepreneurship compels people excluded from mainstream society and lacking access to employment opportunities to overcome their problems using innovation, enhancing the probability of individuals or groups experiencing holistic development (Austin et al., 2006). Also, entrepreneurs strive to ensure that they are fed with sustainable solutions providing social and economic returns (Tan, 2005; Klewitz et al., 2012) to generate a social impact by reaching financial sustainability (Emerson and Twersky, 1996).

Atmanirbhar Bharat is a pioneering mission of our honourable Prime Minister Shri Narendra Modiji, emphasizing self-reliance. Our socio-economic scenario has changed much and the upcoming generation is ready to face a different future from previous generations. Education can trigger individual, social and national development in the 21st century. The 21st century has posed many challenges along with opportunities. The key

responsibility of education is to create a future generation that will significantly fight these odds, become self-reliant, creating ‘*Atmanirbhar*’ nation.

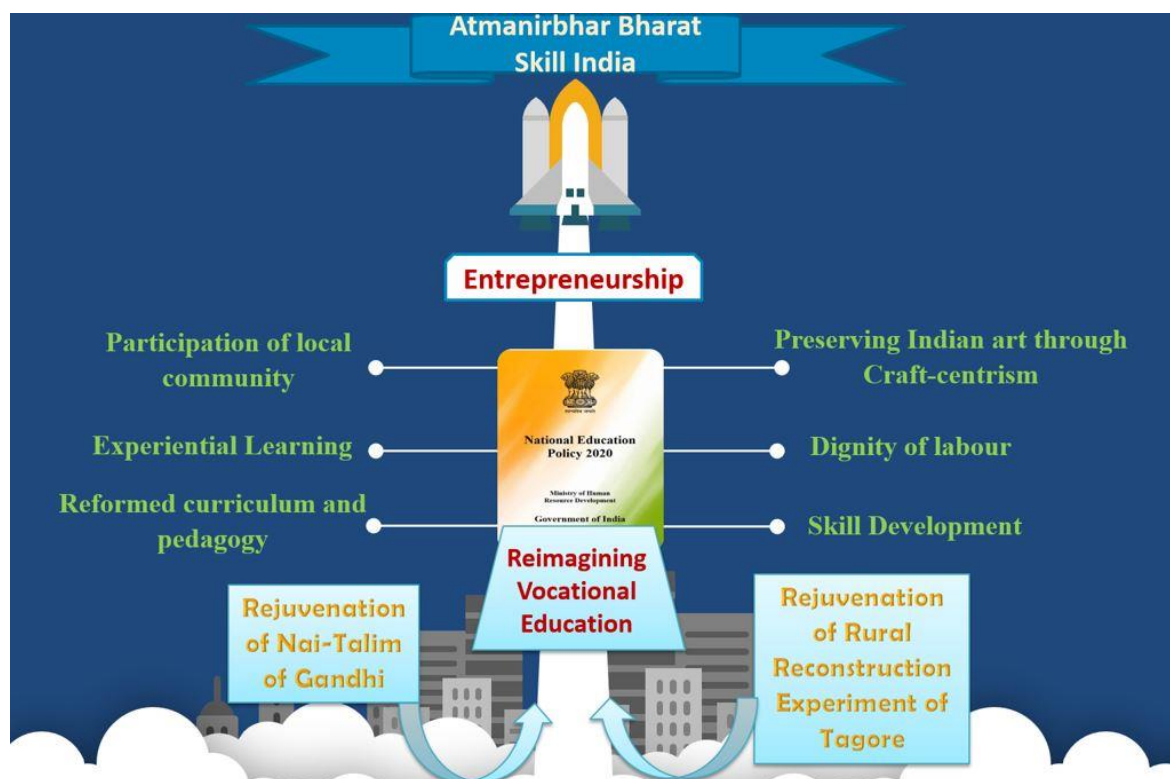


Fig F1.9: Significance of the Study

Previous studies on curriculum designing and pedagogy have been conducted either for linguistics (Dode Vivek, 2015) or physical education (Vanaja, 2007) targeted for school learners. However, neither craft-centric subjects nor vocational pedagogy have been considered for research in plenty. However, the need of vocational stream empowerment has been felt by many (Mujumdar, 2012; Akram, 2012; Sermsuk, Chianchana and Stirayakorn, 2013; Sharma, 2015; Ansari, 2015). Investigators have generally taken up pottery to examine the socio-economic conditions of the artisans working in the field meticulously (Ghosh, 2014; Kasemi, 2014; Sahoo et.al., 2016; Barman and Hazra, 2017; Saha, 2019; Pramanik et.al., 2021) focused in one particular pottery site only, or in some cases, traced back the history of pottery (Sikdar and Chaudhuri, 2015; Gupta, 1988).

Learning module development is common in researches-Environmental Education Module (Fernandez, 2009), e-module for English learning (Lenin, 2021), but not in pottery. Considering the research gaps, this study holds profound significance for its contribution towards the academic and research community and education system of India as a whole.

The theoretical framework already stated earlier, describes the rural reconstruction experiment of Tagore and Nai-Talim of Gandhi. Tagore's rural reconstruction experiment is dedicated to entrepreneurship by providing vocational opportunities to the local villagers, teaching and training them for economic development and building self-reliant rural communities. Gandhi envisioned India of his dreams through Nai-Talim, where entire education can be integrated and imparted through some vocation. Gandhi's Nai-Talim aimed for a radical restructuring in the pedagogy of schools in India, whose cardinal principle was craft-centered education through experiential learning.

With the rejuvenation of these theories, the study aims to reimagine vocational education through NEP-2020, which recommends skill building of learners through entrepreneurship, targeting Atmanirbhar Bharat – Skilling Indian youth. Hence, the study stands out to be unique in the present scenario.

1.5 Statement of the Problem

Curriculum serves as the best catalyst for the learners. The positive attitude created by the curriculum and learning design in the learners' minds can help them go for a paradigm shift about their future. The teachers' vocational learning strategies and proper facilitation of the learners for skill development without any disparity based on income, societal strata or location, resources and work-based activities create a behavioural modification in the learners' minds. Keeping this background in mind, the researcher

realized that in-depth study of the vocational programmes and designing a curriculum model based on needs and skill development would be an essential area of research. Subsequently, the research will generate sustainable livelihood opportunities for learners. Hence, the present study focusses on exploring the rural communities in India where the people rely on pottery as the source of livelihood, has been continuing for generations and it is likely the upcoming generations can sustain their families by keeping this historic craft alive for years to come.

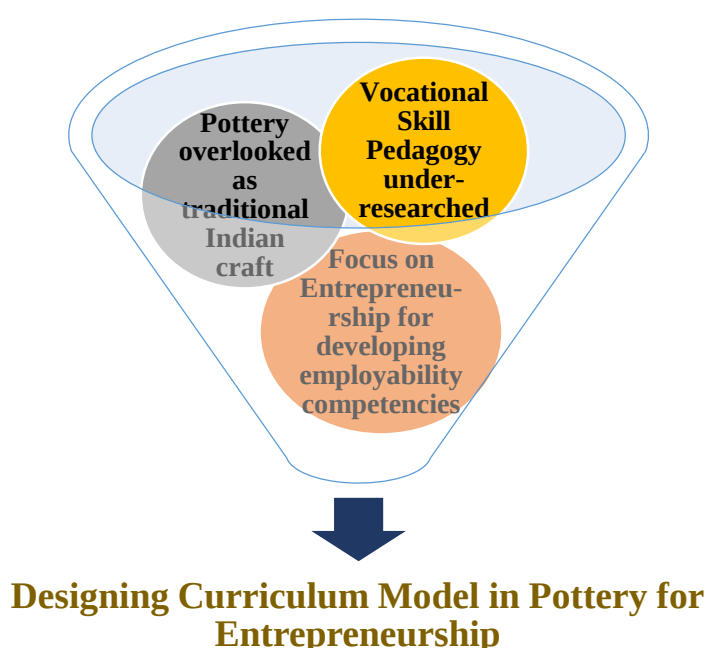


Fig F1.10: Stating the Problem

Moreover, it has been realized over the years that the focus should be on Entrepreneurship for generating employability skills as opposed to rote learning. Thus, the problem is stated as ---

“Designing Curriculum Model in Pottery for Entrepreneurship”

1.6 Objectives of the Study :

O₁ : To assess the entrepreneurial intention among learning aspirants in pottery

O₂ : To assess the perception of need for a curriculum in pottery among learning aspirants

O₃ : To know the relationship between entrepreneurial intention and curriculum need perception in pottery

O₄ : To understand the skills, competencies and challenges in pottery from field functionaries

O₅ : To design a curriculum model in pottery for entrepreneurship

O₆ : To prepare learning module in pottery for entrepreneurship

1.7 Hypotheses and Research Questions :

H₁ : There will be an entrepreneurial intention among learning aspirants in pottery

H₂ : Learning aspirants will have a perception towards the need for a curriculum in pottery

H₃ : There will be a relationship between entrepreneurial intention and curriculum need perception in pottery

RQ₁ : What are the skills, competencies and challenges in pottery among field functionaries ?

RQ₂ : How to design a curriculum model in pottery for entrepreneurship?

RQ₃ : How to design the learning module in pottery for entrepreneurship?

1.8 Operational Definition of the Terms :

The researcher finds it significant to conceptualize the terms used in the study. The key terms have been operationally defined in the following section for a clear understanding of the readers-

1.8.1 Designing a Curriculum Model

In the context of this thesis, designing a curriculum model can be defined as designing the structural framework of a curriculum in pottery for developing competencies and skills, including the intended learning outcomes, content, teaching-learning strategies and evaluation techniques targeted for learning aspirants who are willing to take up pottery as primary or secondary career.

1.8.2 Pottery

In the current study context, Pottery refers to the activity involving the skill of making utilitarian clay objects after being fired at high temperature, giving them a hard, durable form.

1.8.3 Entrepreneurship

Entrepreneurship, with respect to the present study, refers to the driving force which enables users to use all resources for competency and skill development to run an enterprise, managing all hurdles on the way to make profit for self-reliance. In this context, entrepreneurship focuses on skill development and sustainable livelihood.

1.8.3.1 Skill Development

In the context of this research, skill development means the capacity and proficiency growth of people acquired through curriculum experience.

1.8.3.2 Sustainable Livelihood

Livelihoods can be operationally defined as meaningful and socially productive participation. In this context, sustainable livelihoods refer to economically viable pottery production activities with the objective of generating livelihood and ensuring the survival of active functionaries in pottery.

1.9 Delimitations of the Study

1. The study is confined to places with a high congregation of actively working artisans in pottery. Places popular for pottery, where the craft has been customarily exercised across generations have been considered as the study sites.
2. The study is also delimited to the trade entrepreneurs procuring and selling pottery products, which is their sole livelihood option.
3. The study delimits the learning aspirants of the curriculum model in pottery to those with moderate entrepreneurial intention and moderate to high perception towards a curriculum in pottery, and are willing to take up pottery as a primary or an alternative career.
4. The study is confined to pottery clusters of West Bengal.
5. The study is confined to 4 villages in 4 districts of West Bengal, famous for their pottery artistry.

1.10 Chapterisation – An Overview of the Study

The study is consolidated in the presentation of a report in five chapters.

The first chapter outlines the problem under study through the background of the study.

The theoretical and conceptual frameworks supporting the study are outlined in detail.

The significance of the study, problem statement, operational definitions, hypotheses, research questions, objectives, delimitations, and organization of the report are presented in this chapter.

In the second chapter, the investigator has discussed the research constituents of some relevant literature, including, research papers, unpublished dissertations, theses, project reports and even newspaper articles. Highlighting the previous research findings has provided the baseline to proceed with this research.

Chapter I/Introduction

The third chapter describes the methodology used for this study. Research Methodology vividly includes techniques of data collection, also explaining the research method. It includes research design, population, sample, and construction and standardization of the tools that have been employed in this study.

The fourth chapter dispenses precise analysis with interpretation of the data. This chapter focuses its attention on data analysis and interpretation. Analysis related to the responses provided by the variety of respondents including learning aspirants, skilled craftsmen and trade entrepreneurs in pottery have been analyzed using appropriate data analysis techniques.

The fifth chapter throws light on the major findings, summarization of the present investigation, discussion of results, conclusion, educational implications, recommendations and suggestions for further educational research.

CHAPTER II REVIEW OF RELATED LITERATURE

CHAPTER II

REVIEW OF RELATED LITERATURE

“The keys to the vast store house of published literature may open doors to source of significant problems and explanatory hypothesis and provide helpful orientation for the definition of problem, background of problem procedure and comparative data interpretation of result.”

- Good

2.1 Introduction

Much research has been conducted over the past decade and national policies have been developed to rethink how learners are to be educated. Educational institutions have proactively played a central role in promoting experiential learning to support skills development for all learners. In this chapter, the investigator reviewed numerous studies conducted in curriculum development and pottery in global, regional and local contexts, aiming to design a pottery curriculum model, build learning modules, and implement and evaluate them. A literature review involves systematically identifying and analysing studies to determine what already exists related to the research problem (Gay, 1996). Thus, this chapter has attempted to review the studies related to this study. In the present chapter, the researcher gives an account of the studies taken up in India and abroad, categorised under the following heads-

- Curriculum Design, Pedagogy and Evaluation
- Work-based Learning Models and Vocational Education
- Pottery
- Entrepreneurial Intention
- Skill development, Experiential Learning with Sustainable Livelihood

The literature has been systematically organized according to the aforementioned concepts strongly related to the research problem under study, to view and strengthen the

ground of the problem and establish the importance of the present problem on curriculum model development in pottery. This review helped the researcher make the present study precise and correct for further research studies. Also, the related literature presented here is arranged **chronologically**- newer to older, to observe the research trends that we work on now to those conducted long before. The following is an account of the studies reviewed by the researcher for ground work, classified on the basis of related themes.

2.2 Related Literature

2.2.1 Studies on Curriculum Designing, Pedagogy and Evaluation

Wu et al. (2018) intensively proposes curriculum infusion model to improve creative thinking among learners of Teacher Education Programme at Taiwan. This model infuses creative thinking skills into the programme – compulsory courses, teaching-learning activities to understand theories, improvement strategies and implementation into life. This research also uses a creative thinking self-assessment scale to measure learners' creative thinking.

Arianty and Purwanto (2018) looked at vocational education curricula in countries such as Singapore, Australia and Finland, structured according to industry-required standards to describe changes in vocational education curricula of taxation from the University of Indonesia. This study is a descriptive analysis of the needs of the industrial world of graduates of professional programs in the tax field and to tailor them to the curriculum. Data were collected from interviews with graduate users as respondents from the Tax Administration Research Program under the Professional Program of the University of Indonesia. Data was also collected from the follow-up study using a questionnaire. Secondary data were obtained from the review documents. Graduates will have several skills. Research shows that, based on curriculum evaluation, curriculum

structure, the naming of subjects, and the allocation of courses by semester have been modified. The tax administration research professional training program aims to continuously improve, on a flexible basis, with an emphasis on technical skills and expertise in the tax field, to adapt to the needs of the industrial world.

Moganty (2017) attempts to show the complex relationship of raising children with Gandhi's moral principles, the protection of rural life and the environment to ensure sustainable development. Values are presumed to be developed through “Value-based education in culture and curriculum-Gandhi’s ideas for sustainable development”. The values have been respected and adhered to by historical personalities and nations for generations, contributing to the maintenance of quality life. Living in an economically developed world, we are moving away from a value-based culture. Children are also educated and raised in this world dominated by corporate education and consumerism, so tomorrow they will suffer the consequences for the way we raise them. Gandhi's educational ideas will greatly help the child become skilled and self-reliant.

Albashiry, Voogt and Pieters (2015) conducted a case study to investigate how administrators and teachers explored the challenges and needs of academic departments in curriculum design at a community college in Yemen. Respondents included 199 students, 45 teachers, 13 administrators and 46 alumni. Primary data was collected from interview schedule and questionnaire while secondary data were obtained through the textbooks. The programme course description was found to lack clarity, and the programme design process was largely content-based, personalized, and focused on course changes. Lack of resources, teachers' character, and management hierarchy are major challenges in programme design. The study concludes that curriculum design approaches are not conducive to professional programmes with internal as well as

external consistency, and that the challenges delineated are often related to the evolving context. Practical implications are discussed at the end of the study.

Lucas (2015) introduces the term ‘vocational pedagogy’, and depicts five key steps in developing vocational pedagogy. The research shows various engaging methods in teaching-learning of vocational education, dimensions of decision-making for teachers in pedagogy. The research points out that vocational pedagogy is under-researched and under-theorised. Also, six vocational goals are cited, listed as “routine expertise, resourcefulness, functional literacies, craftsmanship, business-like attitudes and wider skills”.

Dode Vivek B (2015) analytically studied Curriculum Design for English as Second Language (ESL) at Undergraduate Level in Maharashtra. The present day syllabi of English have considered both language and literature as important components. Therefore, the curriculum designer has given equal significance to the language and literature components in designing the curriculum. In the curricula of different universities in Maharashtra, the literary concept through the components like prose and poetry have been introduced. Language and communication concepts and skills have been introduced by the components like grammar, and developing language skills. On the other hand, the ELT situation in India has been constantly facing the dilemma whether the students of ESL are to be taught literature or only language skills. In the past, the curriculum designers always preferred the literature studies in our curriculum. However, some scholars and critics think that literature belongs to a different field and is inappropriate for teaching language. The curriculum maker has to consider the place of literature in English curriculum. Although language skills are given prime importance, literature's part can also be retained in curriculum. Some consensus seems to have been reached in this regard. It seems that the curriculum designers in ESL have recognized

that literature can help in teaching of language skills. Literature can also create an element of interest in the learner's minds. This consideration has been taken into account by the present day curriculum designers and therefore the literature component has not been completely discarded.

Sermasuk, Chianchana and Stirayakorn (2013) conducted a study to develop a vocational course curriculum model using cross-impact analysis. Data was collected through primary interviews and evaluation with the experts. Findings revealed that the vocational curriculum model consisted of three parts: Input, Process and Outputs and ensured the possibility to be used for implementation, subjected to further evaluation.

Vanaja Kumari (2007) conducted a research work on the development of curriculum design of physical education for schools in Andhra Pradesh. The different conclusions drawn from the findings of the study, states that the status of existing physical education curriculum in Andhra Pradesh State is not up to the level of satisfaction, as inadequate facilities and laxity towards games, sports and physical education could not get the status of a separate subject and did not get an adequate place in education policies. The schools do not have an adequate number of teachers of physical education required to meet the student's strength for proper implementation of the curriculum. The school authorities were reluctant to provide adequate classes and time required for physical education classes. Many schools had expressed their opinion about the financial constraints as significant obstacles before implementing the physical education curriculum. Respondents opined that physical education is beneficial in enhancing the all-round development of individual's personality. Wellness and its effect on lifetime fitness are accepted worldwide in the physical education curriculum. Physical education has been accepted as an academic subject, as it involves the knowledge of physiology, psychology

and sociological concepts related to human performance. Health education, which assists in developing healthy and physically active person, was accepted as an important content in the physical education curriculum.

2.2.2 Studies on Vocational Education and Work-based Learning Models

Ramaswamy and Pilz (2020) used a qualitative exploration of “a demand-driven approach in vocational training” for rural populations by focusing on individual learners’ perspectives to situate them being at the centre of skill development process. Data about challenges in real-life contexts was obtained using focus group discussions and face-to-face semi-structured interviews. A competency-based vocational training course was designed and evaluated based on the challenges and needs from context-specific and flexible targeted women learners. Results revealed that the demands of rural population varies: training access, training duration, economic returns and socio-economic factors highly influence participation in the course. This approach works best when involving pertinent stakeholders and target groups in the learning designing process.

Shasa and Sreedharan (2015) carried out a research investigation on “Earthian Program - Through the Lens of Work and Education”. Earthian is a sustainability education programme for educational institutions run by Wipro. This research considers the school programme only. Earthian is an annual programme where teacher-guided student teams participated in an activity-based learning programme and ten schools that perform comparatively better were randomly selected for an award. Later, the team worked together with the selected schools at the curricular, school and classroom level to evaluate the programme for the sustainability of education.

Sharma (2015) highlighted that the inclusion of work in education acts prior more than vocational education. This has a significance in learning, also serving as a means for holistic integration in education. The findings of the study indicate that it is necessary to

develop teachers' vision, motivation and capacity to facilitate this as it requires much more professional acquisition than conventional teaching. Works embedded in craftsmanship are easier to observe and create, providing a concrete context for learning. However, not everything can be easily integrated into productive work. A good mix of activities related to the environment and the local community can create a dynamic learning environment.

Sahu, Gulshan and Yadav (2015) illustrated a unique concept of “Learning While Helping”. The researcher carried out a qualitative study in rural backdrop to bring about development. As they were seeking information, children in the village started interacting with them and became a part of the research and learnt few things through experiential learning. The children became involved in building negotiation and communication skills. They started working in groups to complete small tasks and realized the importance of collaborative work. A respondent child revealed that the thought of being able to help a researcher, made him happy, someone whom he considered was doing some ‘serious’ work. This made the whole exercise significant, irrespective of any other outcomes.

Rangachary (2015) has stressed on “Learning Life-long” which discusses that education is both human and an organic human system for people. The equal importance of maths and science with artistic expression will provide diverse learning styles. The curriculum should be upgraded by bringing experiential learning, encompassing the head, heart and hand coordination in everything they do and learn. Theme story-based learning also helps children make more sense of reality and apply it to acquire scientific knowledge. It requires sensible teachers to educate parents and the community about the desirability of this enlightened and democratic form of learning.

Ansari (2015) in his research article – ‘Education through Work and its Relation to Other Subjects’ discussed in details how education was taught to the students from nearby villages through mushroom farming. Most of the curricular concepts are being incorporated through mushroom farming, giving them knowledge and livelihood for every farmer in these villages.

Purohit (2014) explored the Alternative Education Programme run by Digantar, Rajasthan- its philosophical basis, historical emergence, objectives, admission procedure, curriculum framework, learning experiences, classroom interaction, learning environment, evaluation process, teacher’s role, parents and community development. The Mixed Methods approach was adopted for the study, and data were collected using interview and observation. The study lays down that Digantar has done exemplary work in the field of alternative education at the elementary level, in India. Innovations in learning experiences shall make a long-lasting impression and may lead to qualitative improvement in the scenario of elementary education of our country.

Mujumdar (2012) completed a research thesis on the current education, training and professional skills development regulatory system in Maharashtra state and identified issues related to Low industry involvement in education and career skills development. The researcher investigated the possibility of acquiring advanced skills in the field of vocational education among students of ITI and vocational colleges.

Akram (2012), in “Formal Education, Skills Development and Vocational Training: The link is missing in India,” asserts his view that education turns out to be the foundation of a sustainable society only if it imparts life skills. Knowledge and skills are the driving force of a country for social development and economic growth. The economy is embellished towards more productivity, innovation and creativity to enhance human potential – the vision of Gandhi in his "Nai Talim". An educational module without any

skills development training cannot make up the building of a scholarly society. The contribution of education depends on the values it teaches and the skills it imparts. Skills development, or vocational education, distinct from formal education, is a thing of the past. As the harbinger of mass education, formal education inevitably heralds social changes by expanding its accessibility and affordability, as opposed to its limited reach of medieval elite education. The attained educated status is seen as a catalyst for mobility in traditionally stratified societies such as India. However, improved social status, not corresponding to upward economic mobility, will have limited effects. Education in the "adopted form and content" can achieve the benevolent instrumental goals in India, well understood by many sociologists. This article critically analyzes the shortcomings of formal education in India and addresses issues concerning human resource development. He suggested that the professionalization of formal education, can ensure the economic and social development of the masses.

Majumdar (2009) pointed out major challenges in integrating sustainable development in Technical and Vocational Educational and training. This research specifies three pillars of TVET – Environmental, Economic and Social sustainability, whose balanced approach helps in workforce development, for acquiring knowledge, skills and values. Challenges were identified, such as understanding the meaning and scope of education for sustainable development, mapping key skills, attitudes, and general knowledge about sustainable development, applying functional models to integrate sustainability into TVET curricula (imitating Hungerford's Diffusion and Infusion model), linking to specific sustainability learning outcomes and by teaching about sustainable development with an innovative pedagogy.

Verma (2008) studied the effectiveness of Aurobindo's integral education at the secondary school level in terms of cognitive learning and non-cognitive learning

outcomes in Mirambika educational institution. The study is multi-dimensional and incorporated Descriptive assessment, Content Analysis, Experimental as well as Case Study method by analyzing data obtained by reading and analyzing Mirambika booklets, Planning and Evaluation sheets of Mirambika, Participant and Non-participant Observations and Interviews with Parents and Children. Inductive data analysis was attempted for the study involving the patterns, themes, and categories from collected data. It was reflected that there was a positive attitude of learners and teachers towards Aurobindo's Integral Education system and a significant relationship existed among different aspects of his Integrated Education system. Also, a significant difference existed between experimental and control groups on the various aspects of Aurobindo's Integral Education system.

Bhattacharya (2002) synthesizes the educational thoughts of Tagore, Gandhi and Grundtvig in the context of lifelong learning. They shared a common thought to develop rural university, to take pertinent decisions regarding the reconstruction of villages. Topics related to rural economy and rebuilding villages will be taught and researched. Rural development of physical and material resources, and grassroots planning at the national level will also be studied. These universities are to be established at the district level. If planning from the grassroots level is implemented to district level, entire rural strata will be included in this development programme. These organizations must function without entering the narrow politics that plague our society. Sufficient funds must be allocated for this purpose. Each institution must have provisions for the three components of lifelong learning – “learning for life, learning for livelihood and learning throughout life”.

Lali (2002) submitted a thesis on developing and evaluating integrated educational models using environment and community resources, intending to sensitise teachers and

educational workers about the pedagogic potential available in the immediate environment. The study also aimed to identify local resources relevant for transacting various aspects of the curriculum, to help pupils acquire a variety of skills and competencies, to help the school outstrip the in-house compartmentalised pedagogic transactions through integrated approaches. The investigator aimed to present individual and institutional cases for achieving community excellence, to inspire educational associates by conducting pedagogic analysis relevant for proceeding from general to specific, from application to principles and to develop optimal models for using community resources in education. A descriptive content analysis-based case study and the experimental method were employed for the study. Fourteen Cases were studied, including Mitraniketan of Kerala to give insights into identifying indigenous pedagogic resources. Documentary analysis and observations throughout the research period showed that the community is full of abundant resources, which could be tapped and used to realise educational objectives. Informal experiments conducted by the investigator and collateral studies showed that pupils learning through active exploration of nature and community resources, finds learning more exciting and meaningful. The experience of conducting this research has suggested hundreds of teaching, learning, and living models that focus on unity in diversity, community learning, and invisible pedagogy.

Chand (1996) researched on curriculum innovation in rural higher education institutions: Gram Vidyapiths of Gujarat, conducted in-depth surveys and interviews with teachers from 8 Vidyapeeths to explore institutional factors influencing curriculum, curriculum policy factors affecting affect the implementation of the program, the influence of external socio-economic trends on the programmes, the teachers' responses; alumni of 5 Vidyapiths; and semi-structured interviews with students of Vidyapiths. The data for

each category is inductively encoded and grouped by identifiable themes. The properties of these themes was cross-checked with checklists prepared using documents related to Vidyapeeth education, writings by Vidyapeeth movement founders and Vidyapeeth experts. Several Vidyapeeth founders were also interviewed and 2 Vidyapeeth programme material was studied. Frequent field visits to the selected Vidyapiths were made to observe Vidyapith activities and classroom interactions, and in some cases, for group discussions with teachers and students. Curriculum experiments were also conducted in some Vidyapiths. Data analysis was performed with SPSS/PC+ software, which suggested three important trends among teachers: the influence of environmental pressures on the curriculum, with emphasis on facilities, subject organization and work practices; alternative development models and teacher development issues. A prominent feature of the Vidyapith educational model, mostly cited by teachers, is "hands-on" learning, which is essential for "preparing students for life", through the philosophy of "learning by doing", for "self-control". Students rated professional skills as the most crucial curriculum expectation and autonomy as the most important cause to join Vidyapith Education. Preference for higher studies and salaried employment in the formal or semi-formal sector emerged in contrast to setting up a non-farm enterprise or self-owned agricultural enterprise among enabling graduates. The alumni seemed to reflect a commonly-held perception of the Vidyapeeth education model, which combines value education with promoting self-reliance among its students. The alumni suggested reforms in Gram Vidyapith system, including preliminary exposure to what can be expected, acquainting students with the feedback of alumni who have undertaken similar projects for developing many skills.

2.2.3 Studies on Pottery as an Occupation

Pramanik et al. (2021) analyzed the socioeconomic status of terracotta artisans in Panchmura village, Bankura district, based on the demographic and cultural profiles of the artisan community (Kumbhakar community). The study also highlights the significant challenges of this terracotta cluster and their possible solutions, as well as the general history and development of the craft. This study is based on exploratory and survey research in Panchmura village in Bankura district. About 50 male and female artisans in the community, selected by random sampling in this study area, were interviewed according to the interview schedule. The responses obtained were evaluated by percentage analysis. Artisans face various problems such as lack of financial support, technological innovation, skill development programs, unorganized production system and lack of proper coordination. Researchers have suggested an attachment to other small cottage industries for growth and acceleration. This priceless craft should be incorporated into the organized sector for improvement and prosperity. Good information, financial support, technology upgrades, skills enhancement programs, appropriate marketing techniques are necessary for its actual development.

Tripathy and Bardhan (2019) mainly studied pottery to gain insight into livelihoods- the process, economy, shocks, seasonality, trends and issues of this livelihood. State, county, block and village are chosen on purpose. The tools used to understand livelihoods are mostly participatory. After an in-depth study of this livelihood, this study provides a conceptual framework that can be understood as the livelihood promoted the way to the highly competitive market of the living situation. A future scope of research was also revealed in the discussion. Pottery has been an undetectable pet since the earliest times of human life. This study is a tribute to the hardworking artisans who kept this art alive.

Saha (2019) employed cross-sectional research designs to identify the challenges of the craft and the problems faced by the artisans in the field of clay doll entrepreneurship of

Krishnagar, Nadia district and in the field of terracotta business in Bolpur, Birbhum district. The researcher examined the reasons for dying craft and to explore critically the suggestive measures related to the revival of terracotta and pottery entrepreneurship, using participatory observation. Ethnographic techniques have been used for data collection from 60 artisans. After graphical analysis and presentation of results, the researcher indicates measures like establishment of training centres, awareness generation of financial schemes, formation of self-help groups, and development of e-marketing system.

Rivani, Raharja and Arifianti (2018) carried out SWOT Analysis on the Ceramic Industry Centre of Purwakarta, Indonesia to examine their strategic management. The method adopted in the study is qualitative survey-based descriptive research, and guided interviews. Respondents included ceramic craftsmen, related government parties and college experts. SWOT analysis to compare the internal factors (strengths and weakness) with external factors (opportunities and threats), was presented as Internal and External Factor analysis. The strength of the export-oriented ceramic industry centre is moving towards growth when supported by the adequate production capacity of the centre, with endless soil as raw materials. The export-oriented ceramic industry centre is suggested to improve the internal environment of the centre in management and technology to take advantage of wide market opportunities.

Bhardwaj (2018) studied blue ceramics, often recognized as an excellent Jaipur craft. People admire blue-flower pottery because of its unique shape. It gives a luxurious look to any household despite the rather lengthy process of making blue-flower pottery. Currently, the blue ceramic industry has created jobs for many people in Jaipur and is highly appreciated worldwide. Jaipur's blue-green pottery is hand-painted, well-suited to the region's hot, dry climate. Currently, the blue ceramic industry in Rajasthan is facing

many difficulties but the industry is doing quite well in all aspects. A brief industry analysis is carried out and some suggestions are given.

Barman and Hazra (2017) examined the perspective of traditional ceramic craft in today's economy at the Krishnagar clay doll center in West Bengal. The researchers used direct-indirect observations and semi-structured interviews within an ethnographic framework to explore the socio-economic conditions and problems of the earthen doll industry at clay dolls in Krishnagar, Nadia district, and look at the business and product trends of clay dolls. They analyzed the factors of adopting a new approach from processing to commercialization and its impact. The study also identifies the challenges of craftsmanship in today's landscape from the perspective of merchants and craftsmen. Government policy, facilities and business awareness on the development of the clay doll industry have greatly helped in thinking about the better prospects of clay dolls. This industry for Government and craftsmen have also become the subject of substantial research and discussion.

Sahoo et.al. (2016) conducted a case study analysis of Bankura Terracotta Crafts Center to explore the importance of the terracotta craft industry in the socio-economic livelihoods of local people. An extensive survey was carried out to determine the extent of people's dependence on this industry and to understand the impact of the terracotta industry on the social and economic life of the local people. Scholars have also tried to determine the economic status of the terracotta industry, whether it is profitable and perpetuating tradition. The results show that the potters in the terracotta industry with the maximum investment get the minimum profit, accounting for poor economic conditions. Consequently, most connected to this industry tended to move into other relatively more profitable fields. In this industry, wholesalers and retailers earn more than product manufacturers. Most artisans do not own land or shops, so they rent land or shops to

produce. People in this small-scale industry face health problems due to a bad working atmosphere.

Adebimpe (2015) conducted a case study of indigenous Dada pottery from an entrepreneurship perspective in Okelele Ward, Eastern Ilorin Local Government of Kwara State, Nigeria. Data were obtained from primary and secondary sources using a structured and validated 5-item questionnaire. The data analysis shows a prospect of increasing demand and wider acceptance of these traditional pots by rural and urban residents for home decoration and kitchenware. The range of handy ceramics leads to job creation for enterprising individuals. The potters have innovative ideas and have preserved their cultural heritage over the years, but have limitations in production and the marketing strategies of the entrepreneur. Craftsmen face career challenges, not being able to get loans from banks or through a government-backed loan programme to purchase modern equipment. In addition, the awareness of potential domestic and international consumers is still low. In order to maintain consumer patronage, local potters should approach pottery through a business approach. This includes fresh and beautiful designs that help identify and respond to customer needs, ongoing research and development, dynamic pricing in line with market needs, and marketing a full range of products, nationally and internationally through local and international media .

Sikdar and Chaudhuri (2015), in their paper, “Traditions of Pottery in Prajapati Community in Gujarat, India” show that some communities still practice their ancient pottery craft and one of them is the "Prajapati" community of central Gujarat, India. The community uses the same ceramic technology as their ancestors used. From raw material to final product, they use the same process. This community has brought a touch of tradition to the world of pottery and played an important role in promoting the art of pottery.

Kasemi (2014) conducted a case study of the Coochbehar district in Bengal to investigate the ceramic industry's problems in terms of production, marketing and labour. This study follows a primary survey method, designed to collect data on the overall performance and economic performance of the ceramic industry. The Cobb-Douglas production function method is used to study the production and nature of the ceramic industry. Issues noted in the study include irregular raw material supply, deficient working capital, outdated technology, inadequate product diversification, competition from organized sectors, problems in management and marketing, and lack of research efforts. The researcher analyzed the characteristics of the ceramic industry and proposed appropriate policy measures to develop the industry in the study area.

Ghosh (2014) studied the economics of sustainable clay products in Bankura district, West Bengal using descriptive survey method. The study found that net economic profits from clay production were markedly high for marginal workers in the current study year, and labour costs turned out to be the main contributor. Due to market contraction, the presence of intermediaries in the market and several important constraints, household incomes are not stable and economic conditions are poor in the current economic outlook. The Government or the State craft board should further encourage handicrafts to promote crafts at the national level. More exhibitions and shops should be established so that people know more about terracotta crafts. A good network should also be built at the national level to introduce tourists to the terracotta craft. Artisans must have the opportunity to be exposed to the outside world so that they understand the needs of their customers and what they need to add to their craft to provide added value.

Sodhi (2006) studied how traditional potters responded to technological change in Khurja, a town in Uttar Pradesh known for ceramic industry. Tracing the history of technological interventions, the investigator shows that potters responded positively to

technological innovations. The provision of financial support and facilities is also a contributing factor. The article contradicts that potters are conservative and opposed to technological change. Findings also revealed that the achievement of the Khurja potters prompted other potters to migrate to the urban areas and adopt new techniques.

Gupta (1988), in the book, “Progress and Prospects of Pottery Industry in India” focuses mainly on all the primary factors which helped in accelerating the progress of Pottery industries in Uttar Pradesh including growth, industrial infrastructure, employment, process, trends, working conditions and all other socio-economic factors. The book summarizes all these factors and gives a new view to the pottery-making art in the ceramic city “Khurja” in Uttar Pradesh.

2.2.4 Studies on Entrepreneurial Intention

Krishnan and Venkatesan (2022) specified in a newspaper article, that the commencement of entrepreneurial mindset curriculum in schools has shown significant improvement in academics and life skills. They have reported the missing link in entrepreneurship existing between public obsession about unicorns and the general people running ground-level start-ups. They have analyzed the prevailing situation, deducing that the Government should incorporate entrepreneurship and industry-specific job skills in national conversations to address the missing middle and bring about economic development in the country. To connect the dots and resolve the issues, entrepreneurship should be emphasised in school and higher education curricula. Effective implementation of such a curriculum will enable students to incline towards entrepreneurship and find solutions to local challenges with industry and entrepreneurial ecosystem involvement. It should be in the scope of National Mass Entrepreneurship Mission to bridge the gap between thought and action.

Carruthers, Venter and Botha (2019) aimed to determine the relationship between recurring entrepreneurial intention attitude and action; entrepreneurial intention behaviour and action. A survey was administered to 154 existing entrepreneurs in South Africa. Findings indicated a positive relationship with recurring entrepreneurial action, entrepreneurial intention and attitudes. Findings also report no significant relationship between entrepreneurial action and recurring entrepreneurial intention behaviours. The study practically implies specific entrepreneurial competencies - creativity, problem-solving, innovation, opportunities and values that existing entrepreneurs relied on the most when engaging in entrepreneurship. Potential novice entrepreneurs could focus on these competencies if they intend to engage in entrepreneurial action.

Mwange (2018) reviewed Entrepreneurship Intention Questionnaire for an explorative study on the variables. The research presented the characteristics of the questionnaire and selected empirical studies that have applied the questionnaire in student entrepreneurship intention studies. The scale contains six items in Likert-type ranging from Strongly Agree to Strongly Disagree. The questionnaire responses help to arrive at a composite score, calculated by summing across items, with high scores indicating high entrepreneurial intentions.

Gough (2018) aims to determine if a relationship exists between Entrepreneurial Intention and Entrepreneurial Attitude in Experiential Education for university students in entrepreneurship. The research was built upon Ajzen's Theory of Planned Behaviour, providing a theoretical and conceptual link between behaviour and intentions. The study proposed the hypothesis: Entrepreneurial attitudes are positively related to one's entrepreneurial intention. Using convenience sampling, 575 students enrolled in entrepreneurship courses were asked to complete pre- and post-tests as a part of their

coursework. Correlational analysis was used to test the relationship between EA and EI, and a strongly positive correlation was found.

Degue (2018) examined the factors affecting the entrepreneurial intention of students at Ho Technical University in Ghana using a deductive research method. Data were collected from primary sources using a questionnaire, using a self-administered questionnaire after ensuring its validity and reliability. Data were collected by multistage sampling, analyzed by descriptive statistics and inferred using SPSS. The results show that Ho Chi Minh students aim to become entrepreneurs consciously. Further analysis also showed a positive relationship between entrepreneurship education and intention among students. The study concludes that entrepreneurial intention is predicted by personal attitudes, perceived behavioral control, subjective norms, and perceived educational support of HCMC University of Technology students and support learners to start new businesses.

Anisa et al. (2016) analyzed the effectiveness of science education based on the local potential of Jepara pottery and furniture to improve students' entrepreneurial attitudes. The research method used was an approximation trial with cluster sampling and a pre-test post-trial control group design. The research tool was a questionnaire about business attitudes validated by experts, teachers, and peers. This research is driven by a scientific learning activity that allows students and entrepreneurs to interact directly with each other. Science teachers in Jepara must be able to harness the local potential of Jepara pottery and furniture around the school in learning activities so that students can learn directly from the context and meaning of the problem with entrepreneurs as a relevant learning resource. Science learning based on the local potential of Jepara pottery and furniture should be an example for teachers in creating a science teaching kit that relates

to the local potential around the school. Depending on the conditions, science teachers can modify the local potential to be integrated into the learning process.

Kadir, Salim and Kamarudin (2012) analyzed the relationship between educational support and entrepreneurial intention of Malaysian MARA Professional College students. The research study keeps Ajzen's theory of planned behaviour as the supportive theoretical framework to identify the factors influencing students' entrepreneurial intention. Data was collected through a survey method using a questionnaire from 183 students belonging to three educational programmes offered by the institution. Data were analyzed using correlation and regression statistics. Findings revealed a significant relationship between attitudinal-behavioural factors and educational support towards entrepreneurial intention. The results of the statistical tests show that educational support for entrepreneurship enhances students' entrepreneurial intention, provides appropriate knowledge, and develop attitudes and skills to cope with complexities in entrepreneurial tasks, including seeking opportunities and resource accumulation, building successful entrepreneurship. The study illustrated that exposure to entrepreneurial education triggers students to choose entrepreneurship as a career.

Linan and Chen (2009) from Baylor University specify Ajzen's planned behaviour theory and its core entrepreneurial intention model elements. The researcher used model elements like personal attitude, subjective norms and perceived behavioural control to construct an entrepreneurial intention questionnaire (EIQ), analyzing its psychometric factors and cross-cultural considerations and applying correlation and regression. The research addresses some unresolved issues regarding entrepreneurial intentions. It tested the applicability of the entrepreneurial intention model in Spain and Taiwan. The researcher developed the questionnaire to measure the relevant cognitive constructs.

Also, the research has proposed specific hypotheses to examine the role of cultural dimensions in entrepreneurship. Results have mostly accepted the proposed hypotheses. **Segal, Borgia and Schoenfeld (2005)** review entrepreneurial research in the light of the entrepreneurial motivation model. This was an exploratory study where the ability of perceived feasibility and perceived desirability were taken as factors to predict self-employment intentions in a sample of 114 undergraduate business students in Florida. The research proposed a new model of entrepreneurship motivation, tested through a set of hypotheses. The study has implications on motivation as a factor towards entrepreneurship and educators and policy makers to enhance entrepreneurial activity by increasing entrepreneurial self-efficacy.

Robinson et.al. (1991) presented an attitude approach to the prediction of entrepreneurship by development of Entrepreneurial Attitude Orientation Scale (EAO). For validation of the scale, discriminant validity and test-retest reliability of the scale was established over 63 undergraduates. This was done by describing the attitude theory, entrepreneurship subscales, Cronbach's Alphas for the four subscales, MANOVA analysis of 54 entrepreneurs and 57 non-entrepreneurs using the subscales, stepwise discriminant analysis and subscale correlation matrix for the 75-item EAO.

2.2.5 Studies on Education for Experiential Learning and Sustainable Livelihood

Acharya, Rajbhandary & Acharya (2019) investigated in Nepal the “(Im)Possibility of Learning Science Through Livelihood Activities at Community Schools”. The reflections of authors in the present study are the inter-related problems in education regarding the low achievement level and insufficient resources and instructions in sciences. Based on the funds from the University Grants Commission, the tenth-grade students and the community members have taken the initiative to link the science subject

to their daily practices and culture at home and also helped them earn their livelihood. Apart from textbooks, learning classes conducted during summer, and parents' opinions have been taken and analyzed. Livelihood practices and activities link the SciLH concept aligning with the school science curriculum and cultural practices at home to engage in hands-on experiences and understand science concepts. Three findings are revealed on science-related outcomes: collaborative engagement, community practices, understanding science concepts and identification from ethical and cultural practices. Home-based practices show potential for supporting learner engagement from parents and learning science lessons with hands-on experience to understand concepts in a better way.

Tomlinson and Rhiney (2018) consider experiential learning for Farmer engagement and empowerment in changing climate for the study to synergise different cases in experiential learning processes in collaboration with farmers. This also discussed the four-stage experiential learning cycle and how these elements help educate farmers. This helped the farmers make improved decisions in solving problems and implementing new techniques. The farmers gained new knowledge about useful agricultural techniques.

Sati and Vangchhia (2017) conducted an empirical data analysis in Mizoram on sustainable livelihood approach to poverty reduction, using a mixed-method approach. Primary data was obtained and a case-study of 16 villages was executed in this research, at a household-level, randomly sampled on the socio-economic activities for livelihood analysis. The research figured out the future potential and lucrative opportunities for sustainable livelihood in the villages and how this can raise their economic stability.

Nakelet and Prossy (2017) conducted an Assessment of Experiential Teaching-Learning Approaches in Undergraduate Programmes at the School of Agricultural Sciences. The study presents empirical evidence on how educators train learners in

experiential learning to improve learner-centered teaching in undergraduate programmes. The paper discussed the implementation of Experiential approaches among the trainees to have a deeper understanding of the concepts and enhance reflective and critical thinking for attaining learning abilities. The study implies encouraging universities to enhance learner-centrism among communities with field visits to make learning more practical.

Padmanabhan (2016) investigated the effectiveness of an integrated approach to education for sustainable development (ESD). The objective was to develop ESD-integrated materials by identifying the content areas and using appropriate pedagogical approaches in Science and Social Science curriculum of VII standard, study the effectiveness and relationship of an integrated approach to ESD on knowledge, critical thinking, problem-solving and value preference towards sustainable development. Quasi-experimental research design and purposive sampling was used. This approach to education for sustainable development improved the knowledge, critical thinking and problem-solving among upper primary school students when pre-test on knowledge of sustainable development and intelligence were taken as covariates. Simultaneously, it was not valid on value preferences.

Nusrat (2014) explored on the “Impact of MGNREGA on Socioeconomic Development and Sustainable Livelihood among the Gujjar and Tongia tribes” of Uttar Pradesh and Uttarakhand. The data was collected using structured interview schedules and focus group discussions. It was found that the traditional nomadic pastoral community of Gujjar was dependent on Buffalo rearing and milk-selling. In contrast, Tongia community was dependent on forest resource-based activities. Percentage-wise calculation of involvement in socio-economic activities was done along with SWOT analysis of MGNREGA works on creating a sustainable community for the tribes.

George (2013) focuses on the experiential learning projects and its effects in the management education. This qualitative study revealed that more than 90 percent of students showed a positive attitude towards experiential learning. The students were encouraged to learn outside the classroom without books and gained more practical knowledge in understanding reality.

Sandvik (2011) conducted a mixed research discussed secondary school education and its impact on livelihood strategies of the people. Based on these strategies, community vocational education has been integrated in the curricular subjects to build knowledge-based competency and develop critical thinking among students. The primary objective is to explore the Quality of school education and examine its usage for local livelihood strategies. The findings of the study suggest that school education is necessary for socio-economic development. A positive change has been observed in vocational training as most of the community depends on farming.

Fernandez (2009) worked on the participation of tribal women in agrobiodiversity conservation and creating an environmental education module for sustainable livelihood in the Nilgiris of Tamil Nadu. The study was aimed at analyzing the livelihood sustainability of the tribal women through agrobiodiversity conservation and designing an Environmental Education Module (EEM) for sustainable livelihood through agrobiodiversity conservation. The data gathered through interview schedule were quantitatively analyzed and tabulated for statistical analysis using Percentage analysis, Correlation, Regression and Factor analysis.

Arani, Alagamandan and Tourani(2004) clarifies the gests of a “work-based learning and training model” for the professional development of 24 decision-makers and class inventors at the Ministry of Education- Organization for Educational Research and Planning- in collaboration with the University of Western Sydney of Australia. Case-

study approach has been used to examine the work-grounded literacy model as a scheme for the professional development of the respondents, enrichment of decision-making, and enhancement of organizational conditioning. This study findings illustrate that the evaluation of the work-grounded literacy model allows decision-makers and class inventors to integrate work and knowledge at the organization and help each other develop the knowledge and skills needed for the workplace.

Literature Review at a Glance

The following table summarizes the literature reviewed by the researcher at a glance:

Table T2.1: Reviewed related Literature at a Glance

	Type of Literature										
Aspect	Research Paper		Concept Paper		Project Report		Book/New s Article		Theses/ Dissertation		Grand Total
(Level)	Nat	Int	Nat	Int	Nat	Int	Nat	Int	Nat	Int	
Curriculum Design, Pedagogy and Evaluation		2	1	1		1		1	2		8
Vocational Edu/Work-Based Learning Models	3		3	1	2				5		14
Pottery	10	2					1				13
Entrepreneu rial Intention	2	7					1				10
Experiential Learning and Sustainable Livelihood	3	3			3				1		10
Grand Total	32		6		6		3		8		55

*Nat- National, Int- International

2.3 Critical Analysis of Research Gap :

The reviewed studies have focused on an array of themes like Curriculum Designing, Pedagogy and Evaluation (Wu et.al., 2018; Arianty and Purwanto, 2018; Moganty and Reddy, 2017; Albashiry, Voogt and Pieters, 2015; Lucas, 2015; Dode Vivek B, 2015; Sermsuk, Chianchana, Stirayakorn, 2013; Vanaja, 2007) Vocational Education and Work-based Learning Models (Ramaswamy and Pilz, 2020; Shasa and Sreedharan, 2015; Sharma, 2015; Sahu, Gulshan and Yadav, 2015; Rangachary, 2015; Ansari, 2015; Purohit, 2014; Mujumdar, 2012; Akram, 2012; Majumdar, 2009; Verma, 2008; Bhattacharya, 2002; Chand, 1996; Lali, 2002), Pottery as an occupation (Pramanik, 2021; Tripathy and Bardhan, 2019; Saha, 2019; Sahoo, 2016; Adebimpe, 2015; Sikdar and Chaudhuri, 2015; Kasemi, 2014; Ghosh, 2014; Sodhi, 2006; Bhardwaj, 2018; Hazra and Barman, 2017; Gupta, 1988); Entrepreneurial Intention (Krishnan and Venkatesan, 2022; Botha, Carruthers and Venter, 2019; Mwange, 2018; Gough, 2018; Degue, 2018; Anisa et.al., 2016; Kadir, Sali and Kamarudin, 2012; Linan and Chen, 2009; Segal, Borgia and Schoenfeld, 2005; Robinson, Stimpson, Huefner and Hunt, 1991) and Experiential Learning and Sustainable Livelihood (Acharya, Rajbhandary and Acharya, 2019; Tomlinson and Rhiney, 2018; Sati and Vangchhia, 2017; Nusrat, 2014; Manju P. George, 2013; Sandvik, 2011; Padmanabhan, 2011; Fernandez, 2009).

In the reviewed studies, most of the studies on work-based learning models (Ramaswamy and Pilz, 2020; Sahu, Gulshan and Yadav, 2015; Rangachary, 2015; Ansari, 2015; Mujumdar, 2012; Verma, 2008; Bhattacharya, 2002; Lali, 2002; Chand, 1996), curriculum (Albashiry, Voogt and Pieters, 2015; Vanaja, 2007), pottery (Pramanik, 2021; Tripathy and Bardhan, 2019; Saha, 2019; Sahoo, 2016; Kasemi, 2014; Hazra and Barman, 2017) employs a qualitative data collection and analysis procedure. On the contrary, studies on entrepreneurial intention (Botha, Carruthers and Venter, 2019;

Mwange, 2018; Gough, 2018; Degue, 2018; Linan and Chen, 2009), experiential learning models (Padmanathan, 2011; Fernandez, 2009) employ a quantitative data collection and analysis procedure. Only a few studies use mixed-methods design (Sati and Vangchhia, 2017; Sandvik, 2011). Mixed-Methods design with triangulation approach combined with SWOT analysis is lacking in the reviewed studies with the infusion of curriculum in vocational education.

Research on redesigning curricula in language education (Dode Vivek B, 2015) and physical education (Vanaja Kumari, 2007) is found. A need-based analysis is almost not found. In existing research, gap analysis has been done with the already existing college curriculum and allied by Albashiry, Voogt and Pieters (2015). However, designing an entirely new curriculum model for skill development and sustainable livelihood is truly the need of the hour, especially when there is the need to go vocal for local.

Some studies have taken into account the visionaries and principles put forward by esteemed Indian philosophers like Gandhi (Chand, 1996), Aurobindo (Verma, 2008) and Tagore (Lali, 2002) in work-based learning models to understand the crux of vocational education. This study, however, considers the amalgamation of philosophies of various Indian luminaries instead of focusing on a single one to highlight the importance of entrepreneurship in education to provide a supportive theoretical base for this study.

Studies have focused on establishing a relationship between entrepreneurial intention and other behavioural factors (Botha, Carruthers and Venter, 2019; Mwange, 2018; Gough, 2018; Degue, 2018; Linan and Chen, 2009), but these factors have not been connected to curriculum for entrepreneurship. Curriculum designing and structuring learning in the form of activities is under-researched and that on vocational education is too scanty. Sermsuk, Chianchana and Stirayakorn (2013) have tried to develop a vocational course

curriculum using cross-impact analysis derived from the views of the experts in vocational education, rather than the working professionals in the field. Lucas (2015) reveals that vocational pedagogy remains unexplored in education. Research studies on curriculum have mostly focused on analyzing existing curriculum or curriculum evaluation (Arianty and Purwanto, 2018; Vanaja Kumari, 2007) and revision.

Studies on pottery are minimal and the ones available are mostly historical studies in the craft, as evident in various parts of India and abroad (Sikdar and Chaudhuri, 2015; Gupta, 1988). The original stakeholders in pottery are the field functionaries, they face hurdles and resolve them; hence they are much more aware of the skills, strengths, opportunities and threats of the vocation in the current scenario. Studies focusing on the socio-economics of pottery as a small-scale industry have also been explored, through a case-study approach from the field functionaries in some studies – Pramanik(2021), Sahoo, (2016), Hazra and Barman (2017). Some research studies on pottery conducted in India have aimed at the problems currently prevailing in pottery clusters (Tripathy and Bardhan, 2019; Saha, 2019; Sahoo, 2016; Kasemi, 2014) and have put forward a few suggestions from the point of researcher's interpretation. Whether such suggestions are applicable and result-yielding are in the gunpoint of a question mark. Previous studies lack such evaluation through implementation among pottery and non-pottery communities, resulting in tons of flaws.

Hence, the present study focuses on exploring the perceptions of rural communities in Bengal, where the people rely on pottery as their source of livelihood, which has been continuing for generations. The study also considers the needs of learning aspirants in pottery from both pottery and non-pottery communities. Consequently, the curriculum framed from the researcher's interpretation, subjected to designing the learning module

and its evaluation, truly impacts the youth, paving their way to lead a sustainable livelihood through entrepreneurship.

2.4 Key Implications that emerged from Reviewed Studies

Reviewing the literature relevant to the field of investigation is an essential part of any research, as it serves many purposes, such as knowing what other researchers have learned from similar research problems, eliminate duplication in studies, advise on the definition and significance of research problems, formulate appropriate hypotheses, and provide suggestions for further investigation.

The investigator has reviewed a total of 55 national and international studies, directly or indirectly relevant; for arriving at the present research problem. The reviewed studies have been divided into five major parts. The categorization has been done according to the themes guiding the present study and the objectives with which the study is executed, also maintaining a chronological order- latest to oldest. The key implications describe the research trend in curriculum designing for entrepreneurship for a decade. The demographic and methodological information is presented to draw implications for the present study.

The review of literature related to curriculum design in vocational education indicates it as a pressing need to achieve educational goals. Studies indicate that curriculum and pedagogy designing in vocational education, developing essential skills among learning aspirants for entrepreneurship, or developing their entrepreneurial attitudes towards leading an enterprise have not been attempted significantly. Thus, this part of the research had been a promising academic journey which invoked in the investigator's mind, ideas for preparing curriculum model and learning module for not only up-skilling learning aspirants but also attempting to improve their attitudes towards setting up a pottery

enterprise. In short, the literature review has helped the investigator to go around the globe with the theoretical framework of knowledge, re-examining and reassessing it to sense the incongruities and come back equipped with the ideas to conduct research to fill the lacunae and enrich the body of literature with contributions of intellectual value. Therefore, considering the overview and rigorous analysis of these studies, the present study is novel, original, relevant and fruitful for Indian Education System and society.

CHAPTER III

METHODOLOGY

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METHODOLOGY

“The method of science is logical and rational; the method of the humanities is one of imagination, sympathetic understanding,”

— Andrew Louth

3.0 Introduction

In the preceding chapter, related literature about curriculum designing of work-based models and the current status of pottery at the national and international levels was meticulously studied and discussed. The present chapter describes the empirical research methodology used to design the pottery curriculum model, hence, deals with the research design, method, sample, sampling, design of the study, study sites, construction of tools, scoring procedure, establishing validity and reliability, tool administration process, data collection, techniques adopted in data analysis and ethical considerations.

This study aims to design a curriculum model in pottery for entrepreneurship based on the skills, competencies and challenges in pottery from inquiry to field functionaries in pottery. The study also purports to prepare a learning module and evaluate the designed learning activities on implementation among the learning aspirants having moderate entrepreneurial intention and moderate to high curriculum need perception in pottery, for examining the efficacy of the framed curriculum.

3.1 Hypotheses and Research Questions :

The researcher considered two variables for the quantitative part of the study- Entrepreneurial Intention (EI) and Curriculum Need Perception (CNP).

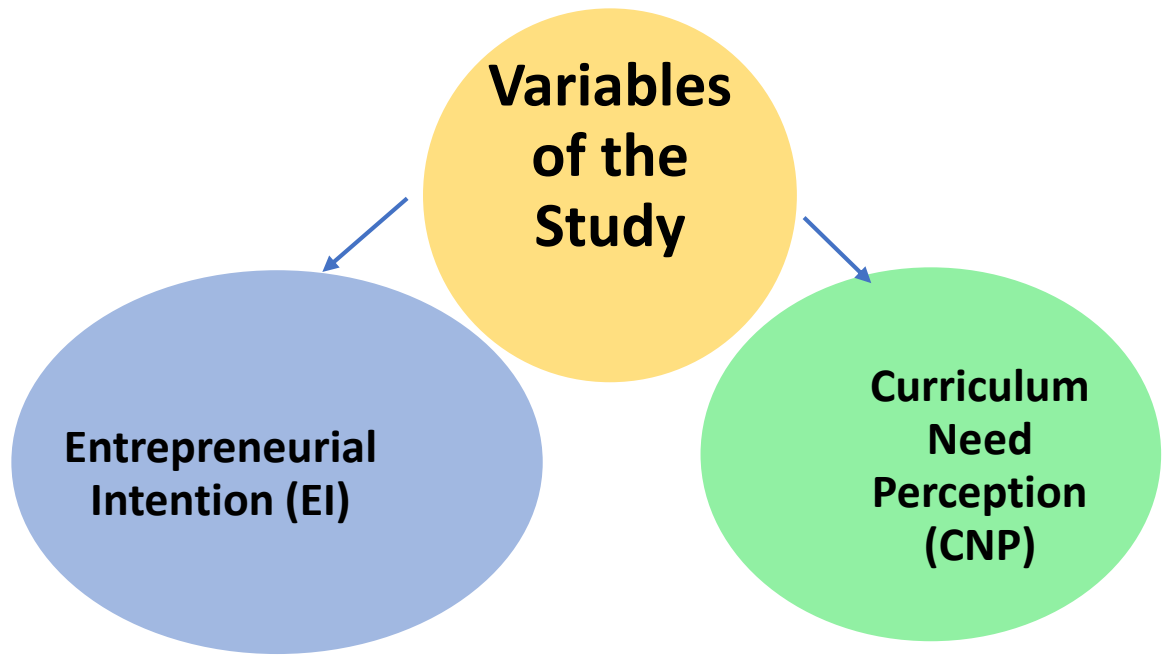


Fig F3.1: Variables of the Study

The following hypotheses and research questions has been formulated for the present study :

H₁ : There will be an entrepreneurial intention among learning aspirants in pottery

H₂ : Learning aspirants will have a perception towards the need for a curriculum in pottery

H₃ : There will be a relationship between entrepreneurial intention and curriculum need perception in pottery

RQ₁ : What are the skills, competencies and challenges in pottery among field functionaries ?

RQ₂ : How to design a curriculum model in pottery for entrepreneurship?

RQ₃ : How to design the learning module in pottery for entrepreneurship?

3.2 Research Design

The study is exploratory in nature. It first investigates the entrepreneurial intention prevailing in the learning aspirants, interested in taking up pottery as a primary or secondary occupation. Secondly, it is correlational, i.e., it involves finding out the relationship between entrepreneurial intention and curriculum need perception of the learning aspirants. It further enquires about the state of affairs of pottery and its stakeholders. Such a step has been embraced to describe skills, competencies, and challenges in pottery clearly. Being an exploratory study, it also delves into the areas of inquiry like generating ideas about the pottery crafting process through keen observation. Considering the nature of this study, it was relevant to use a descriptive survey design, concerned with surveying and describing existing occurrences, issues, conditions and relationships. It also observes the perceptions and opinions of various stakeholders in pottery. The following schematic diagram depicts the research design:

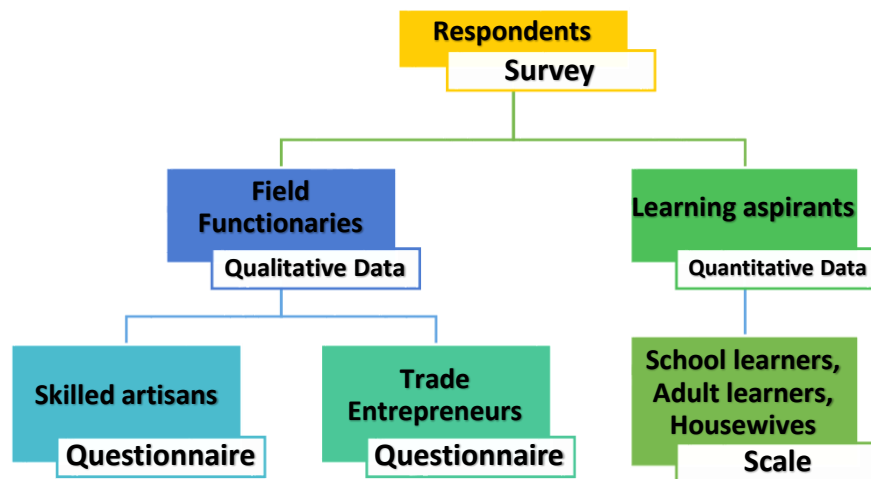


Fig F3.2: Employing Survey Method to Respondents for tool administration

The schematic diagram is an overview of the research process :

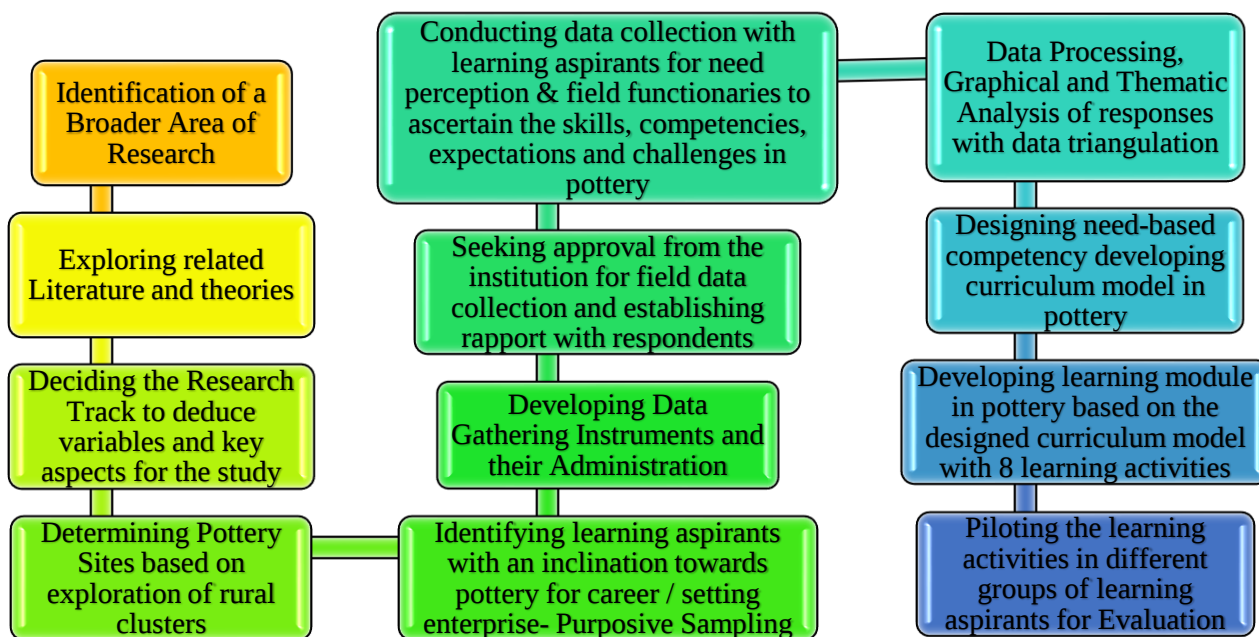


Fig F3.3: Schematic Overview of Research Process

3.2.1 Research Approach

There are varieties of methodological approaches to educational research, which are classified as either qualitative or quantitative. The quantitative approach uses objective measurement by identifying variables to collect numerical data to test predetermined hypotheses and look for relationships among them. The qualitative approach uses a divergent form of inquiry that focuses on understanding the status of pottery from the perspective of active field functionaries in natural settings, adoption techniques, usage of resources, the sustenance trends, future possibilities and the enhancement of values associated with the age-old craft. The present research is based on the combination of both approaches: a mixed research approach.

Table T3.1: Objective-wise Nature of Data – Mixed-Method Approach

S.No.	Objectives	Nature of Data	Methodology
1	To assess the entrepreneurial intention among learning aspirants in pottery	Quantitative Data	Mixed-Method
2	To assess the perception of need for a curriculum in pottery among learning aspirants		
3	To know the relationship between entrepreneurial intention and curriculum need perception in pottery		
4	To understand the skills, competencies and challenges in pottery from field functionaries	Qualitative Data	
5	To design a curriculum model in pottery for entrepreneurship		
6	To prepare learning module in pottery for entrepreneurship		

Considering the objectives of this study, the researcher has selected a Mixed Method Design appropriately. The goal of mixed-method research in this study is to combine both quantitative and qualitative approaches in creative ways that employ the strengths of each within a single study.

3.2.2 Method

The study is bifurcated into two main parts. The objectives of the study involves presenting entrepreneurial intention and curriculum need perception in pottery, among learning aspirants. More pertinently, qualitative analysis concerning these objectives has

been followed to gather information on the shortcomings and status of pottery and how these have been coded for designing a curriculum and module in vocational pottery for learning aspirants aiming at entrepreneurship.

The first part of the study examines the extent of entrepreneurial intention and curriculum need perception in pottery among learning aspirants and relationship of the variables.

The second part of the study describes, analyzes, and interprets a craft-centric community's patterns of perception and opinion about the craft that has developed over time. To understand the pattern of pottery as an enterprise and craft, the researcher typically spent considerable time "in the field", administering questionnaires to collect primary data, observing, and gathering qualitative records about the process and their perceptions centering the craft. While trying to understand and explore the craft, knowledgeable and experienced active field functionaries were approached. As a result, the data generated from the pottery sites was qualitative. The study is primarily qualitative because its key endeavour to obtain qualitative insights within specific sites and contexts. More precisely, this research involves an effort to generalize "responses and observations" in the "limited context" (Onwuegbuzie, 2003) of the studied entities.

This shows that the selection of mixed methods approach solely rests on the research purpose and once this was clarified, a suitable design has been chosen. For the present study, the method that best meets the research purpose is ---

Mixed Sequential quan→QUAL Method, i.e., the quantitative approach is followed by the qualitative approach, but the qualitative approach is given the dominant status (Teddlie and Tashakkori, 2008).

3.2.3 Sample of the Study and Sampling method

The primary purpose of research is to arrive at universally applicable principles but to study a whole population to arrive at generalization might not be feasible. The population targeted in this study is unknown, so their characteristics cannot be measured. The researcher draws inferences about the population, by profoundly analyzing the sample. Here, there are no strong evidence about the estimated population of learning aspirants, skilled artisans and trade entrepreneurs across the nation currently engaged in pottery. Hence the sampling method followed in this study is purposive sampling.



Fig F3.4: Sampling Procedure

Learning aspirants willing to adopt pottery entrepreneurship as their primary or alternative career, skilled artisans and trade entrepreneurs belonging to the pottery craft community, who are otherwise the stakeholders of the pottery constituted the population of the present study. 163 learning aspirants from eight districts of Bengal was purposively sampled, shown as follows:

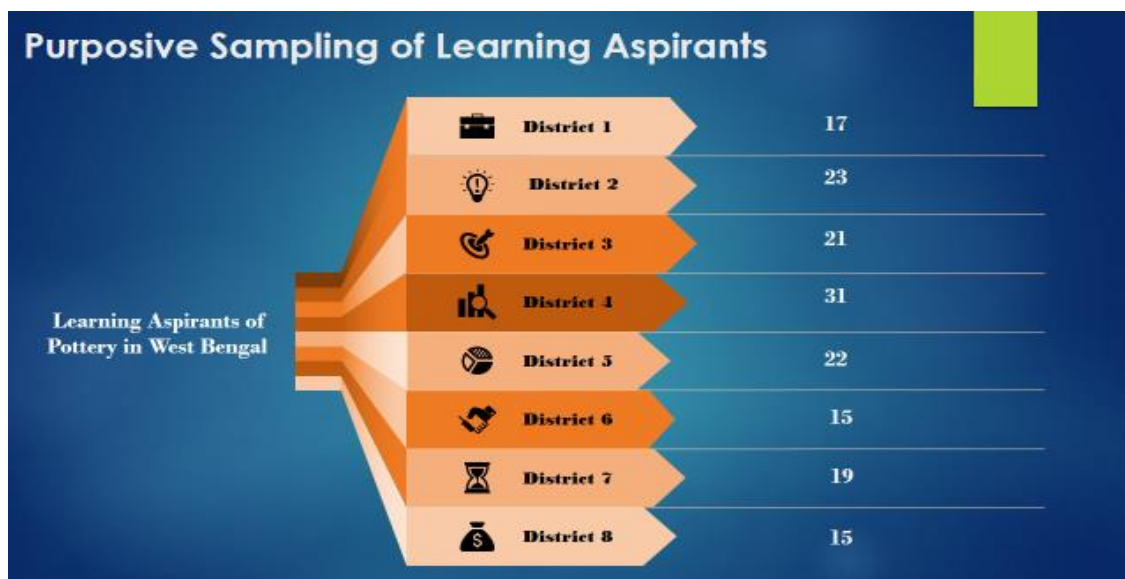


Fig F3.5: Purposive Sampling of Learning Aspirants from 8 districts

The following is the description of the total sample on which the study has been conducted.

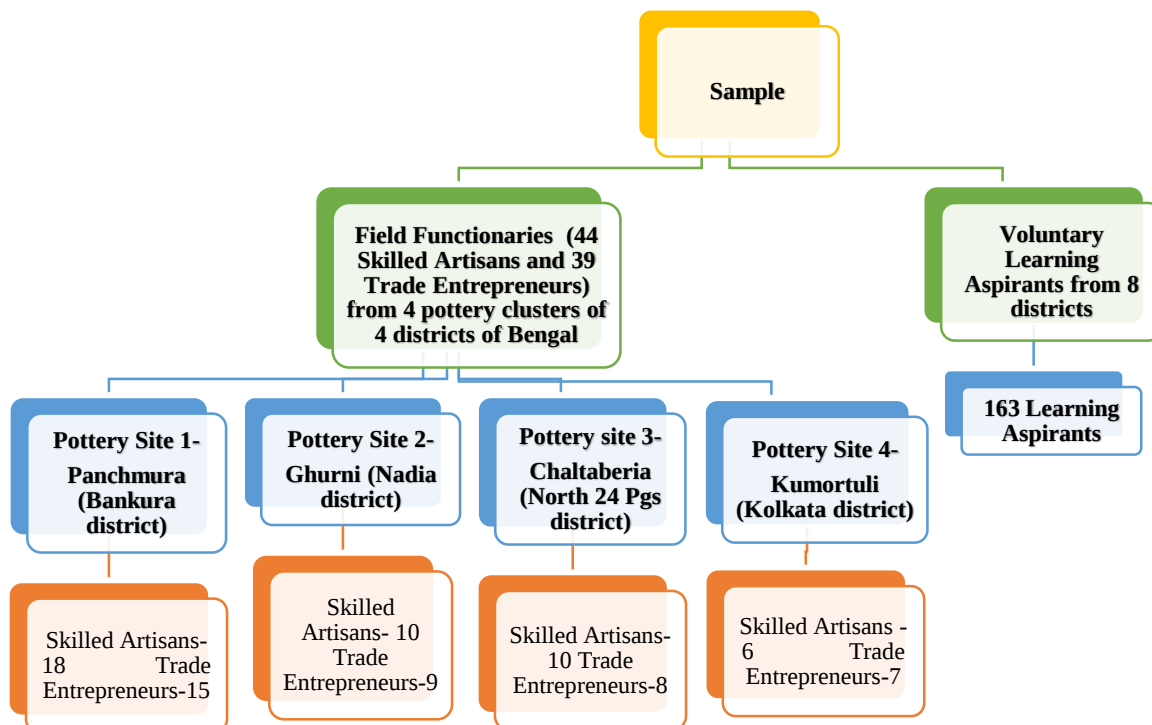


Fig F3.6: Distribution of Sample

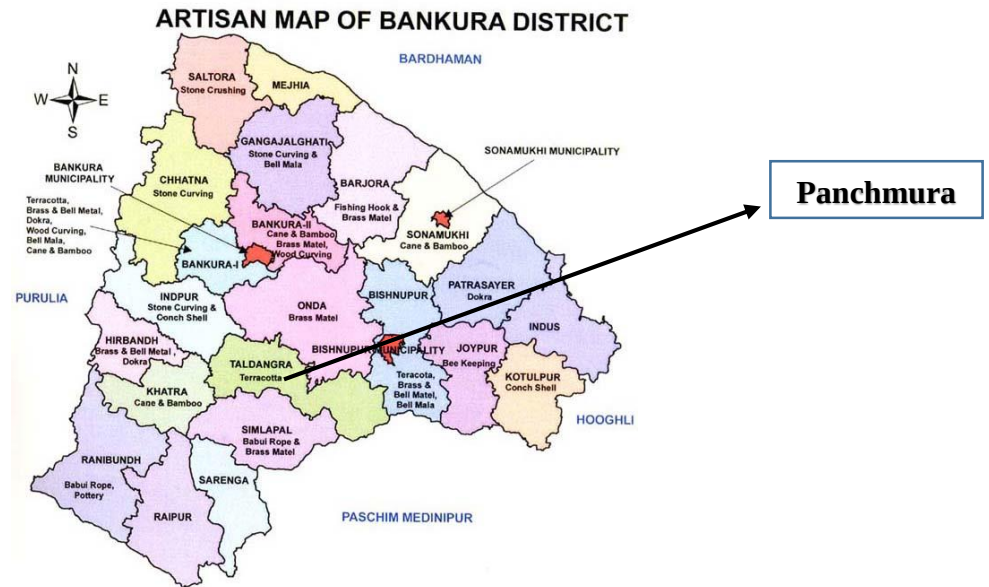
Table T3.2: Total Sample

Respondents	Sample	Total Sample
Learning Aspirants	163	246
Skilled Artisans	44	
Trade Entrepreneurs	39	

3.3 Study Sites

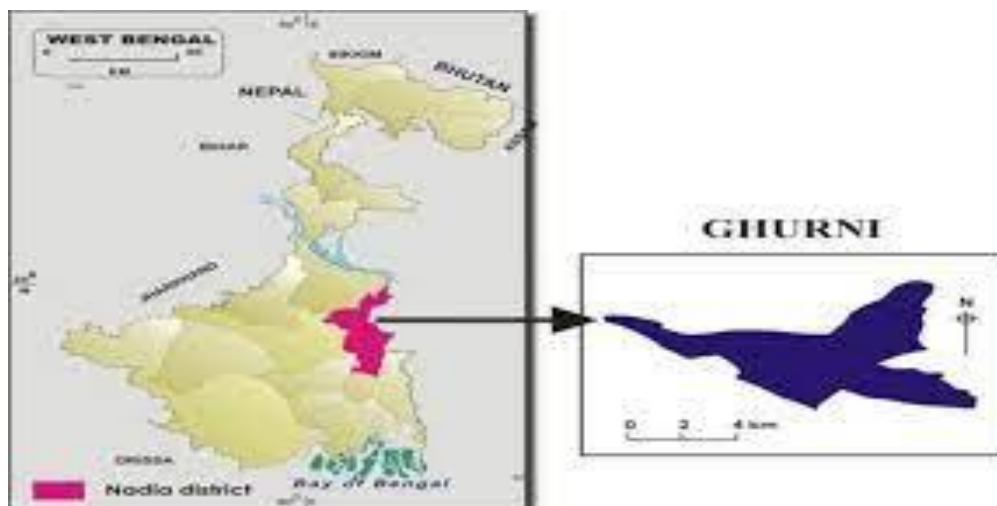
Four sites from four districts of Bengal, were chosen by the investigator, famous for pottery crafts – Panchmura of Bankura district, Ghurni of Nadia district, Chaltaberia of North 24 parganas district, Kumortuli of Kolkata district.

Panchmura, located in Bankura district, a village of historical repute, has been the capital of the Malla kings of Mallabhum for almost a thousand years. Panchmura is famous for its creation of clay modeling, which in due course of time has become synonymous with terracotta and other artistic handicrafts. The Panchmura village has 70-80 potter families engaged in the terracotta works for their sustenance and livelihood, belonging to the ‘Kumbhakar’ community. The crafts have continued for many years, and the heredity artefact skill still flows in their veins from generation to generation. Although the village is not well-developed, it acquires a rich tradition of terracotta soil of red hue, similar to other clay forms. It stimulates an aura of creativity with their limited sense of science.



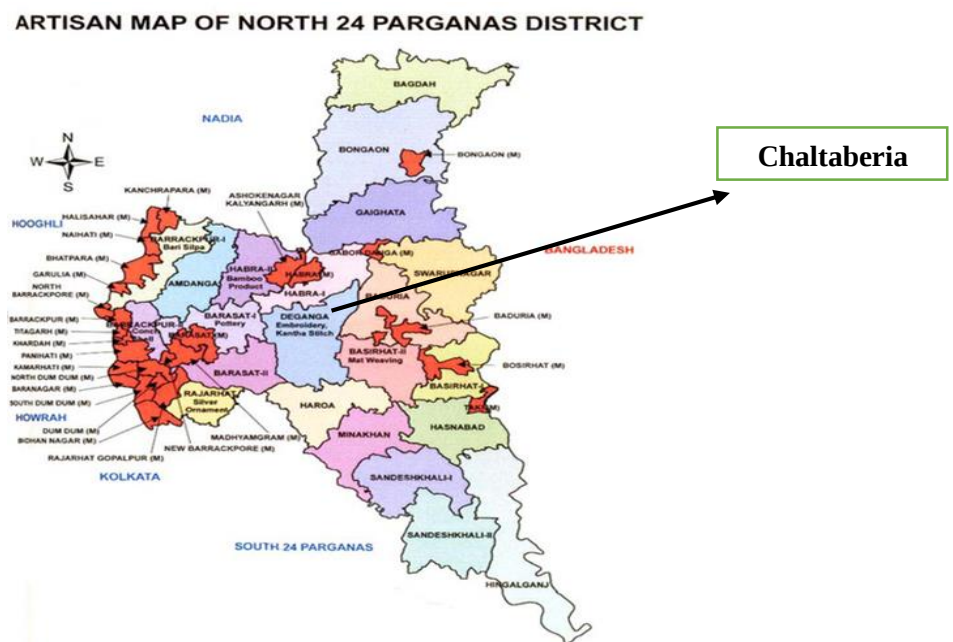
Map M1: Map showing the location of Panchmura in Bankura district

Ghurni is the pith for producing clay dolls, which supports the livelihood of the residents of Ghurni as they live by the art they create. Around 500 residents of this village are engaged in clay doll making. The doll makers belong to the ‘Pal’ community. The paired clay doll ‘Gour-Nitai’ is a speciality of this village. These red, hand-pressed dolls made of fired clay (*terracotta*) are mostly figures of deities and fictional characters.



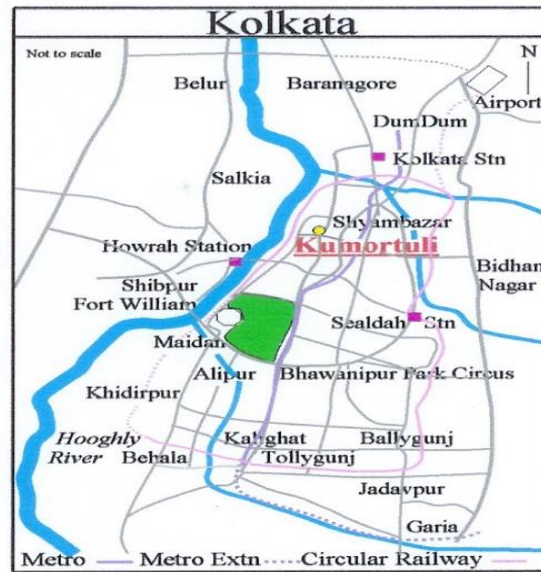
Map M2 : Map showing the location of Ghurni in Nadia district

Chaltaberia in Dattapukur, situated in North 24 Parganas district, a few kilometres from Kolkata, is best known as '*Maatir Gram*' (the earthen village). The artisans in this locality have created an impression nationally and internationally through their ingenious craft. Among the vast range of pottery items, Chaltaberia is well-known for earthen lamps, especially '*ekannya prodip*' (51 *diyas*), mounted as a single unit. The other famous items include clay lampshades, lanterns, flower vases, and chandeliers. The artisans make decorative tiles and tubs for home décor and tourism industries.



Map M3: Map showing the location of Chaltaberia in North 24 Parganas district

Kumortuli, a Kolkata district townlet, is world-famous for crafting clay idols for worship. Motifs recur across items. The four commonly seen motifs are those of the ten-handed Maa Durga in its family form, Lakshmi- Ganesha figures or motifs like '*lata*' (blooming creepers) and '*kalka*' (mango motif). Idols in Kumortuli is of very ancient origin, though the artisans who migrated to this region have been involved with the craft for generations. The clay idols from this village are exported worldwide.



Map M4: Map showing the location of Kumortuli in Kolkata district

The study was conducted with respondents belonging to the following places.

To find out the entrepreneurial intention and perception of the need for a pottery curriculum, learning aspirants who have a presumed interest towards pottery were purposively sampled and belonged to both urban and rural places in Bengal.

However, the skilled artisans who were inquired about craft sustenance and skill-based information in pottery and the trade entrepreneurs who were inquired about entrepreneurship activities and skill-based information in pottery belonged to the above-mentioned pottery hubs of Bengal only. They were purposively sampled based on their extensive craftwork in pottery for decades and generations. They have every knowledge of the craft and its entrepreneurship in the past, present and upcoming future as they earn their livelihood through this historic yet valuable craft. The researcher felt they are the best stakeholders of vocational pottery and approached them with the designed questionnaires. The following section describes the dimensions and contents of the administered tools for data collection.

3.4 Tools employed in the Study

The selection of tools for a study largely depends upon the objectives of study, suitability of administration and the personal competency of the researcher to administer them. A variety of tools were used in this study to collect data. The researcher extensively explored libraries and the internet to discover a suitable standardized tool for the present investigation. According to the nature and purpose of the present study, the investigator could not find relevant standardized tools to study the status of entrepreneurial intention, and curriculum perception towards pottery and for a deeper insight into the skills, competencies, challenges and related present and future perceptions towards pottery. To achieve the objectives of the study, the researcher developed appropriate tools to examine the entrepreneurial intention and curriculum perception of learning aspirants towards pottery and investigate the perception of various field functionaries directly involved in pottery. The tools were standardized by the researcher under the guidance of supervisor through literature analysis and a pilot study was also conducted. The tools are as follows:

3.4.1 Names and Objectives of the Tools

Learning Aspirant Entrepreneurial Intention and Curriculum Need Perception in Pottery Scale (LAEICNP)	• To understand the extent of entrepreneurial intention and perception of the learning aspirants towards a curriculum in pottery for entrepreneurship • To find the relationship between entrepreneurial intention and curriculum need perception among learning aspirants in pottery
Craft Sustenance and Skill-Based Questionnaire for Skilled Artisans in Pottery (CSSAP)	• To perceive the outlook and insights of skilled artisans about pottery for entrepreneurship • To get first-hand perception of the skilled artisans about skills, competencies, present status, challenges, needs and future possibilities in pottery
Entrepreneurship and Skill-Based Questionnaire for Trade Entrepreneurs in Pottery (ESTEP)	• To perceive the outlook and insights of trade entrepreneurs about pottery for entrepreneurship • To get first-hand perception of the trade entrepreneurs about skills, competencies, present status, challenges, needs and future possibilities in pottery

Fig F3.7: Self-constructed Tools and their Objectives in the Present Study

3.4.2 Development of Tools

Based on the objectives, the researcher developed the research tools rather than using pre-standardized tools. The procedure adopted by the researcher is as follows:

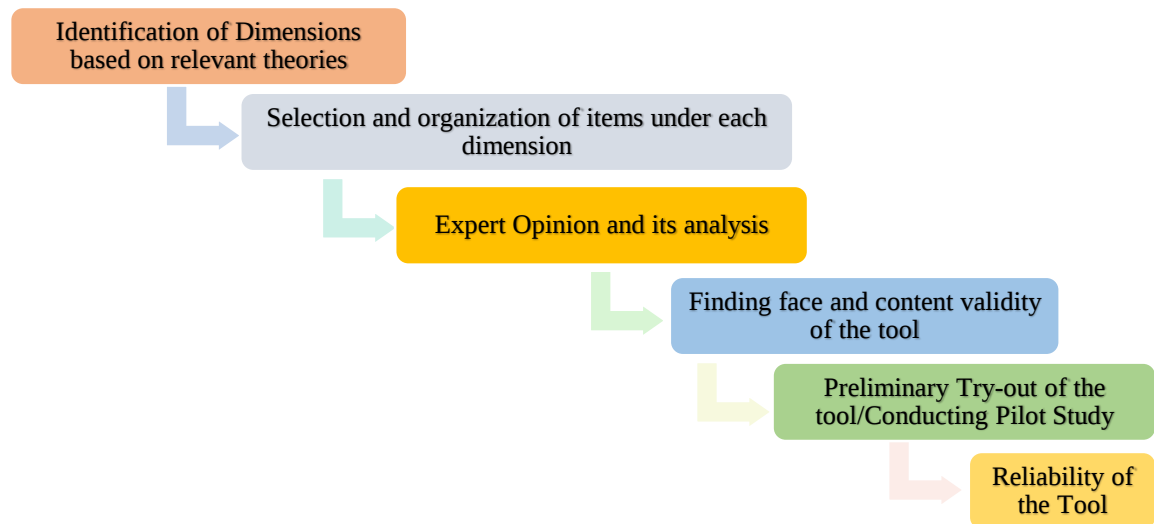


Fig F3.8:Process of Tool Development

3.4.2.1 Construction of the Scale- Learning Aspirant Entrepreneurial Intention and Curriculum Need Perception Scale (LAEICNP)

The researcher has constructed a 5-point scale for learning aspirants in pottery. The steps of construction of the scale are as follows-

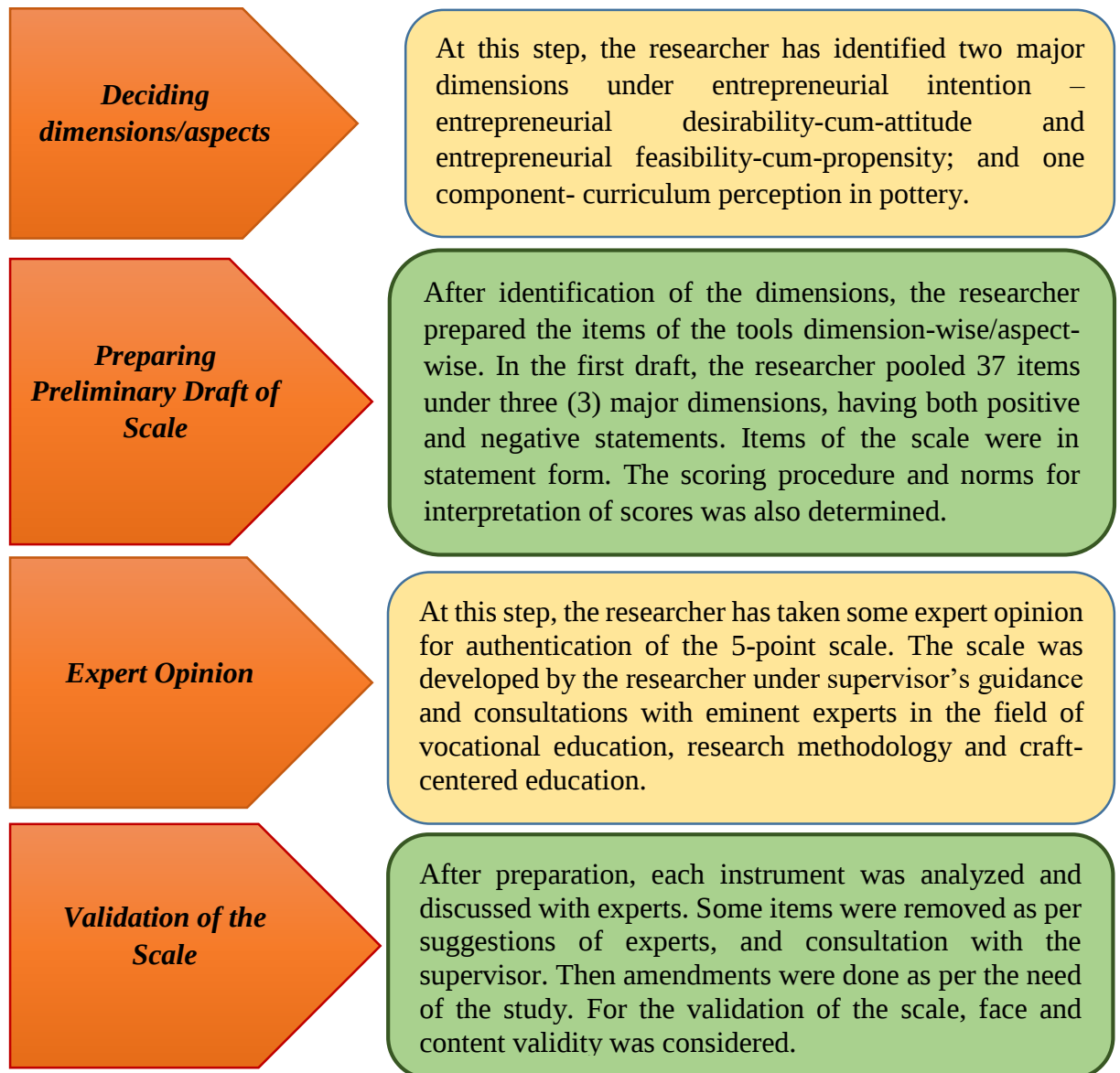
Details about Dimensions

The literature available in the area of entrepreneurial intention and need assessment of curriculum – theoretical as well as practical aspects was extensively reviewed by the investigator. In addition, critical discussions with supervisor and research experts regarding selection of the dimensions were done, and their suggestions were kept in the forefront while settling about the dimensions. It was finally decided to have two

dimensions in entrepreneurial intention and one component for curriculum need. The details are as follows:

Table T3.3: Dimension-wise Count of Items in Learning Aspirant Entrepreneurial Intention and Curriculum Need Perception Scale (LAEICNP)

Dimension/ Component Name	Objective of the Dimension/Component	Total No. of Items	No. of Positive Items	No. of Negative Items
Entrepreneurial Desirability- cum-Attitude of Learning Aspirants towards Pottery	This dimension includes statements indicating achievement orientation, understanding about the possibilities in pottery, current scenario of pottery and attitudes which makes individuals desirous of getting involved in pottery entrepreneurship	13 (1-13)	10	3 (6, 9, 13)
Entrepreneurial Feasibility-cum- Propensity of learning aspirants in pottery	This dimension comprises statements about how individuals consider they have the self-efficacy, abilities and capacities to become entrepreneurs in pottery along with their inner tendencies and inclinations towards pottery entrepreneurship	8 (14-21)	6	2 (15, 17)
Need Perception of Learning Aspirants for a Curriculum in Pottery for Entrepreneursh ip	This component included those statements which reflect an individual's dispositions about the need for a curriculum or the advantages he/she can get through a curriculum in pottery for entrepreneurship	10 (22-31)	10	0
Total		31	26	5



i) Face Validity

Face Validity refers to the method to check the tool for its validity on the face of it. Face Validity is an unstandardized and unquantified approach (Lynn Mary, 1986) and the percentage of agreement for the specified scale was tabulated along with the strength of agreement per question and for the entire tool as well. The stages followed for finding the face validity of the scale used for the study are as follows :

- Preparing Face Validity Form-cum-response sheet
- Selection of Expert panel and distribution of the form among them

- Review of received form and response compilation (based on percentage of agreement)

ii) Content Validity

Content Validation is the process that measures whether content area of an instrument (questionnaire, scale) measures that it is expected to do. Attaining content validity involves an expert panel considering the essentiality of the items in the tool using Lawshe's method, to quantify content validity (Wilson, Pan & Schumsky, 2012). The chosen experts rate each item into 'essential' and 'not essential' categories. The Content Validity Ratio (CVR) is a linear transformation of the proportional level of agreement on the number of experts rating an item as 'essential' (Lawshe, 1975), using the formula :

$$CVR = \frac{n_e - \frac{N}{2}}{\frac{N}{2}}$$

where:

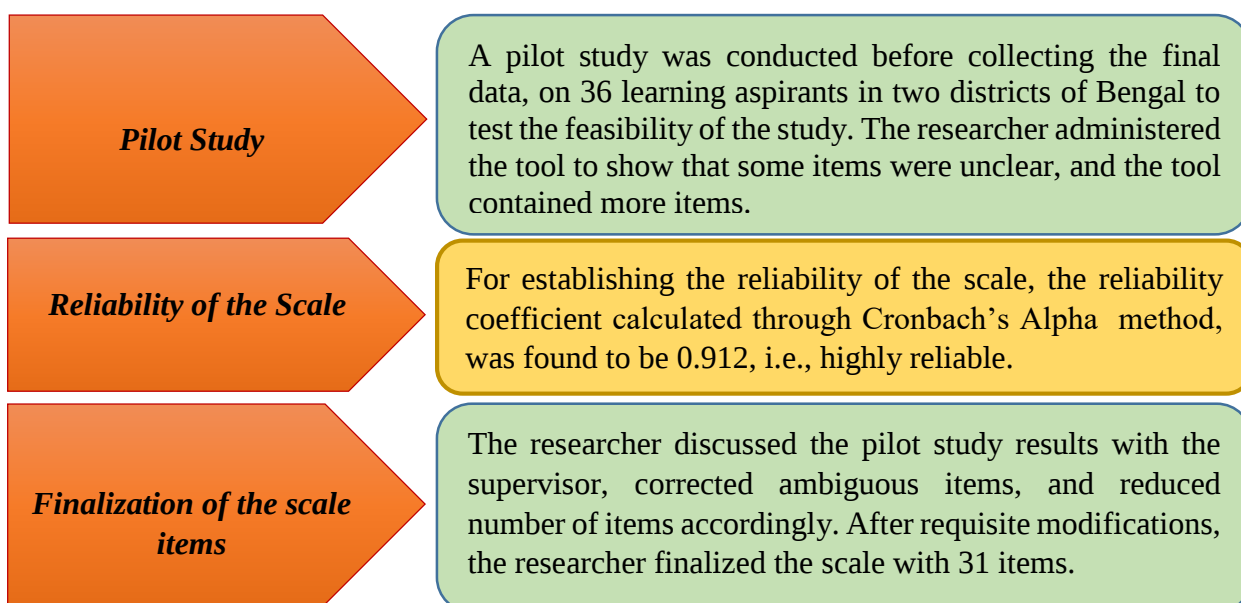
n_e is the number of panelists identifying an item as "essential" and
N is the total number of panelists (N/2 is half the total number of panelists).

Table T3.4: Content Validity Ratio (CVR) Determination of Instrument: Learning Aspirant Entrepreneurial Intention and Curriculum Need Perception Scale (LAEICNP)

Item Number	n_e	CVR	Interpretation
1	5	1.00	Retained
2	6	1.00	Retained
3	6	1.00	Retained
4	6	1.00	Retained
5	6	1.00	Retained
6	6	1.00	Retained
7	6	1.00	Retained
8	4	0.33	Eliminated
9	4	0.33	Eliminated
10	6	1.00	Retained
11	6	1.00	Retained
12	6	1.00	Retained
13	6	1.00	Retained
14	6	1.00	Retained
15	6	1.00	Retained
16	6	1.00	Retained

17	4	0.33	Eliminated
18	4	0.33	Eliminated
19	6	1.00	Retained
20	6	1.00	Retained
21	6	1.00	Retained
22	6	1.00	Retained
23	6	1.00	Retained
24	6	1.00	Retained
25	6	1.00	Retained
26	6	1.00	Retained
27	6	1.00	Retained
28	6	1.00	Retained
29	6	1.00	Retained
30	4	0.33	Eliminated
31	6	1.00	Retained
32	6	1.00	Retained
33	6	1.00	Retained
34	6	1.00	Retained
35	4	0.33	Eliminated
36	6	1.00	Retained
37	6	1.00	Retained

Based on the percentage of agreement of the experts/raters of the instrument, the CVR for each item was calculated, by application of Lawshe's CVR formula. Six of the structured 37 questions were eliminated, and 31 items were retained. The instrument-level Content Validity Index (CVI) has been calculated as 0.837.



Scoring Procedure

The summated ratings method proposed by Likert (1932) has been employed for determining scoring of the present scale. Each statement of the scale is rated on five successive points, i.e., Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree.

The items are scored in such a manner that if the response to a positive statement is 'Strongly Agree', a score of 5 is given, for 'Agree', 'Neutral', 'Disagree', and 'Strongly Disagree', scores of 4,3,2,1 has been recorded. In case of negative items, the scoring method described above is reversed.

The score on the scale can be divided into two parts- for Entrepreneurial Intention (Part II) and Curriculum Need Perception (Part-III). A respondent's score on the scale is the sum of his/her ratings on the items. Item numbers 6,9,13,15 and 17 are scored reversely. The remaining items are scored directly. A higher score indicates higher entrepreneurial intention for Part-II of the scale, while a higher score indicates high perception towards curriculum need perception in pottery for Part-III.

Scale Administration

The finalized scale (Appendix-A1) is self-administering and self-reporting in nature. Verbal instructions were given before administering the scale though clear instructions are printed on the questionnaire. Participants were asked to mark their opinion for each statement on a 5-point scale. The subject was asked to tick 'Strongly Disagree' if he strongly disagrees with the statement, the "Disagree" if he somewhat disagrees with the statement, "Neutral" if he neither agrees nor disagrees with the statement, "Agree" if he somewhat agrees with the statement and the "Strongly Disagree" if he strongly agrees with the statement. A respondent's score on the scale was calculated from the sum of

his/her ratings on all items. There were no right or wrong answers. Time limit was not given for providing responses to all items of the scale.

Norms for Interpretation

On the basis of the data collected, descriptive statistics was calculated, represented in the following table :

Table T3.5: Descriptive Statistics: Learning Aspirant Entrepreneurial Intention and Curriculum Need Perception Scale (LAEICNP)

	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Entrepreneurial Intention	86.42	5.792	-.359	.190	-1.052	.378
CurNeedPerception	39.64	4.847	.177	.190	-1.106	.378

The possible range of scores for Entrepreneurial Intention is from 21 to 105. The norms for interpretation for finding out the level of entrepreneurial intention is as follows:

Part-II : Entrepreneurial Intention

Table T3.6: Norms for Interpretation of Entrepreneurial Intention

S.No.	Range of Raw Scores	Level of Entrepreneurial Intention
1	93 and above	High
2	81-92	Moderate
3	80 and below	Low

The possible range of curriculum needs perception scores is from 10 to 50. The norms for interpretation for finding out the level of perception about the need of a curriculum in pottery is as follows :

Part-III : Perception about a Curriculum need in pottery

Table T3.7: Norms for Interpretation of Curriculum Need Perception

S.No.	Range of Raw Scores	Level of Curriculum Need Perception
1	44 and above	High
2	36-43	Moderate
3	35 and below	Low

3.4.2.2 Construction of the Questionnaires- Craft Sustenance and Skill-based Questionnaire for Skilled Artisans in Pottery (CSSSAP) and Entrepreneurship and Skilled-Based Questionnaire for Trade Entrepreneurs in Pottery (ESTEP)

The questionnaires for this study have been framed as data-gathering instruments to bring into light the appropriate information in congruence with the objectives for developing the tools. It consists of dimension-wise questions printed in an order to enable the investigator to get first-hand information relevant to the study and establish cordial relationship with the tested sample. The questionnaires being opted for the present study are mixed - close-ended and open-ended questions. The close-ended items are a set of questions with a fixed number of responses or options. However, for the open-ended questions, space has been provided for the respondents to write in a short or lengthy way allowing personal freedom to express their responses under comfortable settings.

Preparing the First Draft

The questions were shaped around the objectives for which the tool was constructed. Questions for each dimension were deduced from reviews of related literature and the researcher's experience from prior pottery site visits. The following table summarizes the dimensions with the count of questions.

Table T3.8: Dimension/Component wise Questions in the Questionnaires

Question naire	Count of Questi ons	Dimensions/Components					Total
		1.Adopti on of Pottery	2.Packagi ng and Marketing of Products	3.Percept ion about Skill Building and Sustenan ce in Pottery	4.Percepti on about Current Trends in Pottery	5.Perceptio n about Future possibilitie s and Value Enhanceme nt of the craft	
Craft Sustenan ce and Skill-based Question naire for Skilled Artisans in Pottery	No. of Close Ended Questi ons	1	2	1	3	2	13
	No. of Open-Ended Questi ons	1	1	2	0	0	
Entrepre neurship and Skilled-Based Question naire for Trade Entrepre neurs in Pottery	No. of Close Ended Questi ons	2	1	1	3	2	12
	No. of Open-Ended Questi ons	0	1	2	0	0	

Deciding on a Format

Regarding the format of the questionnaire, it was decided to have both close-ended with fixed-choice responses and open-ended questions with no response choices, which enable and empower the investigator to obtain data of greater freedom and depth (Royse, 2008).

Questionnaires for the skilled artisans and trade entrepreneurs in pottery, the tools for data collection were drawn up consisting of relevant questions pertinent to understand their socio-demographic condition, work-based profile, identifying the skills, competencies, challenges and occupational needs.

Preparing the Draft

After framing the questions in simple English for all the dimensions, a draft of questionnaire was prepared. Space was given for drafting details of demographic data such as respondent's name, age, educational status, gender. The outline of the questionnaires are as follows :

- (i) Background Information
- (ii) Craft Sustenance and Skill-based Information in Pottery (For CSSSAP)
- (iii) Entrepreneurship and Skill-based Information in Pottery (For ESTEP)

Expert Opinions

After preparing the draft, it was given to the experts for their comments, views and suggestions regarding the content of the interview schedule. Necessary corrections were done, and suggestions were incorporated to make the tool questions more understandable to the participants.

Ensuring Validity of the Tools

The tool was developed with refinement in every step with expert opinion and item analysis. This ensured the relevance of each item relevant to the study purpose. The questionnaires were face validated and the content validity ratio was calculated for both the questionnaires using Lawshe's Content Validation.

i) Face Validity

Face Validity is non-statistical assessment which confirms the overall validity of the prepared research tool (Desai and Patel, 2020). Similar steps for finding the face validity of the scale was followed for the questionnaires.

ii) Content validity

Table T3.9: Content Validity Ratio(CVR) Determination of Instrument : Craft Sustenance and Skill-based Questionnaire for Skilled artisans in Pottery (CSSSAP)

Item Number	n _e	CVR	Interpretation
1	5	0.67	Restructured
2	6	1.00	Retained
3	2	-0.33	Eliminated
4	6	1.00	Retained
5	2	-0.33	Eliminated
6	6	1.00	Retained
7	6	1.00	Retained
8	4	0.33	Eliminated
9	6	1.00	Retained
10	6	1.00	Retained
11	6	1.00	Retained
12	4	0.33	Eliminated
13	6	1.00	Retained
14	6	1.00	Retained
15	6	1.00	Retained
16	4	0.33	Eliminated
17	4	0.33	Eliminated
18	4	0.33	Eliminated
19	6	1.00	Retained
20	6	1.00	Retained

Based on the percentage of agreement of the experts/raters of the instrument, the CVR for each item was calculated, by application of Lawshe's CVR formula. Out of the structured 20 questions, seven were eliminated, and the number of retained items was 13. The item-level CVR is reported in the above table. The instrument-level Content Validity Index (CVI) has been calculated as 0.69.

Table T3.10: Content Validity Ratio (CVR) Determination of Instrument : Entrepreneurship and Skill-Based Questionnaire for Trade Entrepreneurs in Pottery (ESTEP)

Item Number	n _e	CVR	Interpretation
1	6	1.00	Retained
2	6	1.00	Retained
3	6	1.00	Retained
4	4	0.33	Eliminated
5	6	1.00	Retained
6	6	1.00	Retained
7	4	0.33	Eliminated
8	6	1.00	Retained
9	6	1.00	Retained
10	6	1.00	Retained
11	6	1.00	Retained
12	4	0.33	Eliminated
13	2	-0.33	Eliminated
14	6	1.00	Retained
15	6	1.00	Retained
16	6	1.00	Retained

Based on the percentage of agreement of the experts/raters of the instrument, the CVR for each item was calculated, by application of the Lawshe's CVR formula. Out of the structured 16 questions, four were eliminated, and the number of retained items was 12. The instrument-level Content Validity Index (CVI) has been calculated as 0.79.

Pilot Study

Pilot study was conducted with the participants to ensure the appropriateness of questions, clarity of expressions and language ambiguity. The table below shows the

sample of both the tools on whom the pilot and final data collection was done. At the end, the respondents were asked to give feedback to make necessary corrections in the questions.

A pilot study was conducted to determine if the items generated relevant information and ensure they were not misleading. After administering the questionnaire, the responses were transcribed, and a preliminary analysis was performed. Since the researcher is new to qualitative research, this is a significant learning curve in collecting qualitative data. This is an important learning process to becoming a qualitative psychology researcher, highlighting the importance of intentional factors in structured questionnaires. This boosted the researcher's confidence and imbibed the skills in constructing questionnaires according to objectives, resulting in the final data collection being more explorative, enhancing the data depth and richness.

Table T3.11: Sample taken for Pilot Study and Final data collection

Craft Sustenance and Skill-Based Questionnaire for Skilled Artisans in Pottery (CSSSAP)		Entrepreneurship and Skill-Based Questionnaire for Trade Entrepreneurs in Pottery (ESTEP)	
Stage	No. of Respondents	Stage	No. of Respondents
Pilot	16	Pilot	15
Final	44	Final	39

Ensuring Reliability (Trustworthiness) of the Questionnaires

Lincoln and Guba (1985) asserts “trustworthiness” of qualitative data gathering tools is achieved by credibility, transferability, dependability, and confirmability. As prescribed, the most applicable ones for this study- long engagement in the research sites and triangulation of data sources, has been ensured to establish the credibility of the

questionnaires. Also, ‘member checks’ involving people like neutral respondents and non-participants with the same interest were considered to comment on categories or the interpretations made, to ensure the reliability of the questionnaires.

Editing the Questionnaire

Based on feedback obtained from the experts and participants of the pilot study on the questionnaire, necessary changes and corrections were done to the questions. Inappropriate, repetitive and ambiguous questions were removed from the schedule to ensure a flow in the questions asked.

Final Draft

The final draft of questionnaires were given shape to secure pertinent data from the participants of the present study, attached in Appendix A2 and A3. The questionnaire also included details of demographic data, background questions related to the historical adoption, the current status of pottery as a craft-cum-enterprise, possibilities, skills, entrepreneurial competencies in pottery, and future prospects through value enhancement. The questions related to five pottery dimensions and necessary probing were put down with care.

Administration of the Questionnaire for Final Data Collection

The data was collected by administering the questionnaire to the selected respondents, who were prepared to respond voluntarily. The investigator established a cordial rapport before proceeding to administer the questionnaire. The respondents were first explained the objective of the questionnaire, which enabled the researcher to obtain first-hand information and also provided an opportunity to observe the respondents closely. It was made sure that the respondents correctly understood the questions. A friendly and

comfortable atmosphere was maintained during the questionnaire administration to ensure the respondents were at ease and expressed their opinions freely and frankly.

3.4.2.3 Photographs and Videos of the unique and vital objects/events/situations were taken to give a live shape to the study, using an android phone and a digital camera.

3.4.2.4 Field dairy/ Field notes have been taken to record the significant events throughout the visit to the research site and to note down all observations for supporting analysis. The notes begin with collecting soil to prepare clay, crafting the products, polishing and packaging them, and selling them to customers. This served as the direct means of studying all people in the pottery sites, their perceptions or opinion, and overt behaviour or condition. Observations in real-life contexts help the researcher record beyond a tool, help one understand what took place beyond the lens, to ensure the totality of the study, and configuring the units of the framed curriculum model at the end.

3.4.3 Constructing Parallel forms of the Tools (Bengali Version)

In the present study, the researcher translated the original tools (English version) into Bengali for data collection from respondents. The mother tongue of the sampled respondents is Bengali; hence the tools were translated into Bengali version for the convenience of the participants to understand each item of the tool at ease. These tools were first translated from English to Bengali, establishing their parallel form. The translated version was given to five language experts (language teachers of school and professors of HEIs), who were well conversant in both languages, to check whether the translation was done accurately. After getting their confirmation, the tools were administered to the respective participants for data collection.

3.5 Data Collection

The investigator collected data to fulfil the objectives determined for the study in esteemed places where pottery is the centered craft, and the people sustain their living through pottery craft making and trading. For data collection, the investigator visited, distributed and collected the filled-in questionnaire encompassing six months from the places under study. Before administering the tool, the investigator took permission from the supervisor and, on approval, immediately approached the respondents comprising learning aspirants, skilled craftsmen and trade entrepreneurs. At first, the investigator established a good rapport with the respondents and extended a brief orientation on the purpose of the study. Then after on-spot data collection, the investigator left the place, delivering gratitude to the respondents.

Qualitative studies provide insight into an existing condition or occurrence, allowing the respondents to reflect and reason (Folkestad, 2008). In this regard, a questionnaire was considered the most appropriate, allowing the respondents to express their responses in their own words and meanings (Willig, 2008) and respond to some questions with allotted choices (Cohen & Crabtree, 2006). To elaborate on respondents' answers, questions were followed up by associated questions, which triggered the participants in giving examples and expanding on their explanations (Leech, 2002). Such elaborations were noted by the researcher in the field notes.

3.6 Data Analysis

In this research, the researcher has adopted a mixed-methods approach, combining quantitative and qualitative research approaches. Therefore, the researcher has analyzed the data by applying quantitative and qualitative methods of analysis. The following table summarizes the objective-wise tools along with the data analysis procedure to provide a crisp picture of the methodology followed in the study:

Table T3.12: Objective-wise Tools and Data Analysis Techniques

S.No.	Objectives	Tools	Analysis Technique
1	To assess the entrepreneurial intention among learning aspirants in pottery	Learning Aspirant Entrepreneurial Intention and Curriculum Need Perception in Pottery Scale (LAEICNP)	Percentage Analysis, Pie-chart
2	To assess the perception of need for a curriculum in pottery among learning aspirants	Learning Aspirant Entrepreneurial Intention and Curriculum Need Perception in Pottery Scale (LAEICNP)	Percentage Analysis, Pie-chart
3	To know the relationship between entrepreneurial intention and curriculum need perception in pottery	Learning Aspirant Entrepreneurial Intention and Curriculum Need Perception in Pottery Scale (LAEICNP)	ScatterPlot, Spearman's rho correlational analysis
4	To understand the skills, competencies and challenges in pottery from field functionaries	Craft Sustenance and Skill-Based Questionnaire for Skilled Artisans in Pottery (CSSSAP) Entrepreneurship and Skill-Based Questionnaire for Trade Entrepreneurs in Pottery (ESTEP)	Graphical Analysis, Thematic Analysis, Data Triangulation
5	To design a curriculum model in pottery for entrepreneurship	Researcher's Interpretation	Inductive Analysis of Graphical and Thematic Analysis Results
6	To prepare learning module in pottery for entrepreneurship	Researcher's Interpretation	Observational Analysis

Firstly, data were entered into Microsoft Excel to tabulate the collected data. The quantitative data analysis process was conducted through the IBM SPSS 21 (licensed version). The quantitative analysis technique includes percentage analysis, Spearman's correlation and presentation of data with the help of a pie-chart and hypothesis proof.

Qualitative data was analyzed using manual coding and interpreting the data under the eagle's view of the investigator. A clear picture of the qualitative analysis process has been presented in the following diagram. The responses of the respondents to each dimensional item were classified and displayed in a table for analysis. The data collected through questionnaires of skilled craftsmen and trade entrepreneurs in pottery were analysed graphically and thematically in view of their efforts to sustain the age-old craft for years through competency and skill development and maintaining their livelihood.

As part of establishing credibility, a research audit (comparing the data with the research findings and interpretations) was run. To ensure dependability of the results, **triangulation** (cross-checking of data) using multiple data sources was supervised to reduce the potential systematic bias that can occur with using only one data source.

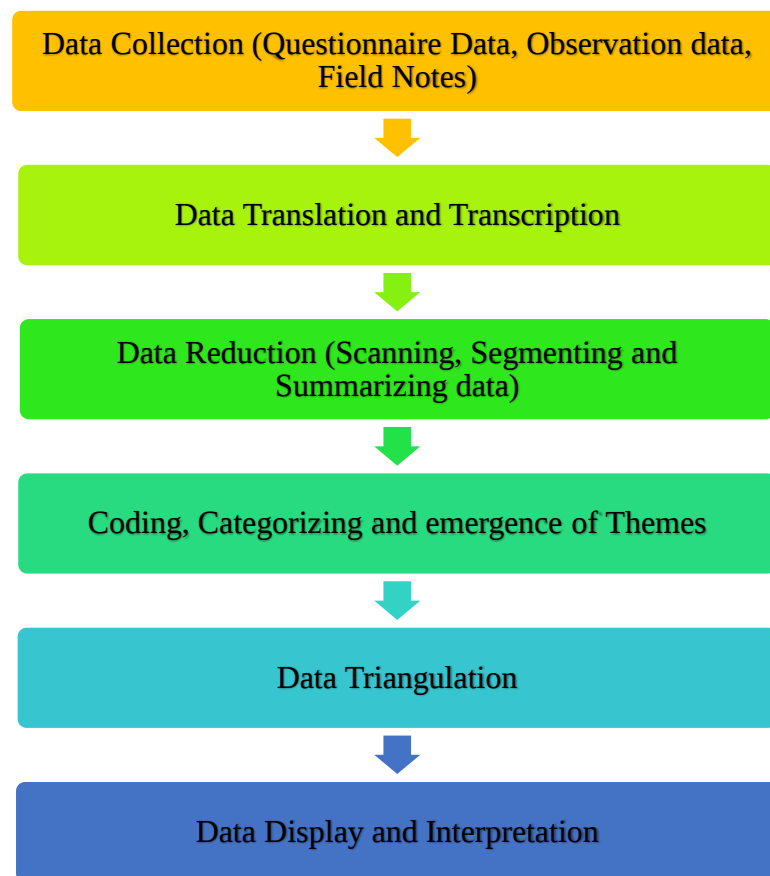


Fig F3.9: Qualitative Data Analysis Procedure

3.7 Ethical Considerations

The “Code of Ethics and Conduct” states that “researchers should ensure that every person from whom data are gathered for the purpose of research consented voluntarily to the process on the basis of adequate information”. Accordingly, the study objectives were intimated to all participants, including information about the data collection process, data protection, and withdrawal rights. Once all questions were answered, and the participants were satisfied, the consent forms were signed. Following the Data Protection Act (1998), signed consent forms and participant details have been segregated from digital records, copied documents, and other details to ensure anonymity and security. All information was kept in a locked file cabinet, and any identifiable information in the transcript has been anonymized. The scoring of completed answer sheets and questionnaire transcripts was recorded only by the researcher.

3.8 Concluding Remarks

The present chapter discussed the research design applied for the empirical investigation. Details regarding the research questions that guided the present study, the research hypotheses, and the procedure followed for data collection in both the quantitative and qualitative phases and research sample details have been outlined in this chapter. The scale, questionnaires, observations, field notes and artefacts as research instruments were comprehensively described, and the procedure of their administration was discussed in detail.

For the study, the researcher developed two instruments for gathering qualitative data. In both the instruments, obligations of language were found in getting answers. All selected subjects were able to give responses in Bengali for the study, so the researcher developed the questions in Bengali and received the answers in Bengali only. However, the research

being in the English language, to keep it as natural as possible, the researcher has given paraphrasing in English, and based on this translation, further data analysis and coding have been done.

However valid, reliable and adequate the data might be, it does not serve a valuable purpose unless meticulously and systematically analysed, intelligently interpreted without bias and rationally concluded. The data collected using the methods explained in chapter three has been consolidated, analysed, and furnished in the following chapter.

CHAPTER IV DATA ANALYSIS AND INTERPRETATION

CHAPTER IV

DATA ANALYSIS AND INTERPRETATION

“Data really powers everything that we do.”

— Jeff Weiner

4.0 Introduction

In the preceding chapter, a detailed discussion of the methodological aspects for this study has been presented. This chapter attempts to explain the step-wise procedure ensued by the researcher to analyse and interpret the data obtained. The data has been clearly scrutinized from all possible angles to assimilate and interpret the emerging vista of knowledge. In addition to data presentation in tabular and chart form, befitting explanation from the researcher’s perspective has also been provided.

The intent in the analysis of data, gathered through an array of tools, can be regarded as multi-holistic perspective and inspecting real-life scenarios as the data unfolds non-manipulatively and inconspicuously, with impartiality to whatever emerges without preset restraints in outcomes. The following is a recapitulation of the study objectives :

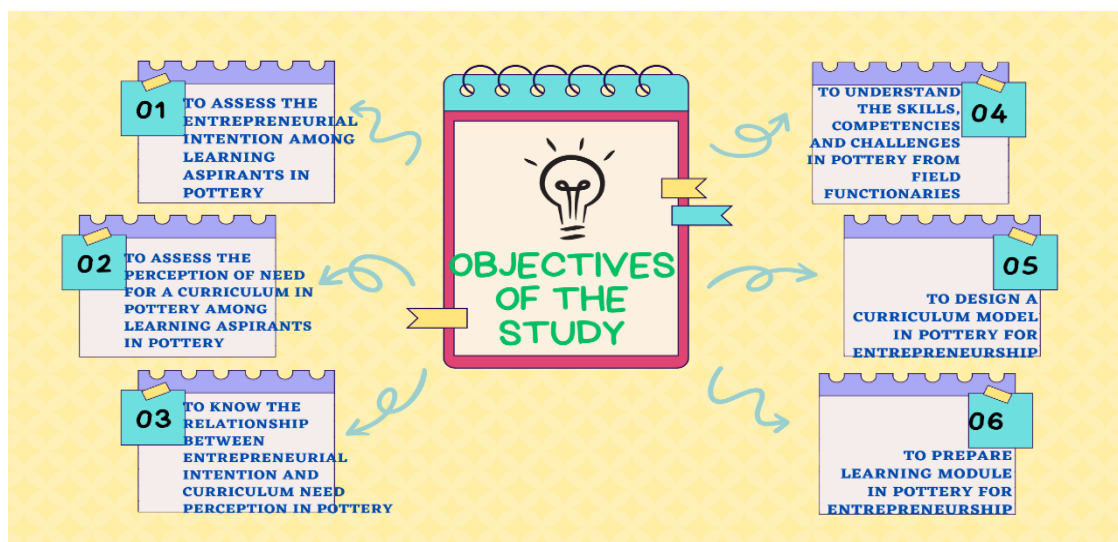


Fig F4.1: Quick Recapitulation of the objectives of the study

4.1 Analysis and Interpretation

The principal aim of the study was to provide quantitative analysis of entrepreneurial intention and curriculum perception of the learning aspirants in pottery and qualitative analysis for perceptions of the active field functionaries in pottery to arrive at a curriculum model and learning module in pottery. Therefore, to achieve this goal, the present study has adopted multiple data analysis approaches. Quantitative analysis has been employed to bring to the limelight the level of entrepreneurial intention and extent of curriculum need perception in pottery, investigating the degree of relationship between entrepreneurial intention and curriculum need perception. Qualitative data analysis has been applied to identify the skills, obstacles, and opportunities in the path of skilled artisans and trade entrepreneurs in the realm of pottery in Bengal rural clusters. The analysis with interpretation has been divided and represented in the following two sections :

Section I: This section deals with analysis of quantitative data. This is the data derived from the self-constructed 5-point scale.

Section II: The second section includes the analysis of qualitative data. This is the data derived from the self-constructed questionnaires and field notes.

Section I : Quantitative Data Analysis

O₁ : To assess the entrepreneurial intention among learning aspirants in pottery

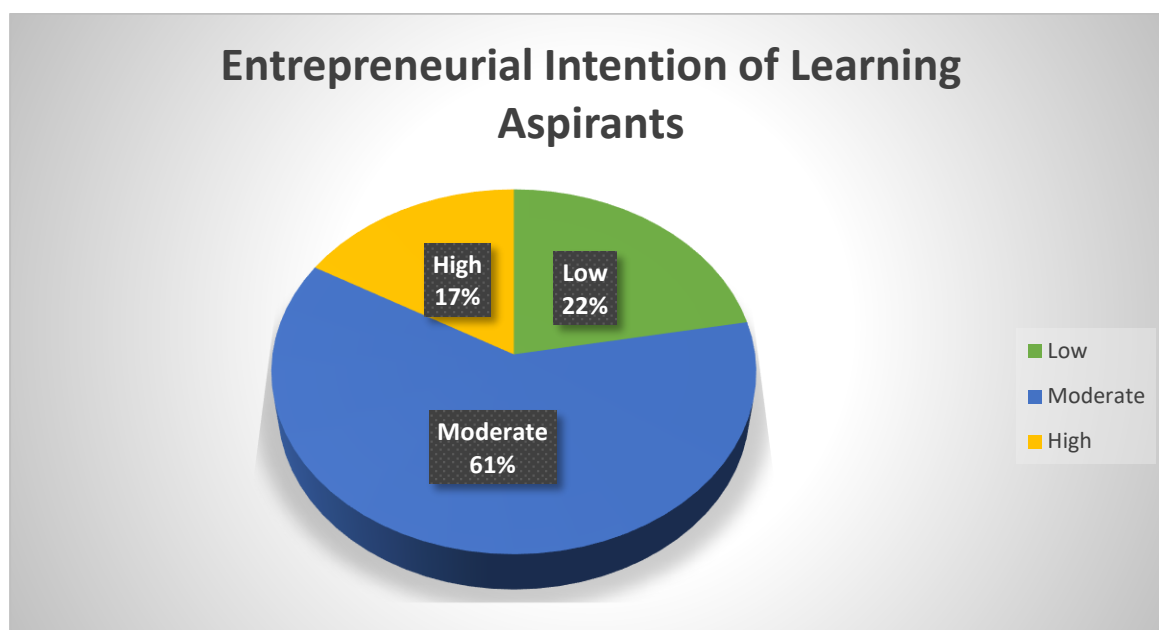
H₁ : There will be an entrepreneurial intention among learning aspirants in pottery

Based on the responses obtained, the learning aspirants in pottery are observed to have the following levels of Entrepreneurial Intention (EI).

Table T4.1: Percentage-wise tabulation of Entrepreneurial Intention in Pottery

EI Level	Percentage
Low	22.1%
Moderate	61.3%
High	16.6%

Based on the above table, the percentages are shown in the form of pie-chart as follows:

**Graph G1 : Pie-chart showing Entrepreneurial Intention of Learning Aspirants****Interpretation :**

This above result shows that out of 163 learning aspirants in pottery, who are voluntary respondents, 17% and 61% show high and moderate entrepreneurial intention respectively, while 22% show low entrepreneurial intention. This means that the social desirability, attitude towards entrepreneurship, individual entrepreneurial feasibility and propensity towards pottery is reportedly moderate to high among the respondents willing

to look forward to taking up pottery for their primary or alternative career. Therefore, Hypothesis 1 is accepted.

O₂ : To assess the perception of curriculum need among learning aspirants in pottery

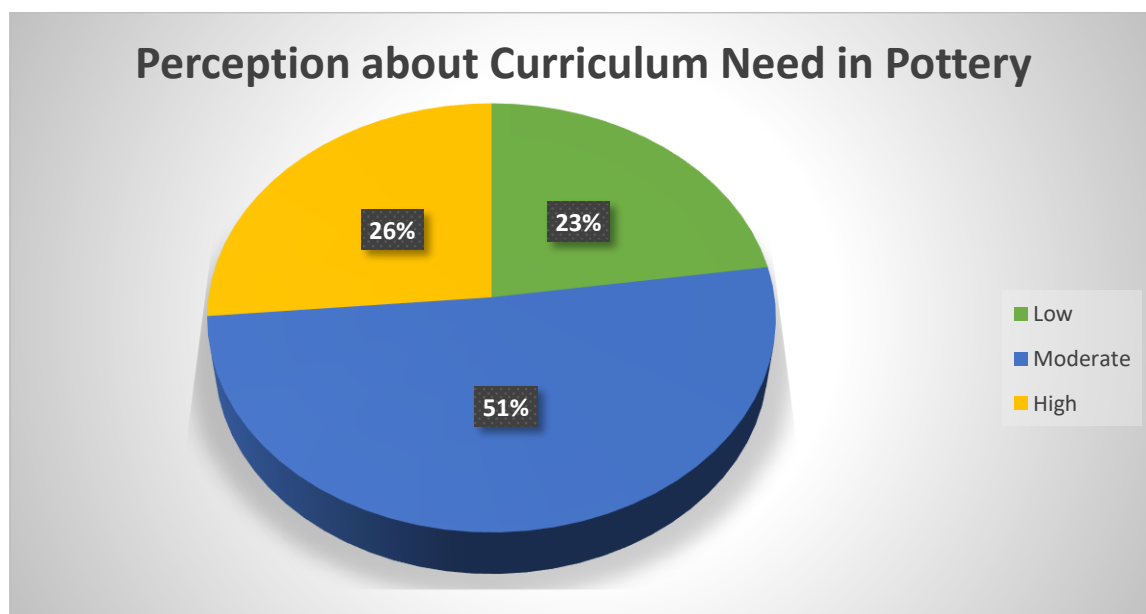
H₂ : Learning aspirants will have a perception towards the need for a curriculum in pottery

Based on the responses obtained, the learning aspirants in pottery are observed to have the following Curriculum Need Perception (CNP) levels indicated in percentages.

Table T4.2: Percentage-wise tabulation of Curriculum Need Perception in Pottery

Curriculum Need Perception	Percentage
Low	22.7%
Moderate	50.9%
High	26.4%

Based on the above table, the percentages are shown in the form of pie-chart as follows:



Graph G2 : Pie-chart showing Curriculum Need Perception of Learning Aspirants

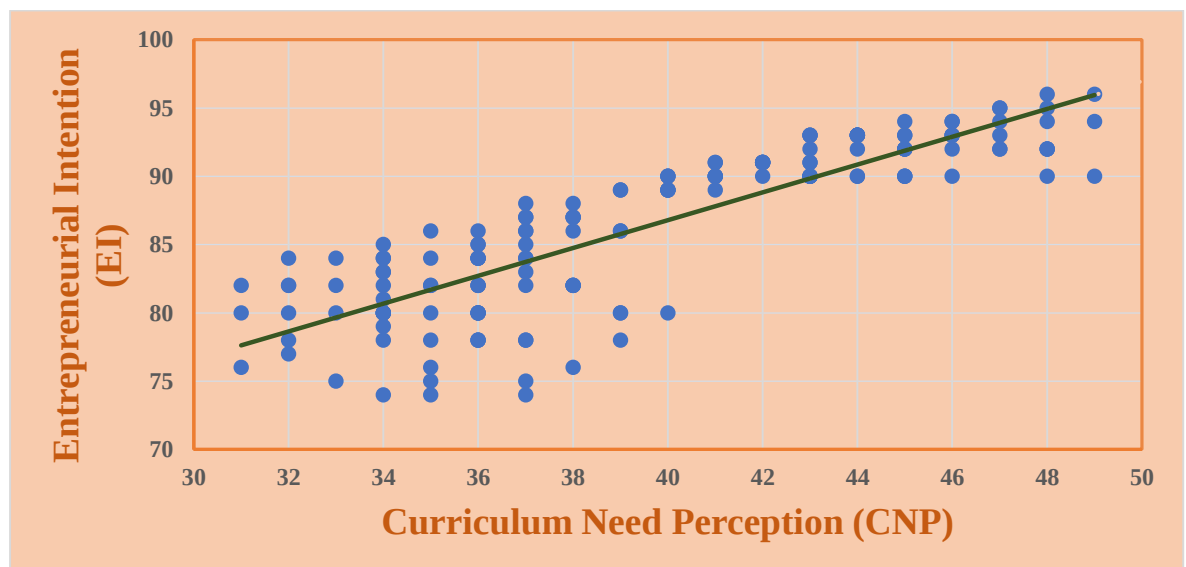
Interpretation :

The figure shows that 26% and 51% of the learning aspirants in pottery have a predictively high and moderate perception towards a pottery curriculum. Of the respondent learning aspirants, 23% show a low curriculum perception in pottery. So, Hypothesis 2 is accepted.

The pie chart above indicates that the learning aspirants realise the need for a pottery curriculum. The respondents agree that following a curriculum can provide an occupationally-oriented process-based approach to facilitate understanding the key skills, competencies, opportunities in pottery, learning engagement and participatory strategies for entrepreneurship, and generating income.

O₃ : To know the relationship between entrepreneurial intention and curriculum need perception in pottery

H₃ : There will be a relationship between entrepreneurial intention and curriculum need perception in pottery



G3 : Scatterplot showing the relationship between Entrepreneurial Intention (EI) and Curriculum Need Perception (CNP) in Pottery

The above scatterplot shows that higher the entrepreneurial intention (EI), the higher is the curriculum need perception (CNP) in pottery. The line clearly indicates that there exists a positive relationship between EI and CNP in pottery.

Table T4.3: Correlation between Entrepreneurial Intention and Perception about Curriculum Need in Pottery

		Entrepreneurial Intention	Curriculum Need Perception
Spearman's rho	Correlation Coefficient	1.000	.867**
	Sig. (2-tailed)	.	.000
	N	163	163
	Correlation Coefficient	.867**	1.000
	Sig. (2-tailed)	.000	.
	N	163	163

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

Interpretation

From the above table, the correlation coefficient, calculated using Spearman's rho is 0.867, which is significant at 0.01 level. This indicates a strong correlation between entrepreneurial intention and curriculum perception in pottery.

A significantly strong relationship exists between entrepreneurial intention and curriculum need perception in pottery. Therefore, Hypothesis 3 is accepted.

Entrepreneurial intention indicating entrepreneurial attitude perceived desirability and feasibility towards pottery for entrepreneurship needs to be developed among learning aspirants before exposing him/her to a curriculum in pottery for entrepreneurship for realizing the objectives of the curriculum and concluding with fruitful learning outcomes. Perception affects the implementation of the curriculum and learning module. Knowing about the perception of the learning aspirants was essential for the researcher to subject

the respondents for evaluation of the learning activities of the module (as mentioned in General Inclusion Criteria) mentioned later in this chapter.

O₄ : To understand the skills, competencies and challenges in pottery from field functionaries

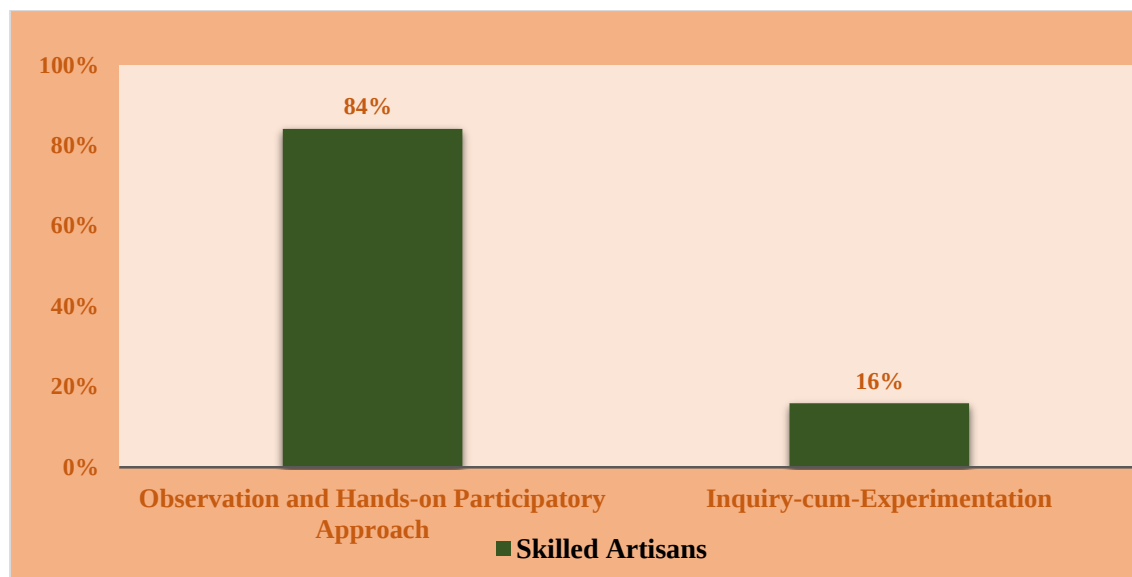
RQ₁ : What are the skills, competencies and challenges in pottery among field functionaries?

In the present study, this research question was set to achieve the objectives for the investigation. The data was collected through structured questionnaires to find answers for this research question. The contents of the questionnaire were considered as units of data analysis. The units have been analysed by converting raw data into objective data for methodological treatment and generalisation. The various sub-questions were grouped under the five principal components within the questionnaires. The responses obtained were converted into percentage (%) for analysis, by analyzing each item of the administered questionnaires.

Item-wise Graphical Analysis

In order to resolve this research question, dimension-wise items have been taken up from the questionnaires, and item-wise graphical analysis have been presented based on the responses obtained from the respondents – skilled artisans and trade entrepreneurs in pottery who are presently functional in the pottery clusters.

Item SA 2.1.1 : How did you start learning pottery craft?

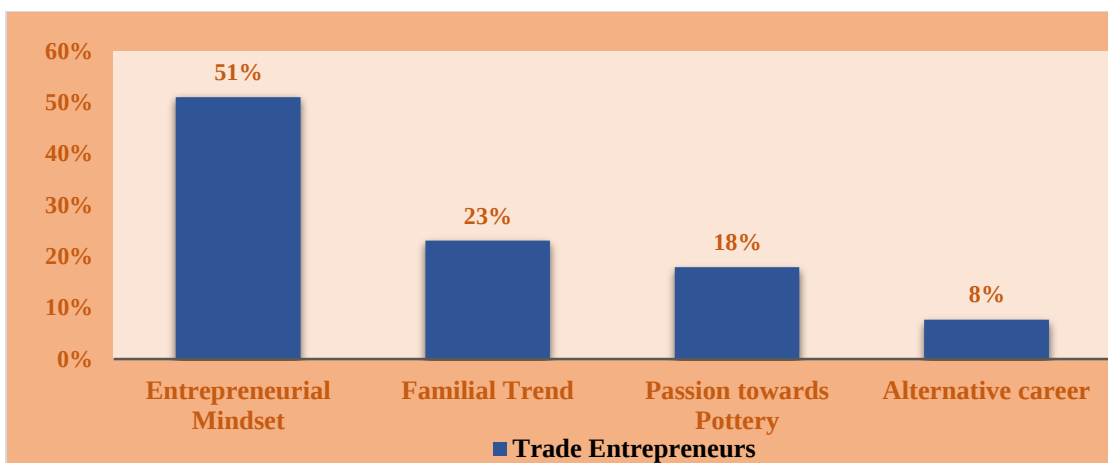


G4 : Graphical Representation- Pottery Learning Strategy- From Skilled artisans

Interpretation :

The graph shows that 84.09% of skilled artisans reported that they have begun learning the craft by observation from other artisans using a hands-on participatory approach. The rest 16% report inquiry-cum-experimentation method as a means of innovative learning. This indicates that learning through observation is the best way to learn how to craft pottery. Artisans clearly mentioned in their responses that **hands-on experience, inquiry-based experimentation with new products, brainstorming for innovativeness** is how beginners can learn pottery. Thus, methods like learning through watching, imitating, enquiring, experimenting and reflecting, must be adopted as teaching-learning strategy in pottery while delivering the instruction among learning aspirants.

Item TE 2.1.1 : What objective did you have to set up pottery enterprise?

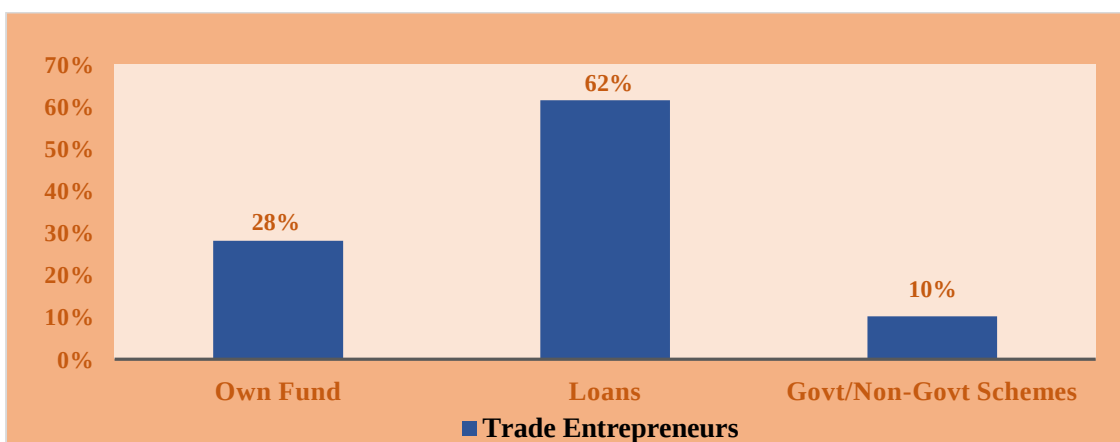


G5 : Graphical Representation- Pottery Enterprise Setting Objective - From Trade Entrepreneurs

Interpretation :

The graphical results indicate that 51% trade entrepreneurs had an entrepreneurial mindset to set up the enterprise, while 23% already belonged to a familial trend of pottery trading, however, 18% moved ahead with pottery because of their passion towards the craft, and 8% took it as an alternative career option. So, every learning aspirant must have a **passion for the craft and an entrepreneurial mindset, which should be developed** through curricular activities.

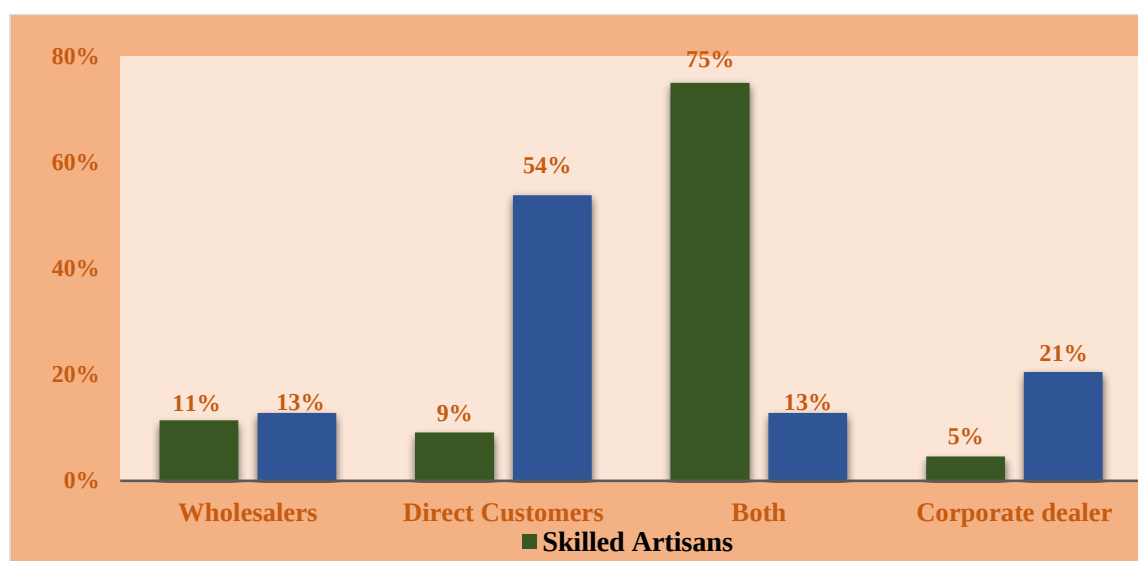
Item TE 2.1.2 : How did you raise the capital for beginning the enterprise?



G6 : Graphical Representation- Pottery Capital Raising Source - From Trade Entrepreneurs

Interpretation :

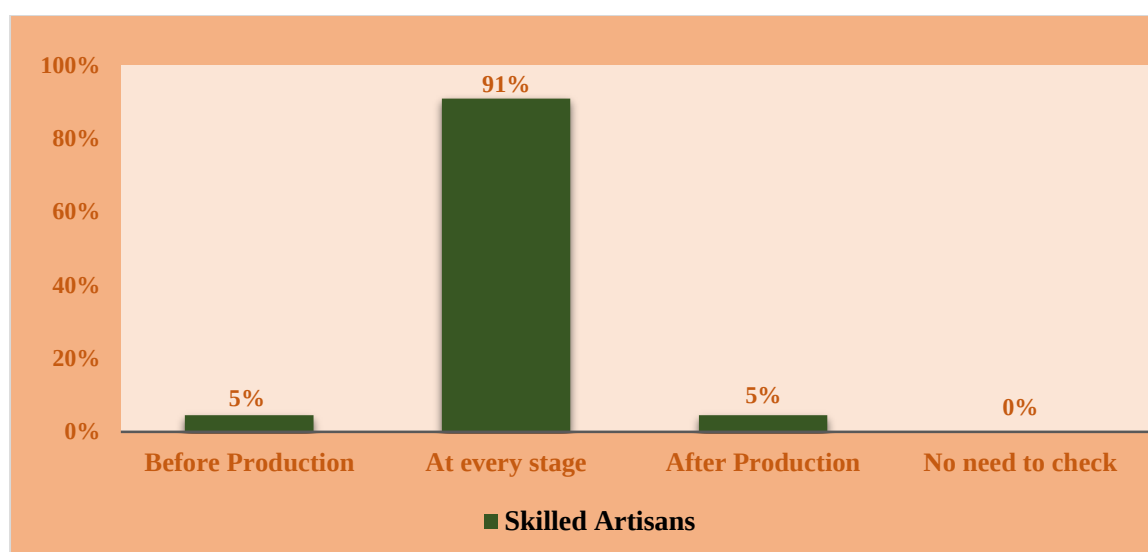
The graphical results indicate that most trade entrepreneurs (62%) take loans from the bank or local cooperative, only 28% build their capacity before investment. In comparison, 10% of them get help from Government or Non-Government Artisan schemes. Most of them lack adequate information about such schemes and take loans at a higher interest rate. **Therefore, information and Financial Literacy should** be a part of the curriculum, so that the learners learn the correct information on the financial initiatives on craftsmen and micro-entrepreneurs and use them in their enterprise, to be developed through curriculum.

Item SA 2.2.3/TE 2.2.3 : To whom do you sell your products ?**G7 : Graphical Representation- Customer Base for Pottery Sale - From Both****Interpretation :**

Artisans in pottery sell their products mainly (75%) to both wholesalers and direct customers, and trade entrepreneurs (54%) interact with direct customers, however, some corporate dealers directly interact with the field functionaries for buying their products.

They **build rapport with the wholesalers, direct customers and corporate dealers** and fix the prices depending on the product type, quality and innovativeness. Maintaining a cordial relationship with the buyers is a major part of their entrepreneurship. They take bulk orders according to buyer demands and can create any design. Therefore, the researcher firmly interprets that developing interpersonal skills is necessary for setting up this enterprise and must be included in the curriculum model.

Item SA 2.2.4 : When do you check quality of the product?

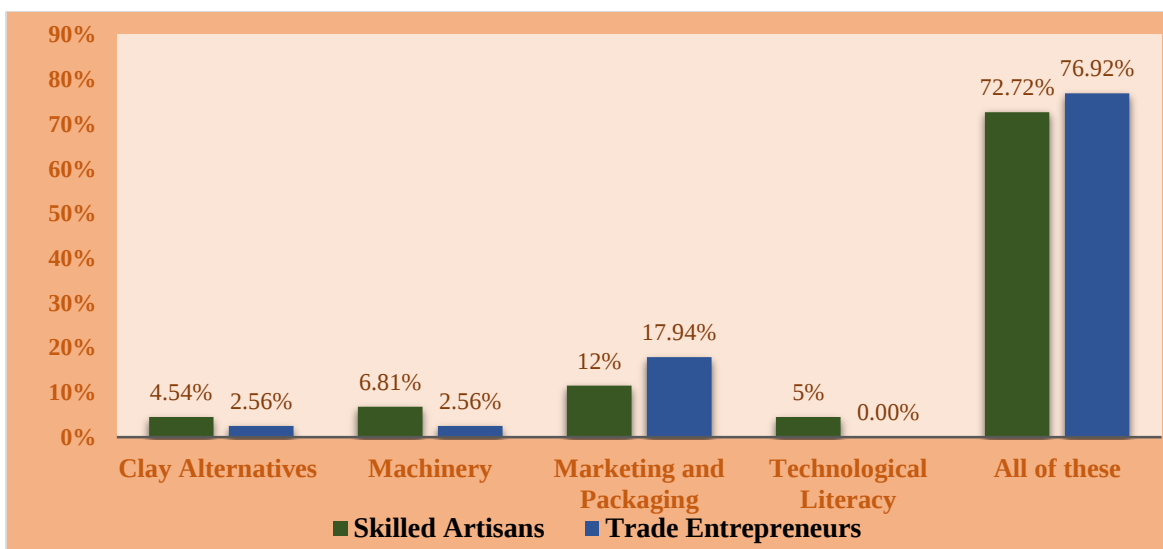


G8 : Graphical Representation- Quality Checking Time- From Skilled artisans

Interpretation :

Skilled artisans (91%) were very particular about quality checking during the process of crafting of products. If quality check is not done, it will lead to defective products. So, **quality check should be done at every stage**- checking the texture of clay after filtering, after drying, after firing, before packing. This therefore must form an important part of curriculum.

Item SA 2.3.7/TE 2.3.5: In which aspects of pottery is special training required for pottery to emerge as a sustainable livelihood ?

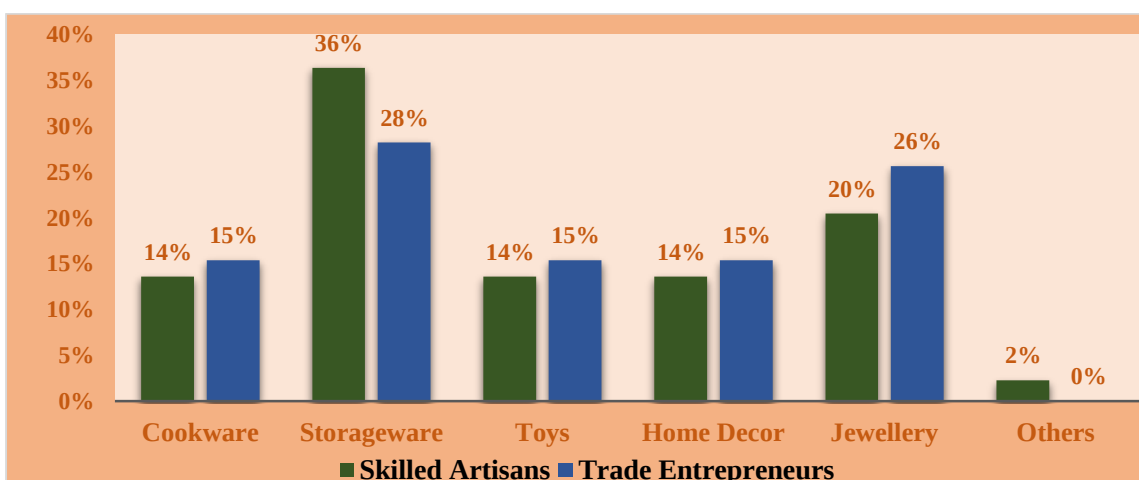


G9 : Graphical Representation- Pottery Training Requirements- From Both

Interpretation :

As skilled artisans(72.72%) and trade entrepreneurs(76.92%) in pottery work in the field face many challenges during their course of work, they feel that they still lack training in marketing and packaging, machinery, clay alternatives, technological literacy are the predominant ones. So, these aspects were considered as significant to be incorporated into curriculum with problem-solving approach as curriculum transaction strategy.

Item SA 2.4.9/TE 2.4.8: Which kind of pottery products is most demandful these days?



G10 : Graphical Representation- High Demand Pottery Items- From Both

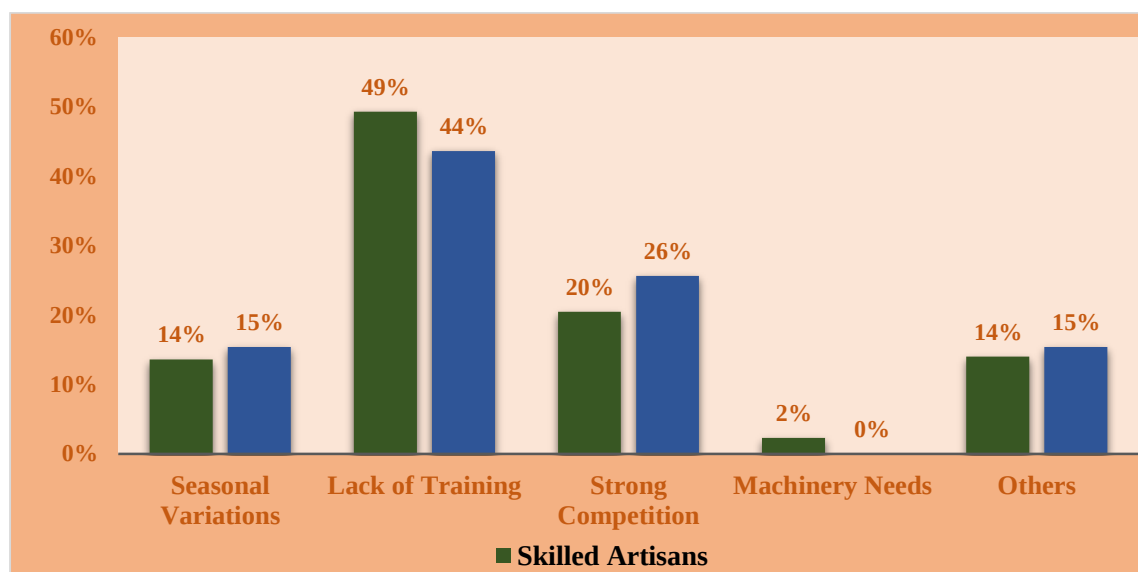
Interpretation :

The graphical results indicate that pottery products are in high demand and they are arranged according to popularity of buyers –

- Storgeware (36% for skilled artisans and 28% for trade entrepreneurs)
- Jewellery
- Interior Décor
- Toys
- Cookware
- Others

Hence, storgeware and jewellery have been included in the curriculum model as innovative products in pottery.

Item SA 2.4.10/TE 2.4.9 : In which aspects of pottery do you face challenges the most?



G11 : Graphical Representation- Challenges in Pottery- From Both

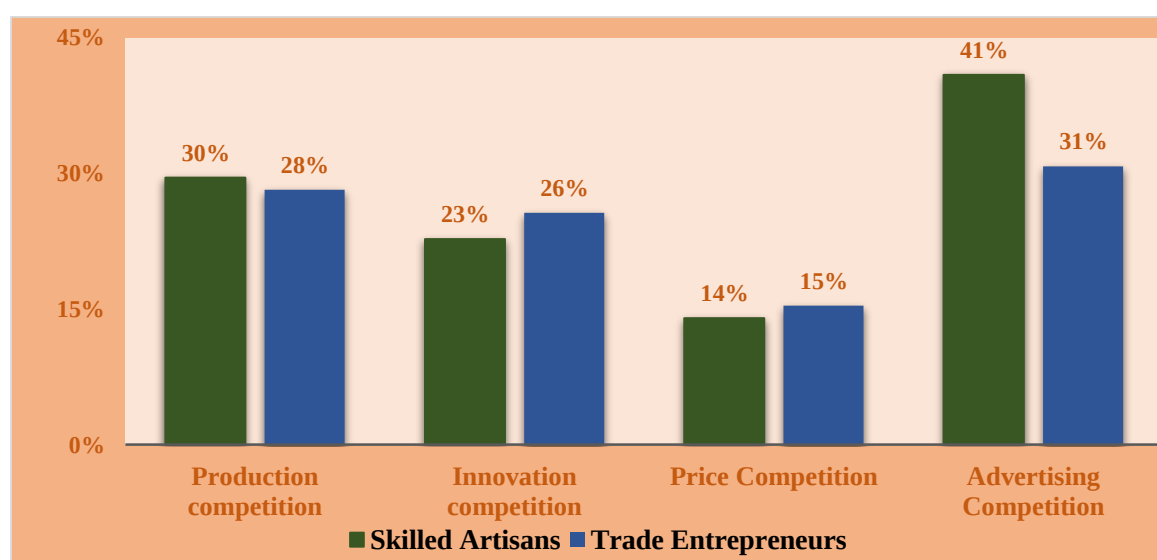
Interpretation

In setting up any enterprise, the owner faces challenges and managing such obstacles are the means to achieve success in the pathway. From the respondents, it was found that both the skilled artisans and trade entrepreneurs in pottery face unprecedented

challenges, especially in the monsoon season, which accounts for 14% and 15.38% for the former and latter, respectively. A portion also talks about the lack of training using advanced machinery to reduce pottery labour intensiveness and slow down production efficiency using indigenous equipment. Outdated selling methods in their house verandah or a small portion of their own house, therefore, being away, from the limelight, contributes to 49% among skilled artisans and 43.6 % among the trade entrepreneurs in pottery. About 20.45% of skilled artisans and 25.64% of trade entrepreneurs in pottery faces strong competition from the organized sectors. The remaining 14% of the skilled artisans and 15.38% of the trade entrepreneurs face lack of working capital and inadequate investment/credit facilities and interference of middle man in pottery sale.

Keeping these challenges in mind, learning module was developed with problem-solving learning activities so that learning aspirants learn to overcome the challenges, manages all responsibilities and handles the risks in pottery enterprise.

Item SA 2.4.11/TE 2.4.10: What kind of competition do you face in pottery?

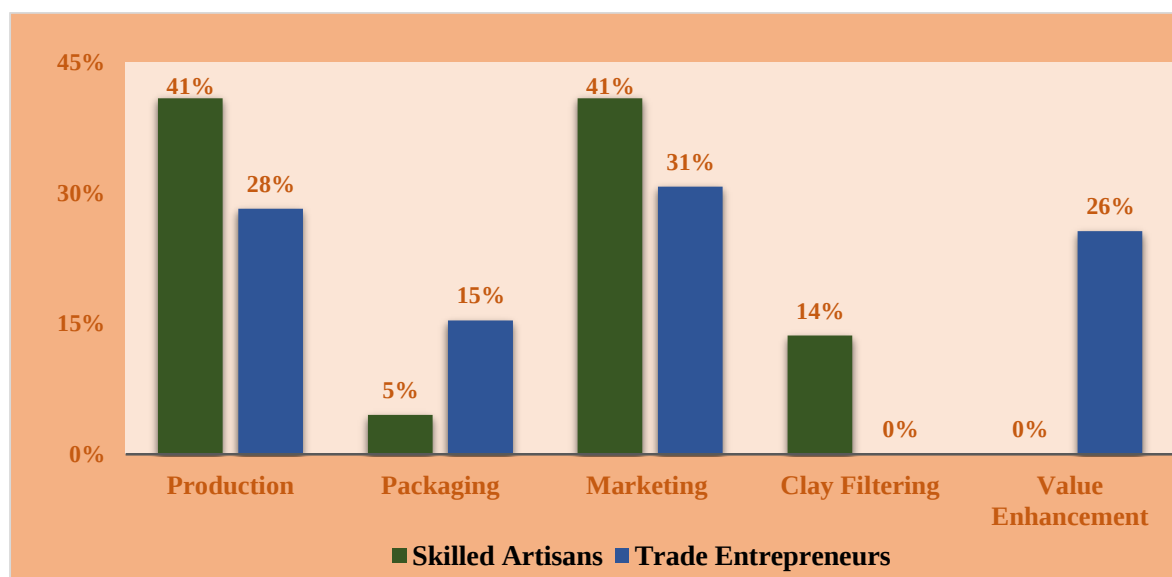


G12 : Graphical Representation- Competition in Pottery- From Both

Interpretation

According to skilled artisans and trade entrepreneurs in pottery, the kind of competitions faced in descending order are advertising competition (41% and 31% for skilled artisans and trade entrepreneurs respectively), production competition, innovation competition and cost-fixing competition. Besides crafting, they handle these competitions and look forward for resolve such issues. These also are obstacles and the learning aspirants in pottery should be able to handle these risks/threats and find the solutions. Therefore, any curriculum in pottery should include the usage of modern tools and equipment for crafting, diversification of crafted pottery products, innovations in pottery and adoption of contemporary marketing-cum-advertising strategies for skill development.

Item SA 2.5.12/TE 2.5.11 : In which aspects can technology be integrated for value and quality enhancement of pottery?



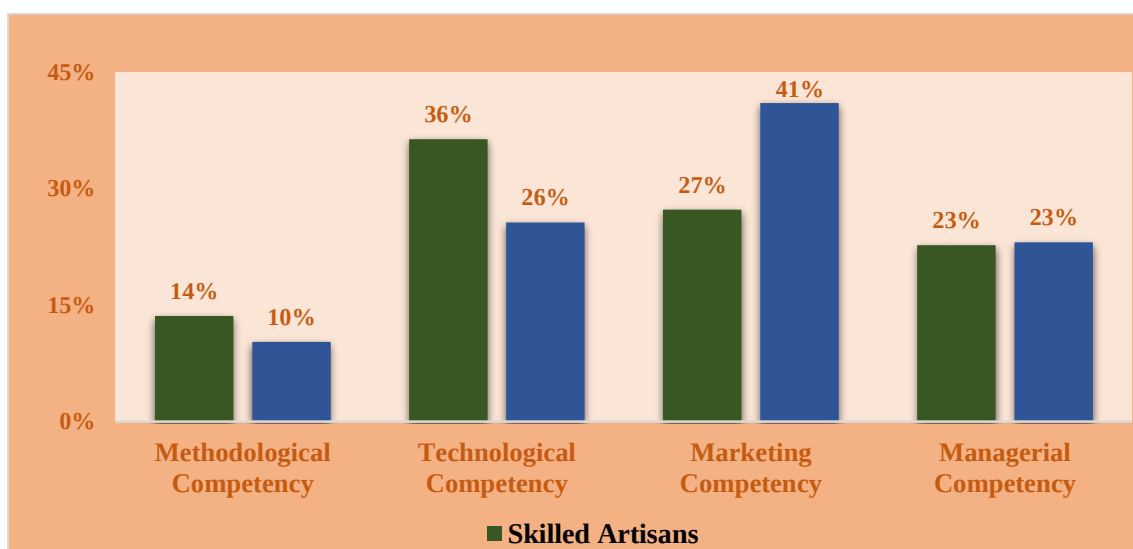
G13 : Graphical Representation- Integrating Technology in Pottery- From Both

Interpretation :

According to skilled artisans and trade entrepreneurs in pottery, marketing & promotion, innovative packaging methods, advanced machinery to accelerate production have to be

improved through technology. That can save time and labour. On further asking about the whereabouts of integrating technology in pottery, the skilled artisans have clearly pointed out that marketing should be focused on the most, because machines and improvised tools might improve the preparation and production of pottery products, but flourishing of this small-level industry can be elevated to a larger level, through stringent modes of marketing. Technology-induced marketing can help the field functionaries face immense challenges in the evolving marketplace. The overall marketing umbrella covers various aspects of advertising, public relations, and promotions, which is indispensable for the growth of pottery enterprise, thus encompassing the different curriculum units.

Item SA 2.5.13/TE 2.5.12 : What competencies should be implemented in pottery for its value enhancement?



G14 : Graphical Representation- Pottery Competency Requirements- From Both Interpretation

According to the respondents, new techniques of centering, clay-modelling, drying, glazing should be adopted (**methodological competency**), working with computers with appropriate digital skills (**technological competency**). Managing any enterprise involves

diversified customers. Pottery firms, being more customer-centric, maintaining proper relationship with customers is one of the key factors for the success of every enterprise (**managerial competency**) are also the necessary competencies. Marketing and Promotion of products and branding have become very essential today. That is absent in pottery industry due to lack of awareness among craftsmen about international market trends. It is necessary to understand that the craft will survive if it is more disseminated among general public, so appropriate **marketing competency** should be acquired. Thus, it is felt that a curriculum in pottery must contain suitable content and strategies for adopting the above competencies.

The summary of graphical findings can be represented as follows :



Fig F4.2 : Results of Graphical analysis at a Glance

Section II : Qualitative Data Analysis

The objective of analyzing qualitative data, gathered by various tools, has a multi-holistic perspective and studying existing real-life situations as they unfold naturally, non-

manipulatively and inconspicuously with impartiality to emerging patterns without presumed restrictions in results.

The first step in qualitative data analysis was to develop a thorough and comprehensive description of the existing situation under study. The data gathered by a wide variety of methods, such as structured questionnaires and field notes, are voluminous and primarily qualitative in nature. Careful analysis of the provided in-depth answers to the research questions. Responses from participants were documented using qualitative methods regarding the present status and future possibilities in pottery. The method followed for analyzing the research questions can be diagrammatically represented as :

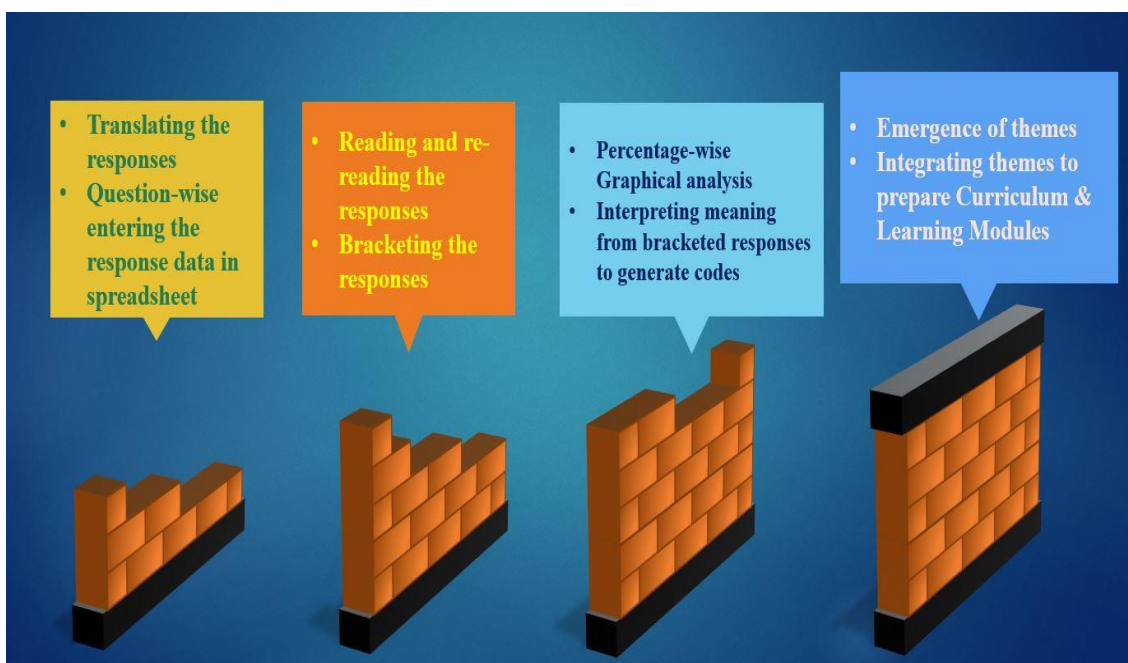


Fig F4.3: Analysis of Research Questions

Thematic Analysis

Thematic analysis (TA) is universally used in qualitative research to identify, analyze, and report patterns or themes in response to data (Braun & Clarke, 2006). Keeping this in mind, the researcher ascertained themes that fits the phenomenon under study. Braun and Clarke (2006) recommend that thematic analysis serves best when investigating an

unexplored area or if research focuses on the views of unknown respondents. Thematic analysis, for this study, was deemed necessary, for the socio-psychological interpretation of the data set from the researcher's point of view.

This study collected data for the research process using questionnaires guided by the researcher's theoretical framework. The researcher made rational decisions about the extent to which themes were identified, using inductive analysis. Braun and Clarke proposed a six-stage process for performing thematic analysis.

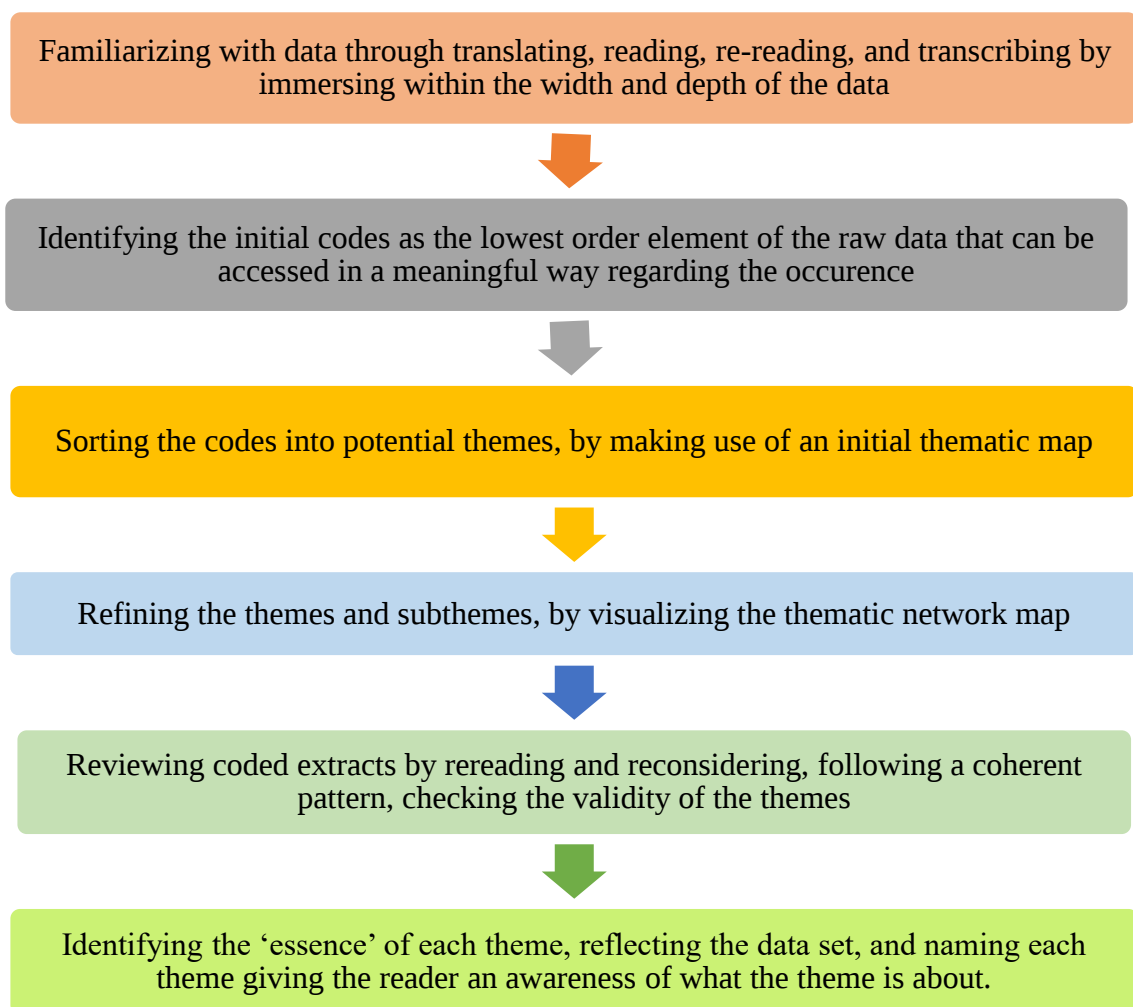


Fig F4.4: Schematic Overview of Thematic Analysis Procedure (Braun and Clarke, 2006)

The analysis followed the six successive stages proposed by Braun and Clarke (2006). The first stage consisted of reading and re-reading each answer; preparing a verbatim

report with punctuation to validate and retain the meaning of what participants convey (Braun & Clarke, 2006). This phase is to familiarize with the data (Bird, 2005).

In the second stage, the transcript has been reviewed in detail and interesting codes have been noted within the transcript. When records were encrypted, key characteristics became apparent and similarities and differences between the data became apparent. The interpretation of data through a theoretical lens, was kept in mind by the researcher during the analysis. The researcher noticed awkward elements in the participants' responses when interacting with the data. Some respondents used linguistic metaphors to express their feelings about the occupational details of pottery.

In the third stage, chunks of data were marked, scored and grouped based on their similarity, eventually creating themes.

In the next stage, the nomenclature of the themes were brought forward according to the perceived and indicative meanings of the codes.

In the next step, it was noticed that few themes and sub-themes deemed overlapping. After a while away from the data, it was finally reviewed with a fresh mind, to create the right themes. It is important, when creating themes, that participant feedback is not lost; therefore, original transcripts and codes were reviewed for reliability. It can be noted that the participants mainly provided an awareness of how they view the profession.

Briefly, the researcher began by coding segments of the transcript that relate to the meanings the participants assigned to the questionnaire questions. Themes drawn from the data were inductive, meaning they were drawn from the data itself and directly reflect what participants have shared. For this study, the researcher used thematic network analysis to discover themes in response records using an inductive coding process that

involves examining text fragments and define basic themes for sorting data. Generation of themes systematise the extraction of:

- (i) lowest order pattern evident in the excerpt (Codes);
- (ii) codes grouped together to summarize data response (Categories); and
- (iii) collective terminologies encapsulating the principal analogy in the excerpt/text as a whole (Themes).

The following is an account of the thematic analysis conducted in the study. It should be noted that some codes have been used for respondent IDs. Here, the first two alphabets means the category of respondents- SA stands for Skilled Artisans, TE stands for Trade Entrepreneurs, third alphabet stands for the pottery site from which the responses have been collected, P, C,G and K stands for Panchmura, Chaltaberia, Ghurni and Kumortuli. The number stands for the respondent serial number in which the responses have been recorded and tabulated.

Table T4.4: Thematic Analysis from Transcript Responses

Item SA 2.1.2 : What tools and equipment do you use for crafting pottery products?					
Respondent Code	Response in Transcript	Chunking Responses	Code	Category	Themes
SAP_01,05,07,08,10,11,12,14,17	<i>“We use tools which are kitchen and gardening tools – sponge, knives, spoon, fork, ribbon, wooden spatula, needle, borer, wooden rib, scraper, shredder”</i>	<i>“kitchen and gardening tools”</i>	Low-cost tools Indigenous designing tools	Indigenous tools	Indigenous Designing tools
SAP_03,04,09,13,15,18	<i>“The tools that we use are our daily-utility based tools like shape cutters, knife, blade, water bowl and bucket, needles of different shapes, rib, etc.”</i>	<i>“daily-utility based tools”</i>	Daily utility based tools	Indigenous tools	Indigenous Designing tools
SAC_20,23,25,26,27	<i>“Here, our traditional potter’s wheel is no longer used, similar machine is used, to save time and labour.”</i>	<i>“machine is used, to save time and labour.”</i>	Machines for modelling	Modern equipments	Modern modelling equipments
SAC_19,22,24,28	<i>“We use some modern equipments and rest are all indigenous ones, indigenous ones help in designing while machines build pots.”</i>	<i>“some modern equipments and rest are all indigenous ones”</i>	Machines for modelling Indigenous designing tools	Modern equipments Indigenous tools	Modern modelling equipments Indigenous Designing tools
SAG_31,32,34,35,38	<i>“Our crafting tools are available for everyday use such as wooden knife, wooden scraper, rib, stick, brushes, colours, needle, hole-maker, bottle caps, etc.”</i>	<i>“crafting tools are available for everyday use”</i>	Indigenous low-cost crafting tools	Indigenous tools	Indigenous Designing tools

SAG_29,30,33,36,37	<i>“Our clay toys have wires within them, so wire cutters and pliers are very much needed, the rest sharp objects for designing are from kitchen.”</i>	<i>“wires within them, so wire cutters and pliers are very much needed, the rest sharp objects for designing are from kitchen.”</i>	Wires and Indigenous designing tools	Indigenous tools	Indigenous Designing tools
SAK_39,40,41,42,43,44	<i>“Our work generally focuses on designing, so we use sharp-pointed objects like needle, nails, knives, wooden scrapers, brushes, colours are used for painting while our hands speak the rest”</i>	<i>“sharp-pointed objects.....” “brushes, colours are used for painting while our hands speak the rest”</i>	Indigenous designing tools Hands for hand-building pottery Brush and colours for designing	Indigenous tools Hands Painting tools	Hands for Hand-building Pottery Indigenous Designing tools
Item SA 2.2.5/TE 2.2.4: What are your modes of packaging and marketing the clay products?					
Respondent Code	Response in Transcript	Chunking Responses	Code	Category	Themes
SAP_02,03,05,07,10,11,14,15,16,17	<i>“There are no such modes of marketing our products. People know this village from travelogues and youtube videos. We only have business cards which we give to every customer on purchase. We participate in exhibitions during winter. For packaging, we use carton boxes filled with straw and newspaper.”</i>	<i>“business cards which we give to every customer on purchase” “For packaging, we use carton boxes filled with straw and newspaper.”</i>	Business cards Carton boxes Straw and paper	Traditional methods of packing Outdated marketing strategy	Finding easily available resources for packing Adopting advanced marketing strategies Training in marketing and packaging from experts
SAP_01,04,06,12,13,18	<i>“We have business cards only which includes all our details. We use packing boxes for big size items and only paper for small items.”</i>	<i>“business cards packing boxes for big size items and only paper for small items.”</i>	Business cards Paper Packing boxes	Traditional methods of packing	

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				Outdated marketing strategy	
SAC_19,20,22,25,26,27,28	<i>“There are no modes of marketing. We have business cards prepared by an NGO. Clay products are subjected to breakage, so we should have new kind of packaging, but we are still into traditional packing with paper and straw.”</i>	<i>“business cards prepared by an NGO we should have new kind of packaging, but we are still into traditional packing with paper and straw”</i>	Business cards, Traditional packing method	Traditional methods of packing Outdated marketing strategy	
SAC_21,23,24	<i>“In today’s world, there is need of marketing and advertising. But, we have enough orders, as people know this village by name. We pack the clay products by straw and paper. For long distance, we use carton boxes. There is training required for new kind of packaging, so that the clay products do not break.”</i>	<i>“pack the clay products by straw and paper” “For long distance, we use carton boxes training required for new kind of packaging, so that the clay products do not break.”</i>	Traditional packing method Need for marketing and advertising	Traditional methods of packing Outdated marketing strategy Training needs in marketing	
SAG_29,31,33,34,37,38	<i>“We use wires to make clay dolls. So, these do not break easily like clay pots. So, packaging is also not an issue.”</i>	<i>“wires to make clay dolls” “do not break easily like clay pots packaging is also not an issue”</i>	Not subjected to breakage		
SAG_30,32,35,36	<i>“For small packaging, we use hand-made papers, for bulk packaging, we use carton boxes, and wooden boxes and cover the toy pieces in straw, to</i>	<i>“small packaging, we use hand-made papers, for bulk packaging,... use</i>	Traditional packing method	Traditional methods of packing	

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	<i>keep each piece separated from the other.”</i>	<i>carton boxes, and wooden boxes and cover the toy pieces in straw, to keep each piece separated from the other”</i>		Outdated marketing strategy	
SAK_40,41,42,43,44	<i>“Packaging is the most important thing in selling clay products. We use boxes of different sizes for different items. For some, we use straw and paper, while for some we use bubble wrap, but that increases the cost of items. It all depends on the customer demands.”</i>	<i>“we use straw and paper, while for some we use bubble wrap”</i>	Traditional and new packing method	Traditional methods of packing Outdated marketing strategy Training needs in marketing	
TEP_46,47,49,50,51,52,53,54,55,57,58,59	<i>“We use traditional packaging system, straw and Paper, for spreading our craft, we use hand-outs and business cards”</i>	<i>“traditional packaging system, straw and Paper hand-outs and business cards”</i>	Traditional packing method Business cards Handouts	Traditional methods of packing Outdated marketing strategy	
TEC_60,62,63,65,66,67	<i>“We have different modes of packaging, straw-paper, wooden boxes, carton boxes, bubble wrap. We adopt no marketing strategy, but we feel that advertising is required these days”</i>	<i>“straw-paper, wooden boxes, carton boxes, bubble wrap. no marketing strategy advertising is required”</i>	Traditional and modern packing method No marketing method	Traditional methods of packing Training needs in marketing	
TEG_69,70,72,74,75,76	<i>“We are lagging behind in terms of marketing and packaging, if some</i>	<i>“lagging behind in terms of marketing and packaging,</i>	Traditional packing method,	Traditional methods of packing	

	<i>training is arranged by the Government, it would be helpful”</i>	<i>if some training is arranged by the Government, it would be helpful”</i>	No marketing strategy Training needs in marketing and packing	Outdated marketing strategy Training needs in marketing	
TEK_78,80,81,82,83	<i>“We already have huge orders, we never thought of adopting any marketing strategies, we use straw-paper and wooden boxes for packaging and long-route transportation”</i>	<i>“never thought of adopting any marketing strategies”</i>	Traditional packing method, No marketing strategy	Traditional methods of packing Training needs in marketing	
Item SA 2.3.6/TE 2.3.7:Do you think the demand of pottery products has increased over the years?					
Respondent Code	Response in Transcript	Chunking Responses	Code	Category	Theme
SAP_02,03,05,06,07,09,11,14,15,17	<i>“Yes, it has increased very much, as plastics are being called nowadays to bring health hazards, people are switching to modes other than plastic”</i>	<i>“has increased very much, as plastics are being called nowadays to bring health hazards, people are switching to modes other than plastic”</i>	High demand	Bio-degradable, Sustainable, hence demandful	Eco-friendliness, Sustainable craft
SAP_01,04,08,12,13,18	<i>“The demand has increased a lot, when plastics were predominant, we were at a loss, but now plastics are getting banned. As a result, clay products are in demand.”</i>	<i>“has increased a lot but now plastics are getting banned. As a result, clay products are in demand.”</i>	High demand	Bio-degradable, Sustainable, hence demandful	Eco-friendliness
SAC_20,21,22,23,26,27	<i>“There is a huge demand of pottery products now, people purchase in bulk for home décor and festivals.</i>	<i>“huge demand of pottery products now</i>	Huge demand Reusing Pottery	Demandful, 3R	Eco-friendliness,

	<i>Also now, terracotta grinder has come into emergence, where broken clay can be reused by maintaining 80:20 ratio, to make them even harder”</i>	<i>can be reused”</i>			Sustainable craft, 3R
SAC_19,24, 25,28	<i>“People are afraid of using plastics now, and paper is subjected to easy damage, so clay products are being used to a greater extent. They are at a very high demand during the summers. Now, wasted clay items can be used again and that is reducing wastage.”</i>	<i>“clay products are being used to a greater extent can be used again”</i>	High demand Reducing pottery wastage	Bio-degradable, Sustainable, hence demandful 3R	Eco-friendliness, Sustainable craft, 3R
SAG_29,31, 33,34,35,38	<i>“Toys are in demand only when the designs are excellent. So, we always focus on quality and innovativeness. But we face wholesalers more than customers”</i>	<i>“in demand only when the designs are excellent”</i>	Moderate demand	Designing Skill sustaining demand	
SAG_30,32, 36,37	<i>“Clay products are in high demand, but toys are not always in much demand, hence we make small dieties too.”</i>	<i>“Clay products are in high demand”</i>	Seasonal demand of clay toys	Seasonality, Demand in existence	
SAK_39,40, 41,42,43	<i>“Pottery will forever have demand, it is our age-old craft and hence of much worth, easy to use.”</i>	<i>“Pottery will forever have demand”</i>	High demand	Demandful	Sustainable craft
TEP_46,47, 48,50,51, 54,55,57,58, 59	<i>“Very high demand is experienced by us. In exhibitions, we get stocked out. Also, festive seasons bring us a lot of orders.”</i>	<i>“Very high demand is experienced by us”</i>	Very high demand	Demandful	Sustainable craft

TEC_60, 62,63,64,66, 67	<i>"We face demands throughout the year for different kinds of products."</i>	<i>"demands throughout the year"</i>	Demands throughout the year	Demandful	Sustainable craft
TEG_69, 71, 72 , 73,75,76	<i>"Not very huge demands, but it has increased considerably over the decade, since when plastics have been declared as harmful"</i>	<i>"increased considerably over the decade, since when plastics have been declared as harmful"</i>	Increase in demand	Bio-degradable, Sustainable, hence demandful	Eco-friendliness, Sustainable craft
TEK_78, 79, 80, 81 ,83	<i>"Our land celebrates festivals throughout the year, hence there is surging demand throughout the year."</i>	<i>"surging demand throughout the year."</i>	Demands throughout the year	Demandful	Sustainable craft

Item SA 2.3.8/TE 2.3.6: Which skills are highly required in pottery?

Respondent Code	Response in Transcript	Chunking Responses	Code	Category	Theme	Sub-Theme
SAP_02, 03,05, 07 , 09, 11,12,14, 15,17	<i>"If anyone is interested in our craft, first thing needed is to understand the value of pottery. One must be able to get idea about the various pottery crafting methods, by observing the work of the craftsmen thoroughly."</i>	<i>"Value of Pottery"</i> <i>"Various pottery crafting methods by observing"</i>	Valuing the craft Observation-based learning of pottery methods	Affective Skills Observational Skills	Holistic Crafting Skills	Vocational Skills
SAP_01,04, 08,10,13, 16, 18	<i>"Pottery is an interplay of clay, water and our hands. The more our creative thoughts are, the more skills we have in our hands, the more flourishing our craft becomes."</i>	<i>"skills we have in our hands"</i> <i>"creative thoughts"</i>	Hands-on experiential learning Creativity	Experiential work-based skills Creative Skills	Holistic Crafting Skills	Vocational Skills

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					Design and Management Skills	
SAC_20,21,22,23,25,27,28	<i>“Pottery obviously needs understanding the suitability of the correct method to use clay for crafting different products, simultaneously with choosing designs for innovation. Risk handling is yet another skill that I would suggest any beginner potter for their enterprise.”</i>	<i>“suitability of the correct method to use clay for crafting different products” “choosing designs for innovation” “Risk handling”</i>	Decision-making Innovative designing Risk management	Work Management Skills Designing Skills Work Management Skills	Design and Management Skills Holistic Crafting Skills Design and Management Skills	Vocational Skills
SAC_19,24,26	<i>“Only handling clay is not the skill in pottery, it involves identifying the correct clay, quality checking, brainstorming innovative designs and managing the risks associated with the work.”</i>	<i>“identifying the correct clay” “quality checking” “brainstorming innovative designs” “managing the risks”</i>	Identification Brainstorming Innovative Designing Risk Management	Cognitive Skills Cognitive Skills Designing Skills Work Management Skills	Holistic Crafting Skills Design and Management Skills	Vocational Skills
SAG_29,31,32,33,34,36,37	<i>“Pottery is not an easy task. We all have adopted crafting by observing the work of our forefathers. But compared to those days, we face several hurdles today. For bulk production, we need funds, handle clients, fix costs with wholesalers, work according to</i>	<i>“crafting by observing the work” “several hurdles... need funds, handle clients, fix costs with wholesalers, work according to</i>	Observation-based learning of pottery methods Response to customer demands	Observational Skills Communication Skills	Holistic Crafting Skills Communication Skills	Vocational Skills Entrepreneurial Skills

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	<i>customer demands, and think innovative but utility-based products.”</i>	<i>customer demands” “think innovative but utility-based products”</i>	Innovative thinking	Cognitive Skills	Holistic Crafting Skills	
SAK_39, 41,42, 43 , 44	<i>“Every craft has its own value. It involves intensive hard work and risks. If a beginner does not adopt the hands-on crafting skills perfectly, then the enterprise might be a failure. Simultaneously, managing the risks, keeping updated about the latest advancements through use of computers, newer promotional modes through technology is also needed.”</i>	<i>“intensive hard work and risks” “hands-on crafting skills” “managing the risks” “keeping updated about the latest advancements” “through use of computers” “newer promotional modes through technology”</i>	Risk handling Hands-on experiential learning Technologically updated Computer awareness Marketing modes	Work Management Skills Psychomotor crafting Skills Tech-based Skills Computer Literacy Skills Innovative Marketing Strategies	Design and Management Skills Holistic Crafting Skills Technological Skills Marketing Skills	Vocational Skills Technological Skills Entrepreneurial Skills
TEP_46,48, 49,50,51, 53,54,56,57,58,59	<i>“Adopting online marketing strategies can help to flourish and enrich our traditional craft. Potters should be the saviours of our craft. So, a potter must understand the value of the craft, and try to learn the mechanisms that can replace the traditional</i>	<i>“Adopting online marketing strategies” “enrich our traditional craft... understand the value of the craft”</i>	Online marketing modes Valuing the craft	New Marketing Strategies Affective Skills	Marketing Skills Holistic Crafting Skills	Entrepreneurial Skills Vocational Skills

	<i>technologies with the modern ones. Our craft lacks involvement of the potters using computers for daily record maintainance, so it is not much in limelight."</i>	<i>"replace the traditional technologies with the modern ones"</i> <i>"lacks involvement of the potters using computers for daily record maintainance, so it is not much in limelight"</i>	Technological upgradation Computer awareness	Technological Skills Computer Literacy Skills	Technological Skills	Technological Skills
TEC_61,62,64,65,66,67	<i>"Traditional pottery involved only some specific products like idols and small showpieces. However, days have changed and so has changed the customer demands. So, as a beginner, one should understand the risks associated with the craft like promoting the craft, managing crisis, communicating with wholesalers and direct customers, generating funds for modern machines"</i>	<i>"managing crisis"</i> <i>"promoting the craft"</i> <i>"communicating with wholesalers and direct customers"</i> <i>"generating funds for modern machines"</i>	Crisis management Communication Understanding customer demands Technological advancement	Work Management Skills Communication Skills Technological Skills	Design and Management Skills Communication Skills Technological Skills	Vocational Skills Entrepreneurial Skills Technological Skills
TEG_68,69,71,72,74,75	<i>"Modern-day skills to enter the pottery craft market include crafting, but choosing the appropriate technique for every product, collaborating with larger markets and upgradation</i>	<i>"choosing the appropriate technique for every product"</i>	Decision-making Marketing modes	Work Management Skills Marketing Strategies	Design and Management Skills Marketing Skills	Vocational Skills Entrepreneurial Skills

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	of pottery technologies. Awareness about computers may be helpful”	“collaborating with larger markets” “upgradation of pottery technologies” “Awareness about computers”	Technologically updated Computer awareness	Technological Skills	Technological Skills	Technological Skills
TEK_78,79,81,83	“During the time when our forefathers used to craft, there were same kind of customer needs and also less sale. Today, customer demands have changed, sales have increased, designs have become finer, raising funds for buying low-cost machines for centering/firing and promoting the craft by newer methods have come up. One interested in pottery needs to be strategic, design-oriented and inclined towards promoting their crafted products.”	“customer demands have changed” “raising funds for buying low-cost machines for centering and firing” “needs to be strategic, design-oriented and promoting their crafted products, nowadays through social media”	Understanding customer demands Strategy management Innovative designing Marketing modes	Communication Skills Work Management Skills Designing Skills Adopting Digital Marketing Strategies	Communication Skills Design and Management Skills Marketing Skills	Vocational Skills Entrepreneurial Skills

Triangulation

To validate and verify the results, the method of triangulation of multiple views from several sites (sources) was applied. Data from questionnaires and field notes were "triangulated" to arrive at a cohesive whole that answers the research questions. In this study, cross-examination refers to using two or more data sources to reach a conclusion that cannot be reached using data from a single pottery site. Once the data from the different data sets were analyzed separately, it was triangulated and uncovered recurring patterns or themes that contribute to the knowledge in the field functionaries' responses on skills, competencies, needs, challenges and possibilities of pottery. This type of cross-check was intended to involve multiple participants presenting a single unified picture of the situation, thereby reducing potential subjectivity in interpreting research findings. Studies that use data from a single group of participants, from a single site (pottery cluster), are more prone to errors than studies that obtain data from multiple sites, in which the data provides cross-data validity checks. Patton (1990) points out "Multiple sources of information are sought and used because no single source of information can be trusted to provide a comprehensive perspective." Obtaining data from multiple respondents from multiple sites, allows inquiry into a research question with an array of techniques that have their complementary strengths in addition to non-overlapping weaknesses. In this study, data were collected through observation, field notes, questionnaires, and artefacts. Data was triangulated between two questionnaires administered to skilled artisans and trade entrepreneurs in pottery, the other data sources (questionnaire, field note, and artefact) and data sites (four rural pottery clusters in four districts of Bengal) used to provide context for the tools and to aid in developing responses to relevant questionnaire items and points of discussion.

In the present study, triangulation comprising of gathering data from different stakeholders was done involving various tools and combined use of qualitative and quantitative research methods to arrive at convergent findings. The method of triangulation was used in establishing validity using:

1. Craft-Sustenance and Skill-Based Questionnaire for Skilled Artisans in Pottery
2. Entrepreneurship and Skill-Based Questionnaire for Trade Entrepreneurs
3. Day-wise field notes maintained by the researcher
4. Corroboration with relevant literature to enhance the credibility of the interpretations.

The triangulation method involved the following process:

1. Inclusion of data collection sources increasing the validity of the study results.
2. Observation of empirical data from various angles using the field notes, observations and photographs.
3. The video recorder and the transcripts implying reliability and accuracy.
4. Cross-checking of the obtained data by asking parallel questions to ascertain clear response.
5. Periodic observations.

SWOC (Strengths, Weakness, Opportunities, Challenges) Analysis of Pottery as evident from the field data

The item-based graphical and thematic analysis reveals a detailed understanding of the strengths, weaknesses, opportunities and challenges in pottery. Hence, the researcher

conducted a SWOC analysis based on the responses collected from the fieldwork carried out in the rural pottery clusters of Bengal. SWOC analysis is a strategic thinking-based flexible framework that enables one to focus on strengths, to create or recognize opportunities and to use them appropriately. It enables one to foresee possible threats to build a successful future for the venture.

SWOC analysis (alternatively termed, SWOC Matrix) is a structured planning grid used to assess the Strengths, Weaknesses, Opportunities and Challenges involved in a business project or a venture. A strengths, weaknesses, opportunities and challenge (SWOC) analysis is an in-depth assessment of external and internal factors impacting ventural operations. Moving across the analysis helps to identify where the venture shows its best and where it needs to upgrade to boost up and reach an ultimatum with innovation.

The characteristics inherent in the best performing entrepreneurial venture, completing aspects such as skills, capabilities, financial resources, products and services, customer goodwill, can be called strengths. Anything the enterprise has difficulty or lacks is considered a weakness and can be minimized or eliminated. Opportunities are emerging situations in which an enterprise can grow and succeed with innovative or existing products. The opportunity could be an untapped market, an emerging technology, or anything that could complement entrepreneurship. Perhaps the most important factors in SWOC analysis are the challenges an enterprise faces, either in marketing or in manufacturing.

Summarizing the results of graphical and thematic analysis, the following points have been deciphered owing to the Strengths Weaknesses Opportunities Challenges (SWOC) analysis of pottery as an enterprise.

SWOC ANALYSIS



Fig F4.5: SWOC Analysis of Pottery as an Enterprise

Objective 5 : To design a curriculum model in pottery

RQ₂ : How does the framework of curriculum model in pottery for entrepreneurship look like?

Interpretation

The curriculum mirrors societal aspirations. Society determines what valuable knowledge, desirable attitudes and relevant skills must pave the pathway of future. The curriculum can make the learner aware of new knowledge besides the existing one and help imagine the possibilities for change by acquiring new skills suited for society.

In this study, the competency-based curriculum model in pottery has been designed to equip the learners in pottery modelling and marketing skills. In the process of pottery curriculum designing, the investigator has planned, taking into consideration the desirability, entrepreneurial attitude, entrepreneurial propensity and self-efficacy. Taking into account the learners' psychological attributes, the curriculum units have been contextualized. Also, emerged themes from thematic analysis of responses in questionnaires such as entrepreneurial skills, employability skills, environmental sustainability skills, sustenance needs, possibilities, and livelihood opportunities in pottery have been included in the curriculum model. The curriculum emerging from this data was subject to the forthrightness of the field functionaries and the researcher's interpretations. Explicit themes from the analysis of collected data worked to create an interpretive portrayal of the pottery curriculum and the 'construction of reality' based on participant experiences and their implicit meanings. The model has been framed based on the thematic analysis of the responses obtained from the field functionaries in pottery.

The curriculum follows the principle of sequence- beginning with an acquaintance with the pottery terms, then getting introduced to tools and techniques through observation and sequentially moving towards hands-on crafting from simple to complex pottery commodities. It facilitates the learning aspirants to move from novice to expert level. The field functionaries have insisted the fact that the novice trainees in pottery should begin with learning the basics. Once they become conversant with the basics, grasping the expert level of learning pottery would be easier.

The designed pottery curriculum model has been organized into 15 units as described below. The units of the curriculum model has been chosen based on the sequence of the process for

construction of the clay products, from the daily field notes maintained by the researcher during data collection. Units 1-8 is meant to impart basic concepts and vocational skills in pottery, while the units 9-15 focuses on mapping advanced concepts and other skills (entrepreneurial, technological, environmental sustainability) in pottery. The model has adapted the competency-based triad model – **content-instruction-assessment**- the key facets of an educational process. The curriculum model is demand-driven, and usually consists of scope of content mapped to the demands of the target learning aspirants. The instruction implies the teaching-learning methods to assist learning aspirants in achieving the learning outcomes. The assessment techniques have been specified to meet the learner demands and evaluation of their adopted skills and competencies after curriculum transaction.

Table T4.5:Competency Developing Curriculum Model in Pottery

Unit of Competency	Learning Outcome (At the end of the unit, the learner will be able to)	Key Content	Innovative Pedagogy	Evaluation Techniques
1. Introduction to Pottery Terms	Familiarise themselves with the basic pottery terms List and define the types of pottery Distinguish the methods of pottery Enumerate the stages of clay	Glossary of Pottery terms Types of Pottery Stages of Clay Tools of Pottery and Process of Firing Other Technical terms	Observation-based Learning Static Visual/Video aid	Vocabulary Tests Preparing Infographics Quiz
2. The advent of Pottery – India and the World	Review the advent of pottery in India and the world Prepare a timeline of the history of pottery Compare the types of pottery practised in different parts of India	Emergence of Pottery in the ancient civilizations Advent of pottery in India Comparative account of pottery in different countries of the world Types of pottery practiced in India	Role play Puppetry shows Preparation of Timelines using graph papers Artefact exploration and e-portfolio creation	Worksheets Timeline Evaluation e-portfolio assessment with collected artefacts
3. Tools and Equipments of Pottery (Basic and Advanced)	Identify tools for hand-building and wheel pottery	Ribbon and Loop tools Needle tool Wire Cutter Modelling Tool	Interpretation Construction Design Pedagogy	Performance in Experiments

	Explain the functions of the tools	Scraper, sponge, Rib Callipers, Knife Rolling pin, Mould	Live Usage Demonstration	
4. Identification of Soils for Pottery	Classify the types of soil on the basis of the proportion of its constituents Determine which soil is suitable for which crop and why Justify why clayey soils are perfect for pottery	Definition and Classification of Soil Differentiating between Clayey, Sandy, Loamy soil on the basis of texture and constituents Alternatives of Clay Refining the Raw materials for Final Clay	Locating types of soil in India map Heuristic method	Problem-solving approach : Critical thinking and Collaborative method-based evaluation
5. Operation of Pottery Wheel	Illustrate the operation of traditional potter's wheel Compare the efficiency of traditional and automated potter's wheel	Components of traditional potter's and automated potter's wheel Efficiency of potter's wheel	Correlation method Experimentation	Sketching the structure of traditional and automated pottery wheel
6. Clay Modelling	Distinguish between pinching, rolling, hand-building and wheel throwing Take measurements and build 3D clay objects	Pinching Rolling Hand-building Wheel Throwing Coiling and Scoring Moulding	Field visits Learning from experts in pottery	Exhibition demonstration

7. Drying and Glazing of Pottery Products	Recognize sources of drying newly crafted products other than sun Differentiate between Glazed and Unglazed Pottery	Drying techniques and its importance Difference between glazed and unglazed pottery Ingredients of glazing	Experimentation	Performance in experiments
8. Kiln Setting and Firing in Pottery	Distinguish between types of natural kilns Arrange the steps of setting up a natural kiln List the precautions to avoid kiln mistakes Describe the functioning of electric kiln	Kilns and its types Setting up of Natural Kiln Using open and closed kiln Electric Kiln and its Functions	Heuristic method	Demonstration of difference in products from open and closed kilns
9. Demand-based Innovative Products in Pottery	Understand customer demands Analyze time-series trends in pottery Design innovative pottery products	Demand and Supply of Pottery Products Innovative Pottery : Clay Kitchenware Clay Toys Clay Jewellery Clay Decorative items	Experiential method Brainstorming Analytical Learning	Innovative Idea Assessment
10. Current Status and Recent Trends in Pottery	Understand obstacles faced in pottery	Obstacles in Pottery Crafting and Trading Past and Present Trends in Pottery	Project Method	Graphical Analysis

	Report recent trends in pottery	Future possibilities in Pottery		
11. Quality Check and Packaging of Pottery Items	Understand the importance and process of quality check of clay products Identify resources for packaging pottery items	Importance and Process of Quality Checking of Products Resources for packaging	Training workshops in Quality Check and packaging of pottery by experts	Evaluating the performance indicators at the end of the workshop
12. Entrepreneurial Skills in Pottery	Communicate clearly with wholesalers/customers and build seller-buyer rapport Develop information and financial literacy skills Apply managerial skills in pottery enterprise	Communication Skills: Verbal and Non-verbal, Listening, Reading, Speaking, writing Managerial Skills: Building Rapport, Convincing ability, Negotiating competency Information about financial schemes, Understanding investment, accounting Time management, Risk Management, Handling competitions	Simulation Role play Observation Interaction	Evaluating entrepreneurial skills of the learners in exhibition-cum-sale of finished pottery products

13. Values in Pottery	Recognize the economic values associated with pottery Summarize the socio-cultural values of pottery Discover the therapeutic values of using pottery products Develop entrepreneurial mindset and a passion towards pottery	Economic values Cultural values Therapeutic values Methods of value enhancement of the craft	Project method Interactive Discussion	Grade-based Evaluation Project assessment
14. Technological Skills in Pottery	Design technology-integrated craft marketing methods Develop innovative computer literacy skills in pottery crafting and trading	Computer literacy Modes of marketing Tech-based Advertising methods	Computer-based Training Brainstorming	Computer-based Test Infographic Designing
15. Environmental sustainability Skills in Pottery	Cite the importance of pottery products over plastic Relate green economy in pottery with green living	Eco-friendliness of pottery Limitations of Plastic products, Impact of Plastic on Environment Sustainability of Pottery products and Green Living Reduce, Reuse and Recycle in Pottery	Interactive discussion on Environmental Hazards of Plastic vs Eco-sustainability of Pottery e-poster presentation	Discussion-based Assessment e-poster evaluation

Objective 6 : To prepare learning module in pottery

RQ₃ : How to design the learning module in pottery for entrepreneurship?

Interpretation

A Module is a teaching-learning media presented in the form of scripts or print media used to design learning activities sequentially. The module is presented as a complete unit, consisting of a series of learning activities organized to help learners achieve the appropriate learning objectives completely and systematically. A module is a form of teaching-learning material presented comprehensively and systematically, consisting of chalked-out learning experiences designed to help learners master the learning objectives. A module contains learning outcomes, learning activities and assessment methods. According to the Ministry of Education, module is a set of teaching materials systematically presented for learners to learn with the passive participation of the instructor.

A module optimizes learning resources while keeping learners in mind to capture their learning activities. The role of educators changes from informers to facilitators of learning by providing varied learning resources, stimulating enthusiasm for learning, providing feedback on their learning progress and helping them to know what they are learning is in line with their goals.

The learning process involving learner activity is reading 10%, listening 20%, seeing 30%, seeing and hearing 50%, discussing 70%, experimenting 80%, and teaching others 95% (Heinich et al., 1996). Therefore, teachers need to prepare good teaching tools for learners to participate in learning fully. The purpose of learning using module is to address the diversified learning capacities of learners through independent learning activities. The

learning activities 1-8 for the learning aspirants of pottery follows the Backward Design Model – which demonstrates a planning sequence of three stages :

The Backward Design Process

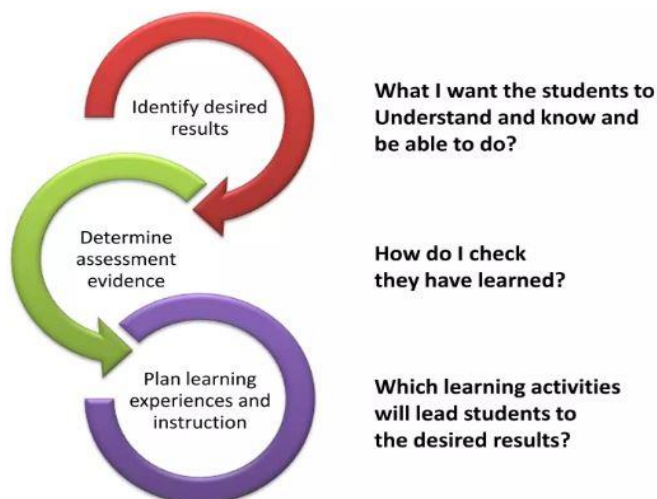


Fig F4.6: The three stages of Backward Design Model (Source: Google)

Stage 1. “Identify Desired Results” - In this first stage, learner goals and objectives are considered, examining nationally or locally established content standards and curriculum expectations.

Stage 2. “Determine Acceptable Evidence” – In this stage, teachers and curriculum planners first think like an evaluator before designing learning, and thus determine assessment methods to check whether students have attained the desired objectives.

Stage 3. “Plan Learning Experiences and Instruction” – In this stage, educators plan instructional activities with well-defined outcomes and pertinent evidence of understanding. Here, the teacher discusses the specifics of instructional planning – choice of teaching methods, sequence of module, references and evaluation methods. On the basis of the mentioned stages, the following learning module have been designed by the researcher, in consultation with the field experts (skilled artisans and trade entrepreneurs).

Learning Module

Introduction:

We all learn by doing. We observe our colleagues, simulate working conditions, make mistakes, and try to improve next time. More experienced workers show us how to organize things. Some learners take advantage of it while others do not. This learning module is intended to help understand some of how learning experiences are organized in a structured way so that they benefit learners, businesses and pottery sector functionaries, and at the same time benefit broader benefits to the labour market and the economy as a whole. The learning module with several learning activities tries to present what learners can learn practically to help introduce and improve structured pottery skill-based or competency-based learning.

Objectives of the Module

- to develop vocational skills in pottery through hands-on activities
- to help students to understand the entrepreneurial skillsets so that they make better career in pottery
- to expand and enhance the learners' learning experience through the activities
- to build learners' awareness about the needs and livelihood opportunities in pottery
- to empower teachers to know how learners construct knowledge, facilitate learning using an interdisciplinary perspective, help learners to acquire different strategies, competencies and skills for transacting pottery in context of their local surrounding/ experiences.

The learning activities' presentation in the following section has been adapted from Tomlinson and McTighe, *Integrating Differentiated Instruction + Understanding by Design*, ASCD, 2006.

Learning Activity 1

Activity Title – Clay Identification and Mixing

Stage 1 – Desired Results	
GOALS Classification of soils Identification of ideal soil type for constructing clay pots Preparing final clay and making clay pots for agricultural storage and understand the scientific reason behind this	Transfer
	<i>Students will be able to...</i>
	Identify the ideal type of soil for pottery and curate the basic clay pot Distinguish between various types of soil for agriculture
	Meaning
	UNDERSTANDINGS <i>Students will understand...</i> why clayey soils are perfect for pottery the Soil and Crop map of India ESSENTIAL QUESTIONS What are the points of differentiating between clayey, loamy and sandy soil? Why are clay pots used for storage of fruits and vegetables obtained from agriculture?
	Acquisition
	<i>Students will know...</i> The types of soil on the basis of the proportion of its constituents The dominance of crops according to different soils across India <i>Students will be skilled at...</i> Making clay pots for storage of agricultural grains Determining which soil is suitable for which crop and why
Stage 2 – Evidence and Assessment	
Evaluative Criteria	Evidence for Assessment
Classification of types of soil based on texture Preparation of final clay before making pots using appropriate clay composition Constructing clay pots	PERFORMANCE TASK(S): Students will prepare clay through appropriate proportionate mixing of clay, sand and water and make basic clay pot
	OTHER EVIDENCE: The teacher gives 3 containers consisting of clayey, loamy and sandy soil to the learner groups. He asks them to differentiate between the different soils, based on texture. This is also a good point to consider incorporating self-assessments and student reflections. The teacher then provides field-collected clay, sand and water and poses a mathematical problem of ratio and proportion. The learning aspirants solve the same problem using a hands-on approach and prepare the final clay before making clay pots on the potter's wheel, thus being evaluated.

Stage 3 – Learning Plan

Key Learning Events and Instruction

Resources :

1. Sample of Clayey Soil, Loamy Soil and Sandy Soil
2. Sample of Red, Black, Alluvial and Laterite Soil
3. India Soil Map

Activity :

W - The teacher assigns field work to the students to collect samples of soils from paddy fields, clay pot making area and agricultural lands yielding different fruits and vegetables. Later, they are intricately studied to arrive at their properties and classify them.

H – Hooking the learner’s interest - The teacher points out the availability of different types of soil in different parts of India using the India- Major Soil Map, state their advantages and limitations.

E- Equip students with competencies to make clay pots, help them experience the key ideas to clay composition and explore why clay pots are used for agricultural crops storage

R – Review and critically rethink designs and initiate peer discussion

E – Allow self-evaluation and brainstorming sessions among learners to make other utilitarian items out of remaining clay clod.

T – Tailor to the learners’ personal needs, abilities and interests

O – Organize learning experiences to maximize learner engagement and effective experimentation



Learning Activity 2

Activity Title – Pottery Tools and Classification of Levers

Stage 1 – Desired Results		
GOALS Structural and Functional Classification of levers Identification, labelling and functional specification of basic pottery tools	Transfer	
	<i>Students will be able to...</i> Identify, label and understand the function of the pottery tools during the pottery modelling process Classify the levers	
	Meaning	
	UNDERSTANDINGS <i>Students will understand...</i> The basis of classification of levers	ESSENTIAL QUESTIONS What are the points of differentiating between various levers? What are the different ceramic tools used for?
	Acquisition	
	<i>Students will know...</i> The functions of the basic pottery tools during the pottery modelling process	<i>Students will be skilled at...</i> Using basic pottery tools during wheel throwing, hand-building and Coiling Using Gardening Tools in the process of gardening
Stage 2 – Evidence and Assessment		
Evaluative Criteria	Evidence for Assessment	
Classification of levers Labelling and specifying the functions of pottery tools Finding differences b/w basic ceramic and gardening tool sets	PERFORMANCE TASK(S): Students will make use of basic pottery tools to understand the function of each of the tools in ceramics as well as gardening.	
	OTHER EVIDENCE: The teacher provides ‘Basic Ceramic Tool Set’ sheet and ‘Lever Classification’ sheet to use logical thinking and critical analysis to fill up the sheets for evaluation of the learners. Later, the teacher groups the learners, provides a set of ceramic and gardening tools, and asks to find similarities and differences between the sets.	

Stage 3 – Learning Plan

Key Learning Events and Instruction

Resources :

1. Basic Pottery Tool Set
2. Basic Gardening Tools
3. Functional Map of Pottery Tools
4. Pictorial chart of Classes of Levers

Activity :

W - The teacher shows a functional map of pottery tools as well a chart showing classes of levers and explains the functions of the ceramic tools and difference between the levers respectively.

H – Hooking the learner’s interest - The teacher points out the basic pottery and gardening tools, by handing over tool sets to the learner groups.

E- Equip students with competencies to classify any tool into lever classes and describe the functions of each of them in pottery and gardening.

R – Review and critically rethink designs and initiate peer discussion

E – Allow self-evaluation and brainstorming sessions among learners to make other utilitarian items out of remaining clay clod.

T – Tailor to the learners’ personal needs, abilities and interests

O – Organize learning experiences to maximize learner engagement and effective experimentation



Learning Activity 3

Activity Title – Clay Storageware and Principles of Calorimetry

Stage 1 – Desired Results		
GOALS Illustration of Principles of Calorimetry Making clay pots for curd and clay storage and understand the scientific reason why they are kept cool for longer duration Justify eco-friendliness and green sustainability of pottery	Transfer	
	<i>Students will be able to...</i>	
	Illustrate the principles of calorimetry by using potter's wheel to construct small clay bowls and water bottles	
	Meaning	
	UNDERSTANDINGS <i>Students will understand...</i> The principles of heat and calorimetry The difference between plastic and clay	ESSENTIAL QUESTIONS Why does water remain cool in clay water bottles or pitchers for a longer duration? Which principle of calorimetry keeps curd set in clay bowls?
	Acquisition	
	<i>Students will know...</i> Justifying the sustainable environmental and therapeutic values of pottery storageware	<i>Students will be skilled at...</i> Crafting clay storageware Reasoning why water keeps cools in clay containers for long.
Stage 2 – Evidence and Assessment		
Evaluative Criteria	Evidence for Assessment	
Illustration of Principles of Calorimetry Making clay pot using appropriate clay composition Understanding eco-friendliness and green sustainability of pottery	PERFORMANCE TASK(S):	
	Students will prepare clay through appropriate proportionate mixing of clay and water and make clay bowls and clay bottles using potter's wheel	
	OTHER EVIDENCE:	
	Learners can be evaluated through problem-solving to craft clay products while the scientific reasoning can be assessed using experimental approach. Problem solving method involves constructing a small-size clay pitcher (kalash) capable of 500 ml capacity. Water is stored from same source in 500ml pitcher and 500ml plastic pot. Both are then tasted and the differences are described.	

The teacher asks the learners to explore and prepare a computerized data-based report on the harmful long-term effects of plastic and why pottery storageware are eco-friendly and contributes to green sustainability. This is a suitable approach for engaging learners in learning through discovery.

Stage 3 – Learning Plan

Key Learning Events and Instruction

Resources :

1. Clay
2. Traditional Potter's Wheel / Semi-Automatic Potter's wheel
3. Indigenous equipments for levelling the clay
4. Field Notebook
5. Information Sheet on 'Heat and Calorimetry'

Activity :

W - The teacher begins with an anecdote of whether mud houses or pacca houses are cooler in summers.

H – Hooking the learner's interest - The learners are introduced to a potter who teaches them to build pots and pitchers on wheels, polish them and make them ready for use. They observe live demonstration by the potter and notes each step meticulously in their field notebook.

E- Equip students apply the same steps to construct hands-on storage products. The teacher later clarifies the principles of calorimetry and explains why clay water bottles, jugs, pots keep water cool for a longer time.

R – Review and critically rethink designs and initiate peer discussion

E – Allow self-evaluation and brainstorming sessions among learners to make other utilitarian items out of remaining clay clod.

T – Tailor to the learners' personal needs, abilities and interests

O – Organize learning experiences to maximize learner engagement and effective experimentation



Learning Activity 4

Activity Title – Clay Jewellery and Mensuration in Mathematics

Stage 1 – Desired Results		
GOALS Designing Clay Jewellery and miniature solid figures Working out Mathematical Mensuration Problems by taking appropriate measurements of 3D solids using geometrical instruments Develop entrepreneurial skills among learning aspirants	Transfer	
	<i>Students will be able to...</i> Create clay jewellery designs of different shapes and sizes applying mathematical mensuration formulae	
	Meaning	
	UNDERSTANDINGS <i>Students will understand...</i> The concepts of mensuration in mathematics The calculation of the area, perimeter, total surface area, volume of any clay solid structures.	ESSENTIAL QUESTIONS What are the principles to be kept in mind when designing clay jewellery? How can geometrical instruments be used properly to make measurements and apply formula to construct clay figures?
	Acquisition	
	<i>Students will know...</i> The utilization of geometrical instruments to make measurements of clay structures	<i>Students will be skilled at...</i> Crafting clay jewellery Constructing miniature and full-size clay 3D solid clay figures
Stage 2 – Evidence and Assessment		
Evaluation Criteria	Evidence for Assessment	
Competency in hand-building method for making clay jewellery and solid miniature figures through mathematical mensuration problems Development of entrepreneurial skills	PERFORMANCE TASK(S): Students will prepare clay through appropriate proportionate mixing of clay and water and make clay mound and then use hand-building method for jewellery and miniature figures	
	OTHER EVIDENCE: The teacher assigns project work to the students to collect pictures of clay jewelleries of historic civilizations and prepare a timeline. The teacher provides links of videos on making variations and combinations 3D solids and prepare clay pendants and ear-rings with designs as per their wish. They are motivated towards the task of organizing an exhibition-cum-sale for	

displaying their designs. They are evaluated on the basis of their aesthetic and entrepreneurial skills.

Stage 3 – Learning Plan

Key Learning Events and Instruction

Resources :

1. Clay clod
2. Rolling pin
3. Indigenous equipments for hand-modelling
4. Indigenous sharp objects (for designing)
5. Pliers
6. Colours

Activity :

W - The teacher demonstrates 3D solid clay models of various shapes and sizes

H – Hooking the learner’s interest - The learners are introduced to hand-building method and forms homogenous groups of learners and poses separate mathematical problems for making 3D solids from real-life using clay, providing them geometrical instruments and calculate the volume and total surface area –

- Chessboard
- Dice
- Volcano
- Pen Stand

E- Equip students apply the same steps to construct hands-on clay jewellery. The learners are allowed to explain their design strategies and discuss them with the teacher

R – Review and critically rethink designs and initiate peer discussion

E – Allow self-evaluation and brainstorming sessions among learners to make other utilitarian items out of remaining clay clod.

T – Tailor to the learners’ personal needs, abilities and interests

O – Organize learning experiences to maximize learner engagement and effective experimentation



Learning Activity 5

Activity Title – Scientific Clay Models

Stage 1 – Desired Results	
GOALS Preparation of a clay model of the interior of the earth with identification of its layers and specification of the relative size and thickness of each Earth layer Justification that the Earth's inner core is solid due to tremendous pressure and the Earth's outer core is molten	Transfer
	<i>Students will be able to...</i>
	Preparation of a clay model of the interior of the earth with identification of its layers and specification of the relative size and thickness of each Earth layer and justify the composition of each
	Meaning
	UNDERSTANDINGS <i>Students will understand...</i> The characteristics and constituents of the Earth layers – Crust, Mantle and Core ESSENTIAL QUESTIONS Why is the Earth's inner core solid and outer layer molten?
	Acquisition
	<i>Students will know...</i> Using clay, clay cutting knife, fabric colours and instruction sheet to construct Earth clay model <i>Students will be skilled at...</i> Preparing of a clay model of the interior of the earth with identification and specification of the relative size and thickness of each Earth layer
Stage 2 – Evidence and Assessment	
Evaluation Criteria	Evidence for Assessment
Constructing clay models using appropriate clay composition and justifying the composition of each of the models	PERFORMANCE TASK(S):
	Students will prepare clay through appropriate proportionate mixing of clay and water and make the mixture
	OTHER EVIDENCE:
	The teacher homogenously groups the learners to model spherical clay into the shape of the Earth and colour it white for inner core, then roll out orange clay for outer core, then wrap rolled out red clay for mantle and dry it thoroughly. Later, the learners are asked to apply a thin layer of blue for crust. The groups are then subjected to focus group discussions for brainstorming on which layer of Earth is solid and which is molten and why and what other innovative scientific utility models can be prepared using the same spherical clay model.

Stage 3 – Learning Plan

Key Learning Events and Instruction

Resources :

1. Clay
2. Fabric Colours
3. Clay cutting Knife
4. Ruler
5. Instruction Sheet for Learners
6. Information Sheet on 'Basic concept of the Layers of the Earth'
7. Markers and Pens

Activity :

W - The teacher demonstrates and describes the layers of the Earth using visual aid and specify the thickness of each of the layers along with their states of existence.

H – Hooking the learner's interest - The teacher facilitates the learners to model spherical clay using the resources and after completing the model, the learners cut the model into half to label the parts and complete collaborative critical thinking activity

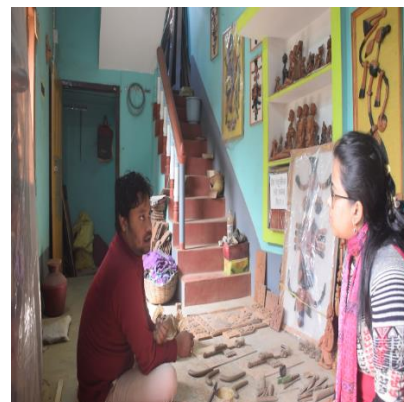
E- Equip students with competencies to make scientific clay models, help them experience the key ideas to clay composition, following the precautions and explore why Earth interior clay models have layers with different composition

R – Review and critically rethink designs and initiate peer discussion

E – Allow self-evaluation and brainstorming sessions among learners to make other utilitarian items out of remaining clay clod.

T – Tailor to the learners' personal needs, abilities and interests

O – Organize learning experiences to maximize learner engagement and effective experimentation



Learning Activity 6

Activity Title – Clay dolls and Organic Chemistry

Stage 1 – Desired Results		
GOALS Constructing small clay dolls by using ball-stick modelling Deduction of valencies from the electronic configuration of elements and analytically arrive at chemical bond formation between the elements.	Transfer	
	<i>Students will be able to...</i>	
	Preparation of small clay dolls by using ball-stick modelling Designing 3D molecular structure of inorganic and organic compounds using ball-stick modelling and define the type of chemical bond	
	Meaning	
	UNDERSTANDINGS <i>Students will understand...</i> The concepts of chemical bonding, electronic configuration and valency	ESSENTIAL QUESTIONS How to deduce valencies from the electronic configuration of elements and analytically arrive at chemical bond formation between elements?
	Acquisition	
	<i>Students will know...</i> Types of chemical bonding, the 3D Molecular structure of organic and inorganic compounds	<i>Students will be skilled at...</i> Constructing small clay dolls by using ball-stick modelling
Stage 2 – Evidence and Assessment		
Evaluation Criteria	Evidence for Assessment	
Constructing small clay dolls by using ball-stick modelling	PERFORMANCE TASK(S): Students will prepare clay through appropriate proportionate mixing of clay and water and make clay balls using hand-modelling method	
Designing 3D molecular structure of inorganic and organic compounds using ball-stick modelling and valency finding	OTHER EVIDENCE: The learners are provided with a large clod of clay and are instructed to roll out small balls out of it, of the same size. Each ball (same element) is coloured the same to make them distinct from the others. The teacher devises a game where he/she prepares chits with names of compounds in a box. The teacher announces to every learner a different compound, and the learner accordingly attaches the pins to each clay ball to form the compound. The learners are evaluated on the basis of the above activity and some follow-up questions.	

Stage 3 – Learning Plan

Key Learning Events and Instruction

Resources :

1. Clay balls, of the size of a plum
2. Fabric colours
3. Long straight pins
4. Information sheet of 'Bond structures of compounds'

Activity :

W - The teacher explains the concept of chemical bonding, molecular structure of the organic and inorganic compounds, along with the electronic configuration and valencies of elements.

H – Hooking the learner's interest - The teacher prepares a ball-stick modelling activity using the mentioned resources to retain the learners' interest in understanding chemical bonding.

E- Equip students with competencies to make small-sized clay dolls and colour them to prepare realistic figures, using ball-stick modelling, following the suitable precautions, with the support of clay artists.

R – Review and critically rethink designs and initiate peer discussion

E – Allow self-evaluation and brainstorming sessions among learners to make other utilitarian items out of remaining clay clod.

T – Tailor to the learners' personal needs, abilities and interests

O – Organize learning experiences to maximize learner engagement and effective experimentation



Learning Activity 7

Activity Title – Clay Diyas for Developing Entrepreneurial Skills

Stage 1 – Desired Results		
GOALS Constructing clay Diyas and incense holders Participate actively in exhibitions to know to art of establishing rapport with customers and selling items by developing entrepreneurship skills	Transfer	
	Students will be able to...	
	Develop entrepreneurial and communication skills in pottery	
	Meaning	
	UNDERSTANDINGS Students will understand... How to build rapport with customers	ESSENTIAL QUESTIONS How to be aware about customer demands and negotiate with them during selling products?
	Acquisition	
	Students will know... How to make clay diyas and sharpen entrepreneurial skills by organizing exhibitions	Students will be skilled at... Developing Entrepreneurial Skills Developing Communication Skills Apply Managerial Skills in the Enterprise
Stage 2 – Evidence and Assessment		
Evaluation Criteria	Evidence for Assessment	
Constructing clay Diyas and incense holders Participate actively in exhibitions to know to art of establishing rapport with customers and selling items by developing entrepreneurship skills	PERFORMANCE TASK(S): Students will prepare clay through appropriate proportionate mixing of clay and water and make clay diyas and other clay household items using hand-modelling method	
	OTHER EVIDENCE: The learners are provided with a large clod of clay and are instructed to roll out small balls out of it. Each ball is to be pressed and asked to give a Diya form. The teacher designs an activity by giving individual work to create geometrical shapes using hand-building method. Then, an instruction sheet is provided to the learners to use tools intelligently to convert each of the shapes formed into clay diyas. The learners are also provided with fabric and acrylic colours to design the diyas according to their ability and showcase them within a given time. The learners are evaluated based on the above activity and some follow-up questions.	

The teacher carries out a focus-group discussion with the evaluatees to plan about setting up stall for exhibition and decide entrepreneurial strategies to attract customers. Peer-group evaluation was carried out.

Stage 3 – Learning Plan

Key Learning Events and Instruction

Resources :

1. Clay clod
2. Fabric colours
3. Carving Tools

Activity :

W - The teacher recalls the concept of clay mixing and hand-building method in pottery.

H – Hooking the learner’s interest - The teacher facilitates the young students by calling upon the senior students to help them in hands-on hand-building activity to retain the learners' interest and for hands-on practice.

E- Equip students with competencies to make small-sized clay geometrical shapes and colour them to prepare coasters and trays, following suitable precautions.

R – Review and critically rethink designs and initiate peer discussion

E – Allow self-evaluation and brainstorming sessions among learners to make other utilitarian items out of remaining clay clod.

T – Tailor to the learners’ personal needs, abilities and interests

O– Organize learning experiences to maximize learner engagement and effective experimentation



Learning Activity 8

Activity Title – Clay Lanterns and Diffraction of Light

Stage 1 – Desired Results		
GOALS Constructing clay Lanterns Participate actively in art discussions illustrating the physical principles involving diffraction of light	Transfer	
	<i>Students will be able to ...</i>	
	Make clay lanterns illustrating the diffraction of light phenomenon and forming beautiful patterns	
	Meaning	
	UNDERSTANDINGS <i>Students will understand...</i> The cause behind diffraction of light	ESSENTIAL QUESTIONS How can the small holes ensure diffraction of light from a light source?
	Acquisition	
	<i>Students will know...</i> How to make clay lanterns	<i>Students will be skilled at...</i> Wheel throwing Creating beautiful clay lanterns of various designs illustrating the light diffraction and interference
Stage 2 – Evidence and Assessment		
Evaluation Criteria	Evidence for Assessment	
Constructing clay Lanterns Participate actively in art discussions illustrating the physical principles involving diffraction of light	PERFORMANCE TASK(S): Students will prepare clay through appropriate proportionate mixing of clay and water and make clay lanterns and other such clay household items using hand-modelling method	
	OTHER EVIDENCE: The learners are provided with a large clod of clay and are instructed make the base of the lantern using wheel throwing method The teacher designs an activity by giving individual work to explore different designs of clay lanterns. Then, an instruction sheet is provided to the learners to use tools intelligently to curve out the holes of clay lanterns to ensure interference of light through them. The learners are also provided with fabric and acrylic colours to design the lanterns according to their ability and showcase them within a given time. The learners are evaluated based on the above activity and some follow-up questions.	
Stage 3 – Learning Plan		

Key Learning Events and Instruction

Resources :

1. Clay clod
2. Fabric colours
3. Carving Tools
4. Automated Potter's Wheel

Activity :

W - The teacher recalls the concept of clay mixing and wheel-throwing method in pottery.

H – Hooking the learner's interest - The teacher facilitates the young students by calling upon the senior students to help them in create pot shapes using the wheel to retain the learners' interest and for hands-on practice.

E- Equip students with competencies to make clay lanterns with carved out geometrical shapes and colour them, following the suitable precautions.

R – Review and critically rethink designs and initiate peer discussion

E – Allow self-evaluation and brainstorming sessions among learners to make other utilitarian items out of remaining clay clod.

T – Tailor to the learners' personal needs, abilities and interests

O – Organize learning experiences to maximize learner engagement and effective experimentation



Evaluation of the Learning Activities

Any curriculum needs to be evaluated for ascertaining its effectiveness to understand to what extent the learning outcomes stated at the beginning of the module has been achieved. Curriculum evaluation through learning activities is essential for decision-making and further improvement. The chosen evaluation methods was decided upon discussion with vocational education experts.

The implementation of the learning activities create instructional experiences that make acquiring knowledge and skill more efficient, effective and appealing. The process broadly consists of determining the current perception of learner's understanding, defining the end goal of the instructional material and creating some 'intervention' to bring about entrepreneurship. This systematic approach provides a step-by-step process for analysing the learners' needs, the design and development of the material. The characteristics of the framed learning module in teaching-learning of pottery are listed as follows:

Characteristics of the Learning Module

- The learning module resources help learners acquire necessary competencies for personal and professional fulfillment, building potential entrepreneurship.
- This learning module reduces learning time and increases knowledge retention rates.
- This learning module effectively integrates information access into already existing education processes.
- This learning module is flexible that is useful for all type of learners.
- This learning module allows self-directed learners control their learning while the instructor facilitates the learner by providing a rich environment to ensure that the experiences of each learner self-reflect and feel motivated to problem-solving.

The following is an account of how the learning activities of learning module were evaluated and discussed. The learning module was implemented on the learning aspirants considered for the first part of the research.

General Inclusion Criteria for Implementation and Evaluation of Learning Module

- The learning aspirants have moderate Entrepreneurial Intention in pottery
- The learning aspirants have moderate to high perception towards a curriculum in pottery for entrepreneurship
- The learning aspirants have little or no exposure, i.e., no active involvement for crafting pottery products
- The learning aspirants do not have any formal or informal training in pottery
- The learning aspirants voluntarily consented to participate in the learning activities.

The researcher prepared meticulous field notes of the learning activities for documenting observations, researcher's feelings, attitudes about the learning process. Field notes composed of observations of the participants, their work motivation, and occurrences that existed in the natural settings. Field notes were used reflexively to document researcher's reactions, thoughts, ideas and feelings that emerged in the researcher's mind during the learning process transactions. Transcribed field notes were presented and reported separately for every module activity to allow the readers to understand the learning module's efficacy.

Table T4.6: Detailed Description of Evaluation of Learning Activities of Module

Learning Activity	Evaluatee Group	Evaluation Results
Learning Activity 1 : Clay Identification and Mixing	Learning aspirants in pottery as small as 11-13 years old who go to school regularly were exposed to identifying the correct soil for pottery crafting.	The first activity according to them and their teachers is the collection of the most suitable soil for clay modelling after proper identification. On being provided samples of three different types of soil, they could easily identify the most suitable one by describing the properties and consistency. Not only that, they were also able to express the variety of crops in agriculture that can be grown in clayey, loamy and sandy soil. They also logically reasoned how and why clay pots can be used for agricultural storage. Thus, they were able to achieve the learning outcomes specified at the beginning of the module.
Learning Activity 2 : Pottery Tools and Classification of Levers	This learning activity was administered on two groups – i) Learning aspirants of pottery community as small as 12-14 years old who go to school regularly were exposed to identifying the tools for pottery crafting. ii) Youth learning aspirants, of undergraduate level, belonging to poor families, having a moderate to high perception towards curriculum in pottery, approached for internship in one of the pottery study sites to learn pottery work.	Both the groups were first exposed to a set of indigenously used tools for pottery crafting. i) The first group using ‘cooperative learning’ technique, extended help to each other to describe the names, source of improvisation and their functions of the tools. Next, they were explained the concept of the classification of levers. They were given the task to classify the tools. They were evaluated on the basis of their responses given in ‘Basic Ceramic Tool Set’ sheet and ‘Lever Classification’ sheet. ii) The second group was provided a set of both indigenous and modern tools. The facilitator explained the functions of the indigenous tools and asked them to compare the structure and functions

		with the modern tools. The group tried different activities like cutting, carving, polishing with the modern tools and inferred the comparison.
Learning Activity 3: Clay Storageware and Principles of Calorimetry	This learning activity was administered on two novice groups – i) One group of boys of age range 15-17 having moderate entrepreneurial intention towards pottery, and, ii) Second group of their mothers who have huge responsibility towards the family, have a positive perception towards curriculum in pottery. Both the groups had the same instructor, a skilled artisan in pottery, who was a respondent of the study.	Understanding that they have never crafted clay cookware, they were subjected to a learning module on calorimetry and pottery cookware through a problem-solving experimental approach. Following the steps, i) the first group were able to construct clay bottles, clay curd pots and clay tea cups. Simultaneously, they illustrated the principle of calorimetry - the scientific reason why water and curd can be kept cool for longer in clay containers and how it contributes to green sustainability over plastic. Peer discussion, while colouring the pots, revealed the therapeutic uses and heating effect in clay on enquiry by the expert instructor, while, ii) The mothers, under the supervision of the expert, constructed clay flower pots and clay glasses. On enquiring about their feedback, the ladies shared about sustainability of clay. They declared that since pottery is eco-friendly and sustainable over plastic, the demand will increase over the years, which means that they have adopted the environment sustainability skills.
Learning Activity 4 : Clay Jewellery and Mensuration in Mathematics	This learning activity was administered on two groups – i) A group of learning aspirants who are housewives having moderate entrepreneurial intention and perception towards a	The learning groups and their instructors agreed to follow the learning module for making clay jewellery as entrepreneurial activity. i) For the first group, they were first asked about geometrical shapes and were taught how to prepare clay for

	curriculum in pottery, but are novice in the field. ii) A group of young girls who have just completed their graduation, belongs to poor families who strongly needs to support their families financially, have a moderate entrepreneurial intention towards pottery	jewellery in perfect consistency. They observed every detail on the first two days. Once they mastered this, they made miniature rectangles, circles, squares and many other motifs. Soon after this, they completed the process. ii) Observation, Experimentation and Peer discussions was used to supervise the activity. The girls were familiarized with 3D geometrical shapes and created pendants. Then, using their aesthetic skills, they coloured these pendants using fabric and acrylic colours, giving them the shape of jewellery sets. Not only were they able to craft it, but they have also started selling them on social media platforms, prepared product samples for display through designed websites, provided bills with every purchase, which shows evidence about the sharpening of their digital and communication skills.
Learning Activity 5 : Making Clay Models in Social Science	A group of middle school learners who had moderate entrepreneurial intention and showed high perception towards the curriculum in pottery, have quite a few aspects in social science which required learning through models. Thus, they were subjected to the activity.	An experienced artisan in pottery, helped the learners created models of Earth with separately carved-out continents. It was a team-learning activity, and the learners were assigned separate responsibilities according to their interests. Soon, the learners could construct the Earth model, and imbibe the concept of continents and seas of the world.
Learning Activity 6: Crafting Clay Dolls and Chemical Bonding	i) Children of pottery community of ages 10-12 love to observe the pottery crafting and meddle with clay when their parents are involved. Their desirability towards hands-on pottery was reportedly moderate. The	i) A group of the children were provided with a large clod of clay and were instructed to roll out balls of different sizes. Then, balls rolled out were attached one after the other to give the form of dolls of bird, animal and human figures. They got equipped with vocational pottery skills within a week

	researcher, observing their desire, took permission from their parents to subject them to clay learning activity. ii) 10 Adolescents of non-pottery communities, urban dwellers, who have ‘Chemical Bonding’ in their school Chemistry curriculum.	and their smiles showed a sense of satisfaction and confidence. ii) The group was provided with a clod of artificial air-dry clay, and asked to carve small clay balls and label them as elements H, O, C, S. Then using wires, they connected the elements and demonstrated chemical bonds as instructed by the expert.
Learning Activity 7 : Clay Diyas for Developing Entrepreneurial Skills	Girls are equally as ahead as boys in pottery crafting and trading at a large scale. A team of 3 girls and 2 boys, of 14-16 years, who had a passion towards artistic painting had the readiness to adopt clay jewellery designing by providing shape to 3D geometrical figures. They had a moderate entrepreneurial intention.	They were subjected to a learning module of hand-sculpting clay ‘dijas’. In course of time, they have not only crafted clay ‘dijas’ with beautiful designs using fabric colours. Also, they have prepared clay incense holders. A brainstorming session of ‘Strategies of attracting customers’ was conducted. Their evaluation consisted of participation in local exhibitions. They participated eagerly and got stocked out by a huge crowd of customers, thus acquiring entrepreneurial skills. It was noted that the group distributed pre-exhibition pamphlets among the commons for promotion, allowed discounts and handed over business cards in the exhibition, which provides evidence of sharpened entrepreneurial skills.
Learning Activity 8 : Clay Lanterns and Diffraction of Light	A group of male learning aspirants in pottery, of undergraduate level, belonging to low-income families, approached for internship to lead a stable livelihood in pottery. The instructor was an expert artisan in pottery, crafting and	They did not have any knowledge of sculpting and crafting in pottery, but they had a strong entrepreneurial intention. They showed a high perception towards a curriculum in pottery. The researcher requested an artisan to facilitate this group to learn crafting clay lanterns. Under the supervision of the researcher and the

	handling an entrepreneurship firm in pottery for many years.	artisan, the group took interest to observe and learn, using instruction sheet and verbal instructions by the expert. They could do wheel throwing and sculpting using traditional instruments and also some modern equipment within two weeks. Not only were they able to craft it, at the same time, but they could also easily illustrate the principles of diffraction and interference of light through these clay lanterns to create beautiful designs of floors and walls during night time.
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Key Implications of Learning through the Module

The learning module in pottery promoted a range of skills integral to learning aspirants' success in the global economy. This module, an assemblage of learning activities at the beginner's level for pottery learning aspirants, has been constituted based on the revealed needs of the field functionaries, overcoming the existing challenges for competency development. While the learning activities were implemented and being evaluated among the learner groups, the researcher carefully observed every step, move, action, verbal interaction, gestures and took extensive field notes. Analyzing the detailed field notes, the researcher listed implications associated with learning through this module, which is as follows :

- 1) The activities improved the learning effectiveness to ensure that learners can learn anywhere in groups or individually, with minimal resources.
- 2) The activities have been systematically devised to help learners proceed at their own pace, boost confidence, and grow holistically.

- 3) The activities helped improve learner competencies, achievement level, corresponding skills and entrepreneurial self-efficacy.
- 4) Knowing the competencies that students have not been able to achieve, based on the criteria set out in the module, can help participants improve their learning later.
- 5) The activities trigger thinking abilities among the learners and instil the courage to bring out innovations, attracting people to incline more towards pottery.
- 6) The learning activities have been implemented on various learner groups, regardless of age and socio-economic background. Thus, the learning module can be recommended for universal learning, to be used for the skill development of any learning aspirant in pottery.
- 7) The learning activities requires the passive participation of an instructor who is an expert in the field and monitors the learners' progress, instruct and facilitate them whenever and whatever required.
- 8) The desirability and self-efficacy beliefs among the learning aspirants increased after the administration of the learning activities. Some opined that they have developed greater intention towards entrepreneurship and are willing to set up a pottery enterprise soon. They demonstrated the confidence of earning profit and lead sustenance.

CHAPTER V

FINDINGS AND

DISCUSSION

CHAPTER V

FINDINGS AND DISCUSSION

“No ray of sunshine is ever lost, but the green which it awakens into existence needs time to sprout, and it is not always granted for the sower to see the harvest. All work, that is worth anything, is done in faith.”

-Albert Schweitzer

5.0 Introduction

The Research data becomes meaningful in the process of being analyzed, interpreted and arriving at conclusion. In the preceding chapter ‘Data Analysis and Interpretation’, data collected has been analyzed with reasonable interpretation, wherever necessary. In this chapter, the investigator has made a humble effort to report the findings objectively and discuss the highlighting points in the findings by interweaving it with the previous researches. An attempt has been done to discuss the findings in the light of the related literature reviewed corresponding to the present study, as it helps in dispersing the entire crux of the study to the field of education. The educational implications of the findings, to help the stakeholders, i.e., curriculum planners, teachers, parents and learners have been provided. A list of recommendations emanating from the present study and suggestions for further research is also given.

5.1 Summary

The present research work is a comprehensive study, aiming to design a curriculum model and learning module in pottery for entrepreneurship. The model and module were developed to enhance the conceptualization and entrepreneurial skills of learning aspirants willing to take up pottery for primary or alternative careers.

The study focuses on enhancing the functional skills and competencies of learning aspirants through the developed curriculum, framed with the help of analysis of data collected from

various tools developed by the researcher. The tools comprise of (1) Learning Aspirant Entrepreneurial Intention and Curriculum Need Perception Scale, to determine the extent of entrepreneurial intention and curriculum need perception from learning aspirants (2) Craft sustenance and Skill-based questionnaire for Skilled Artisans in Pottery, (3) Entrepreneurship and Skill-based Questionnaire for Trade Entrepreneurs in Pottery to study the views of expert field functionaries to understand skills, competencies, challenges and functional needs of pottery in the present scenario. The tools of the study were validated by the professionals i.e. educators specialized in vocational education and educational research. The valuable suggestions and recommendations of the experts were incorporated until the successful completion of the study. The results of the quantitative part of the study revealed a necessity for an entrepreneurial pottery curriculum among the learning aspirants. Nevertheless, a strong positive relationship exists between entrepreneurial intention and curriculum need perception in pottery. The need of hands-on training is also noticeable for using various resources and experimental participation, workshops and seasonal exhibitions. Further, the results depict a need for enhancing the entrepreneurial abilities of learning aspirants as they are prospective entrepreneurs to accommodate themselves in the pottery enterprise setup. The study attempted to address the core learning outcomes, teaching-learning strategies and evaluation methods to deliver instructional planning, practice, understanding and dealing core needs of learning aspirants by presenting a curriculum model of 15 units. Nevertheless, the study also tries to enhance the above-mentioned functional abilities by implementing a learning module comprising eight learning activities. The module was designed, so that educators can easily apply it in pottery enterprise set-ups. The results were analysed using SPSS version 21 (quantitative), thematic and inductive

observational (qualitative) analysis, interpreted and discussed in detail. The educational implications of the study has been mentioned briefly. The study concluded with the suggestions and recommendations for further studies.

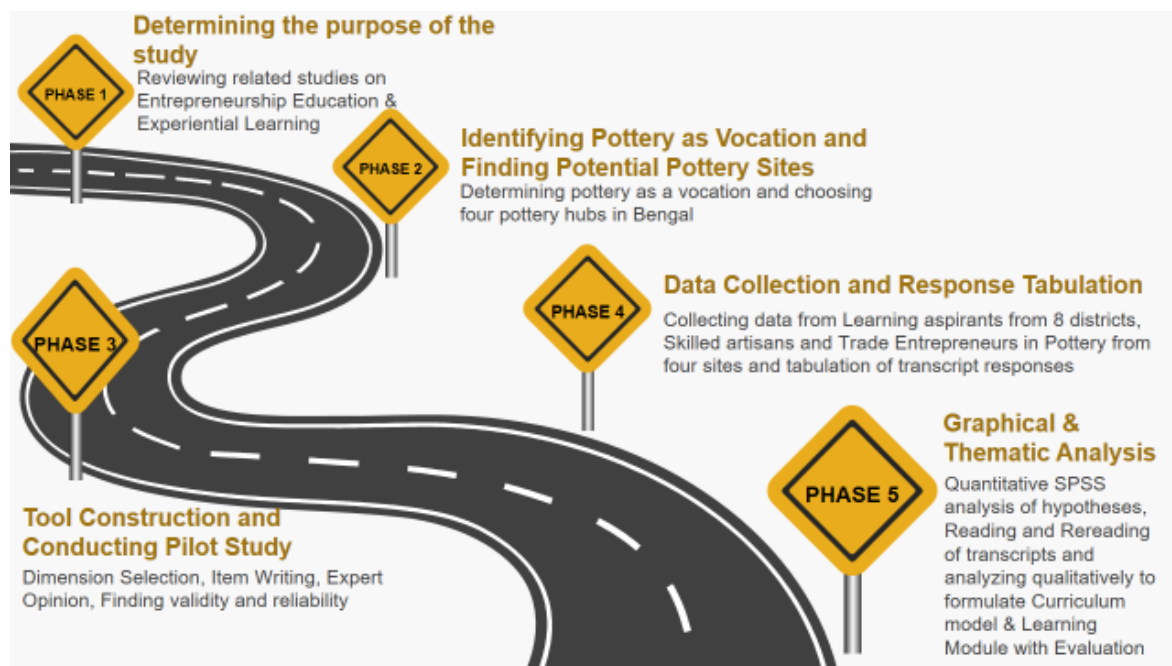


Fig F5.1: Summarization of the Study

5.2 Major Findings

The following represents the findings of the present study :

- ✓ Among learning aspirants in pottery, 17% of them are reportedly found to have high entrepreneurial intention. In comparison, 61% and 22% of the learning aspirants are found to have moderate and low entrepreneurial intention in pottery, respectively. Hence, H_1 has been accepted. The researcher interprets that the social desirability, attitude towards entrepreneurship, individual entrepreneurial feasibility and propensity towards pottery is reportedly moderate among 61% of respondents from a total of 163 respondents, which contributes to a significant percentage of learning

aspirants, who are willing to take up pottery for their primary or alternative career.

The results were presented using a table (Table T4.1) and pie-chart G1.

- ✓ Out of the 163 learning aspirants, who were respondents for the scale, 22.7% and 50.9% of the learning aspirants in pottery have a predictively high and moderate perception towards a curriculum in pottery. Only 26.4% of them show a low curriculum perception in pottery, presented using Table T4.2 and pie-chart G2. So, Hypothesis 2 has been accepted. The researcher interpreted that the learning aspirants needed a pottery curriculum.
- ✓ A positive linear relationship between entrepreneurial intention and curriculum need perception in pottery. From the scores obtained in the two parts of the scale administered to the learning aspirants, namely, the entrepreneurial intention and curriculum need perception in pottery, the correlation coefficient calculated using Spearman's rho is 0.867, which is significant at 0.01 level, calculated using SPSS 21, presented in table T4.3. The researcher interpreted that there exists a significant relationship between entrepreneurial intention and curriculum need perception in pottery. Therefore, Hypothesis 3 is accepted.
- ✓ Item-wise graphical analysis have been presented based on the responses obtained from the questionnaire respondents – skilled artisans and trade entrepreneurs in pottery who are presently functional in the pottery clusters. 84.09% of skilled artisans reported that they have began learning the craft by observation from other artisans using a hands-on participatory approach. The rest 16% reports inquiry-cum-experimentation method as a means of innovative learning. Results from Graph G4 clearly indicate that learning through observation is the best means of learning how

to craft pottery. Artisans clearly mentioned in their responses that hands-on experience, inquiry-based experimentation with new products, brainstorming for innovativeness is the way how beginners can learn pottery.

- ✓ From the responses, most trade entrepreneurs (51%) had an entrepreneurial mindset to set up the enterprise, while 23% belonged to a familial trend of pottery trading, however, 18% also moved ahead with pottery because of their passion towards the craft, and 8% took it as an alternative career option. So, every learning aspirant must have a passion towards the craft and an entrepreneurial mindset should be developed in them through curricular activities, which can be inculcated through knowing the history and values associated with pottery.
- ✓ Based on the responses for the source of raising capital for enterprise, most trade entrepreneurs (62%) take loans from the bank or local cooperatives, only 28% utilize their own fund for investment while 10% of them get help from Government or Non-Government Artisan schemes. Most of them lack adequate information about such schemes and take loans at a higher interest rate. Therefore, information and Financial Literacy should be a part of the curriculum, so that the learners learn about the correct information on the economic initiatives on craftsmen and micro-entrepreneurs and make use of them in their enterprise.
- ✓ Artisans (75%) and trade entrepreneurs (13%) in pottery, sell their products mainly to both wholesalers and direct customers, however, some corporate dealers directly interact with the field functionaries for buying their products. They build rapport with the wholesalers and direct customers, and fix the prices depending on the product

type, quality and innovativeness. Maintaining a cordial relationship with the buyers is the key of entrepreneurship.

- ✓ Skilled artisans (91%) were very particular about quality checking during the process of crafting of products. If no quality check is done, it will lead to defective products. So, quality check should be done at every stage- checking the texture of clay after filtering, replacing old tools with new ones at intervals, after drying, after firing, before packing. This, therefore must form an important part of curriculum.
- ✓ As the skilled artisans (73%) and trade entrepreneurs (77%) in pottery work in the field and face many challenges. They feel that they still lack training in marketing and packaging, production machinery, clay alternatives, and technological literacy. So, these aspects must be incorporated into the curriculum.

The figure indicates that following pottery products are in high demand and popular among buyers, indicated from the responses of the field functionaries. As these have been designated as the most popular products in demand among customers, so it was deemed necessary to include storageware, jewellery, toys in the learning module.



Fig F5.2: High-on-Demand Pottery products among customers

- ✓ In setting up any enterprise, the field functionaries face challenges and managing such obstacles are the means to achieve success in the pathway. From the respondents, it was found that both the skilled artisans and trade entrepreneurs in pottery face unprecedented challenges, especially in the monsoon season, which accounts for 14% and 15.38% for the former and latter, respectively. They also talk about the lack of training using advanced machinery, to reduce labour intensiveness of pottery and also slows down the production efficiency, outdated selling methods in their house verandah or a small portion of their own house, therefore, being away, from the limelight, contributing to 49% among skilled artisans and 43.6 % among the trade entrepreneurs in pottery. About 20.45% of skilled artisans and 25.64% of trade entrepreneurs in pottery specify strong competition from the organized sectors. The remaining 14% of the skilled artisans and 15% of the trade entrepreneurs face lack of working capital, inadequate investment/credit facilities, and interference of middle man in selling pottery products.
- ✓ According to skilled artisans and trade entrepreneurs in pottery, the kind of competitions faced in descending order are advertising competition, production competition, innovation competition and cost-fixing competition. Besides crafting, they handle these competitions and look forward to resolve such issues. These also are obstacles and the learning aspirants in pottery should learn to handle these risks/threats and find solutions.
- ✓ According to skilled artisans and trade entrepreneurs in pottery, marketing & promotion, innovative packaging methods, advanced machinery to accelerate production can be improved through technology. That can save time and labour.

- ✓ According to the respondents, it is necessary to understand that the craft will survive if it is more disseminated among general public, so appropriate marketing competency should be acquired. Also, new techniques of centering, clay-modelling, drying, glazing, ceramic polishing should be adopted (methodological competency), working with computers and managing the pottery firms are designated as the necessary competency requirements.

All the graphical findings, indicated in Figure F4.2 highlight the significant aspects to be included in the curriculum for pottery entrepreneurship.

- ✓ Thematic analysis has been followed according to the six stages proposed by Braun and Clarke (2006). The themes drawn from the data was inductive, meaning that these were drawn from the data itself and directly reflected what participants shared.

Below is a depiction of the generated themes.

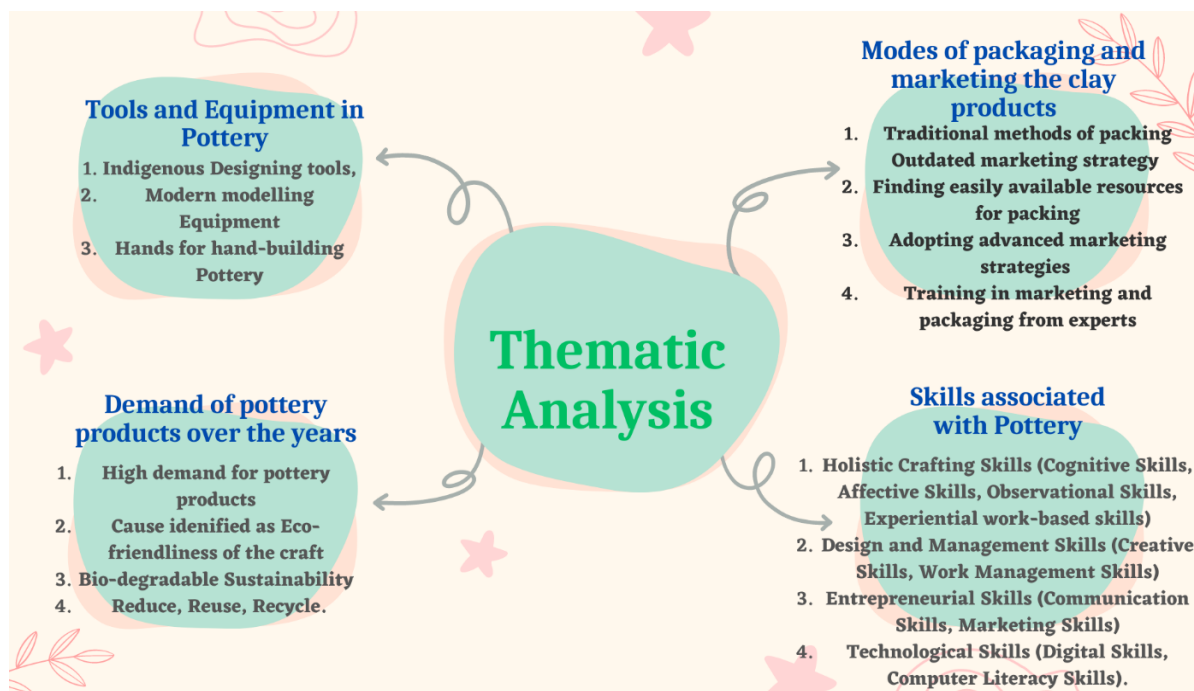


Fig F5.3: Thematic Analysis

- ✓ In view of the skills, challenges and plausible opportunities in the field of pottery reported by the skilled artisans and the trade entrepreneurs, the investigator conducted a Strengths, Weaknesses, Opportunities, Challenges (SWOC) analysis to list down the observationally interpreted strengths, weaknesses, opportunities and challenges in pottery. Following are the strengths, weaknesses, opportunities and challenges found in the present study:

Table T5.1: Strengths, Weaknesses, Opportunities, Challenges (SWOC)
Analysis of Pottery Entrepreneurship

Strengths	Weakness
✓ Commitment among craftsmen and tradesmen ✓ Powerful traditional craft practiced across length and breadth of the nation ✓ Eco-friendliness and Sustainability of the products ✓ Demand-based Innovativeness in Creativity of products catering to customer needs ✓ Customers inclining towards Clay over Plastic for environmental sustenance ✓ Use of multiple skill sets for micro-entrepreneurship creating self-employability opportunities	✓ Labour intensiveness due to prolonged crafting procedure ✓ Lack of Financial Literacy and Digital Skills among the field functionaries in rural pottery clusters ✓ No exposure to Modern Technology/Lack of confidence to change technology ✓ Poor media coverage of the craft
Opportunities	Challenges
✓ Emerging Demand of Pottery Products among the general public ✓ Government exhibitions for showcasing of products ✓ Evolving 'Vocal For Local' Opportunities for setting up micro-enterprise	✓ Ever-changing technology ✓ Increasing price-wars from clay alternatives ✓ Newer marketing skills in other sectors ✓ Change in International Trade Standards

✓ Ample opportunities for the aspiring learning youth in pottery ✓ Diversified product range entailing different industries and craft tourism sector	✓ Research and Development of Craft in other countries
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- ✓ The pottery curriculum model has been organized into 15 units.

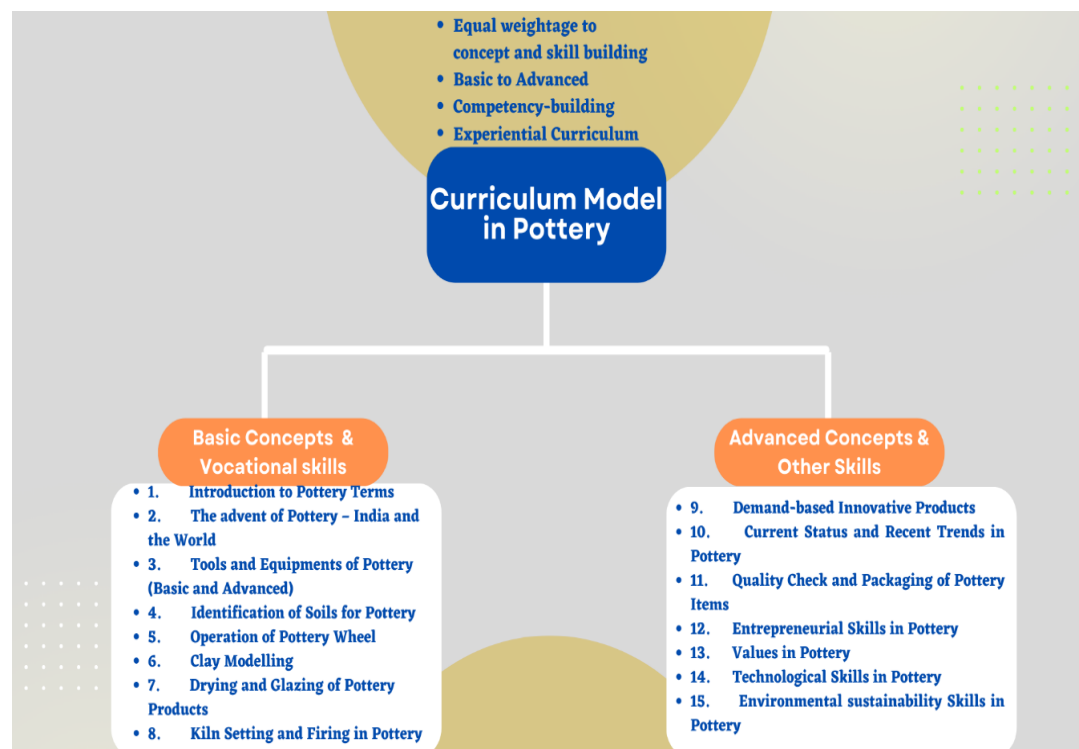


Fig F5.4: Curriculum Model in a Nutshell

- ✓ Based on aspects of the curriculum model, the investigator also delivered a learning module as an outcome of the study, consisting of 8 learning activities in pottery entrepreneurship. The eight learning activities have been systematically organized following Backward Design Model, consisting of 3 stages- Identify Desired Results, Determine Acceptable Evidence, Plan Learning Experiences and Instruction.
- ✓ The researcher designed the learning module in consultation with the field experts (skilled artisans and trade entrepreneurs). The module is presented as a complete unit,

consisting of a series of learning activities organized to help learners achieve the appropriate learning objectives completely and systematically. The following is the inventory of learning activities in learning module :

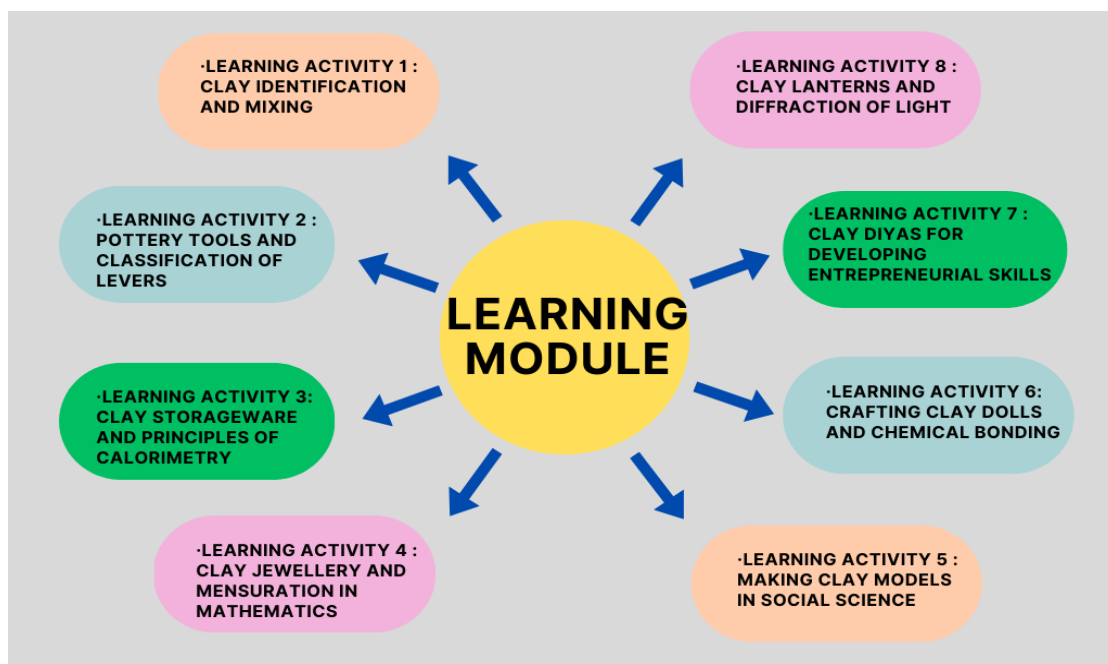


Fig F5.5: Learning Module at a Glance

- ✓ Further, the learning activities were evaluated among learner groups, irrespective of age to realize the objectives stated at the beginning of every learning activity. The learning module has been subjected to evaluation, to realize the curriculum model efficacy. It was implied from the observational-analysis based evaluation that the curriculum model serves as a universal learning system- suiting every learner's needs, aspiring for entrepreneurship in pottery.

5.3 Discussion

In the discussion, certain key observations that were raised out of the findings, interweaved with the studies reviewed with respect to Curriculum Designing and Evaluation for Entrepreneurship. The key points that emerged in the findings have been discussed.

The present research study aimed developing a competency-developing curriculum model in pottery in the context of the flagship programme for self-reliance- *Atmanirbhar Bharat*. Earlier studies on “Demand-Driven Approaches in VET: A Case Study of Rural Population in South India” (2016) have focused on competency-based curriculum-instruction-assessment model of local need-based vocational subject aligned according to learner demands.

The theoretical framework of the current study is based on Theory of Planned Behaviour (Ajzen, 1991), Shapero's Entrepreneurial Event (Shapero and Shokol, 1982) to arrive at a blended model called Entrepreneurial intention model, which takes into account Hungerford's Hybrid Curriculum Designing Model (Majumdar, 2009) which is an amalgamation of Curriculum Infusion and Curriculum Diffusion Model.

The aim of Entrepreneurial Education in Pottery is to promote Entrepreneurial Intention among the learning aspirants willing to set up an enterprise in pottery. Previous studies have potential implications for Entrepreneurship Education, particularly in the design and implementation of outcome-based learning (Gough, 2018; Linan and Chen, 2009; Robinson et.al., 2001) and the effect of entrepreneurship education in enterprise development (Pradhan, 2019). The present study keeps the existing theories in the aforementioned studies and proves the hypothesis in the corresponding context.

Understanding By Design, a text authored by Wiggins and McTighe, offers a framework for designing courses and content units called “Backward Design.” This design frame along with Curriculum Diffusion Model (Hungerford, 1989) for Developing Employability Skills (Majumdar, 2009) serves as a framework for the designing the curriculum model in pottery.

The background of the study involves a super-reflexive approach and reviews of related literature have been well explored by the investigator and the research gap has been well pointed out.

Pottery, being an age-old craft, practiced along the length and breadth of the country, supports a large chunk of the rural population in India. In such a scenario, when the recently proposed National Education Policy, 2020 (MHRD India) feels the need for craft-centered Bharat-centric education, the investigator felt that pottery can be considered the vocation for designing a curriculum model and subsequent learning module. However, no studies have attempted to find out whether the crafters and their filial generations perceive the need for a pottery curriculum to continue the craft by progressing through entrepreneurship, adopting the basic and advanced skills associated with the historic craft.

Keeping in view, the few studies on evaluation of already existing work-based learning models in vocational education (Purohit, 2014; Verma, 2008; Chand, 1996; Lali, 2002) and under-researched vocational pedagogy (Lucas, 2015), the researcher strongly felt the need to design a curriculum model and learning module in pottery, for all learning aspirants, who have an entrepreneurial intention in pottery and possess a perception towards the need for a curriculum and predominantly look for adopting pottery as a primary or secondary means of self-employment. Thus, the study was built upon the objectives of assessing the entrepreneurial intention among learning aspirants in pottery, assessing the perception of need for a curriculum in pottery among learning aspirants, to know the relationship between entrepreneurial intention and curriculum need perception in pottery, to understand the skills, competencies and challenges in pottery from field functionaries and finally to design a curriculum model and learning module in pottery for entrepreneurship.

In lieu of the objectives framed for the study, the investigator reviewed the methodologies of quite a lot of studies in the area of entrepreneurship development and its evaluation and pottery (Pramanik, 2021; Tripathy and Bardhan, 2019; Saha, 2019; Sahoo, 2016; Kasemi, 2014; Hazra and Barman, 2017) as well. The investigator extensively studied the tools adopted in the mentioned studies and a questionnaire for understanding the skills, challenges and opportunities in pottery and field diary to note down the sequential process was deemed to be most appropriate for the study. Before the pilot study, validity of the tool was ensured with the opinion of eminent experts in the field of vocational education, research and entrepreneurship. In this study, it was important to understand the perspectives of those actively involved in pottery occupational craft, and present a holistic interpretation of all occurrences, to construct a plausible explanation about skills, competencies, needs, challenges and opportunities that impinge on pottery presently. Triangulation with the use of multiple sources of information was used in order to validate and cross-check findings.

O₁ : To assess the entrepreneurial intention among learning aspirants in pottery

The **first** objective was to assess the entrepreneurial intention among learning aspirants in pottery. For this purpose, entrepreneurial intention towards pottery scale (LAEICNP) was self-constructed, but solely with aspects of pottery. Previous studies have prepared Entrepreneurial Attitude Orientation Scale (EAO) for taking an attitude approach for predicting entrepreneurship (Robinson et.al., 1991); constructed an entrepreneurial intention questionnaire (EIQ) to measure relevant cognitive constructs and the role of cultural dimensions in entrepreneurship (Linan and Chen, 2009). Out of the respondent learning aspirants, 17% and 61% show high and moderate entrepreneurial intention respectively, while 22% show low entrepreneurial intention, demonstrated using pie-chart. It has been

interpreted that the social desirability, attitude towards entrepreneurship, individual entrepreneurial feasibility and propensity towards pottery is moderate to high among the respondents who are willingly looking forward to take up pottery for their primary or alternative career. Most of the sampled learning aspirants possess a strong desire and favourable attitude towards pottery entrepreneurship, and also, they believe in their self-efficacy which inclines them towards the same.

O₂ : To assess the perception of need for a curriculum in pottery among learning aspirants

The **second** objective was to assess the perception of need for a curriculum in pottery among learning aspirants. The data from respondents indicated that 26% and 51% of the learning aspirants in pottery have a predictively high and moderate perception towards a curriculum in pottery respectively. Only 23% of them show a low curriculum perception in pottery. It was interpreted from researcher's perspective that learning aspirants have realization of the need for a curriculum in pottery. The respondents agree that following a curriculum can provide an occupationally-oriented process-based approach to ensure facilitation of understanding the key skills, competencies, opportunities in pottery and learn engagement and participatory strategies for entrepreneurship and generate income.

O₃ : To know the relationship between entrepreneurial intention and curriculum need perception in pottery

The **third** objective combines the previous two objectives - to know the relationship between entrepreneurial intention and curriculum need perception in pottery. The correlation coefficient, calculated using Spearman's rho is 0.867, which is significant at 0.01 level, indicates a strong correlation between entrepreneurial intention and curriculum perception in pottery. It has been interpreted that entrepreneurial intention indicating entrepreneurial

attitude, perceived desirability and feasibility towards pottery for entrepreneurship needs to be developed among learning aspirants before exposing him/her to a curriculum in pottery for entrepreneurship. This helps learners realize the objectives of the curriculum and concluding with fruitful learning outcomes. These findings corroborate with results of previous studies -indicating a positive relationship with recurring entrepreneurial action, recurring entrepreneurial intention behaviours and recurring entrepreneurial intention attitudes (Carruthers, Venter and Botha ,2019); positive relationship between entrepreneurship education and entrepreneurial intention among students (Degue, 2018); a positive relationship between entrepreneurial attitudes and one's entrepreneurial intention (Gough, 2018); educational support for entrepreneurship enhances students' entrepreneurial intention (Kadir, Salim and Kamarudin, 2012) and enhancement of entrepreneurial activity by increasing entrepreneurial self-efficacy (Segal, Borgia and Schoenfeld, 2005).

O4 : To understand the skills, competencies and challenges in pottery from field functionaries

The **fourth** objective is to understand the skills, competencies and challenges in pottery from field functionaries, the actively working skilled artisans and trade entrepreneurs in the existing field of pottery. During the research, the investigator went to pottery hubs of Bengal, to explore the labour-intensive activities of the skilled artisans and trade entrepreneurs and enquire about the skills, competencies, needs, opportunities and challenges of clay pottery in today's world dominated with technology. For this objective, the researcher used questionnaires consisting of both close-ended and open-ended questions. The responses obtained from the field functionaries have been read, re-read, filtered, graphically and thematically analyzed. In India, pottery was studied for researchers to investigate its roots

(Sikdar and Chaudhuri, 2015; Gupta, 1988). Specifically in Bengal, which is the hub of crafting pottery, it has been studied for understanding the socio-economic problems of the crafters (Pramanik, 2021; Sahoo, 2016; Hazra and Barman, 2017), generally by employing case-study method and in some cases, based on the researcher's interpretation, the possible measures of improving on the economy of the crafters have been suggested (Tripathy and Bardhan, 2019; Saha, 2019; Ghosh, 2014), which align to some extent with findings of the present study. The skills and competencies that have emerged from the graphical and thematic analysis facilitate growth and increase in efficiency and viability to the emergent market changes. Similarly, understanding the needs, challenges and the upcoming possibilities help the entrepreneurs improve and reach out to qualified prospects and reach the aim of customer-centrism.

O5 : To design a curriculum model in pottery for entrepreneurship

The **fifth** objective can be designated as the primary objective of the study - to design a curriculum model in pottery for entrepreneurship. Skill and knowledge are the spearheads for any nation's economic growth and development (IAMR, 2010; Chenoy, 2013). The curriculum model signifies the importance of vocational and entrepreneurial skills in empowering the learning aspirants who basically aim starting their own enterprise in pottery and create further employment opportunities, contributing to sustainable livelihood and revival of the craft for many more years. The model follows the principle of flexibility, responding to the local needs of the learning aspirants, as evident from the analysis. The curriculum is focused on learning outcomes and core competencies required for pottery occupation, but allows greater flexibility in terms of selection of content, teaching-learning processes and evaluation methods. The fundamentals of vocational skill training have been

addressed, considering the perceptions of the actively engaged field functionaries of the craft. The curriculum model has been devised to bring about specific learning and equip the intended learners with skill-based competencies. Even if the artisans acquire vocational skills, they lack in managerial and entrepreneurial skills (Mitra, 2005). Hence, distinct units have been set up in the curriculum model to develop managerial, entrepreneurial, technological and sustainability skills. The approach of curriculum designing is participatory and need-based. The curriculum designing process for pottery entrepreneurship ensured that the curriculum structure- sequence and spiralling was aligned in a queue (Reid, 2003). The curriculum model is carved to imbibe in learning aspirants, cutting-edge knowledge about strategies and tactics in crafting masterpieces, managing the enterprise, and developing entrepreneurial, interpersonal, technological skills which help build confidence and create a sense of brand identity for pottery, therefore, aiding in customer retention. Previous studies on development of modules are mostly on e-modules or technology-based modules (Rekha, 2007; Deshpande, 2020; Mishra, 2020; Lenin, 2021).

O₆ : To prepare learning module in pottery for entrepreneurship

The **sixth** objective is an extension of the fifth objective - to prepare learning module in pottery for entrepreneurship. A learning module for competency development in pottery has been built to create a skill-rich craft society in pottery. Through the learning module, every learning aspirant is empowered to create, share, receive and utilize information for their progress. A well-designed and validated learning module is found to provide access to meaningful content of high quality and serve as an effective virtual facilitator. Hence, learning module design, development and approach is framed depending upon the nature of the learning aspirants and the quality and complexity the learner wishes to create. Models

involve analyzing the learners' needs, developing a delivery system and content, implementing, evaluating and further refining. In designing and developing this learning module, the investigator adopted the Backward Design Model based on the requirements. Thus, each learning activity within the module has been organized into three sequential stages. Curriculum efficacy can be realized only through effective curriculum evaluation. Thus, the learning module, with eight learning activities, developed by the researcher in consultation with the field experts, was implemented on various learning aspirants, and the evaluation results were described. It was ensured that the learning aspirants with moderate entrepreneurial intention and moderate to high perception towards the need for a curriculum in pottery, having little or no active involvement in hands-on pottery were exposed for implementing the learning module. It was found that the evaluatees, irrespective of any age group, have developed skillsets essential for setting pottery entrepreneurship into action.

5.4 Limitations

1. Only those respondents (learning aspirants and field functionaries) were included in this study who showed interest in educational research and agreed to cooperate with the present researcher in administering the tools for data collection and learning module evaluation.
2. Only four pottery sites (rural areas) in Bengal were prioritised to be included in the sample which are well-known for their exquisite and intricate pottery works, since times immemorial, as per the knowledge of the present researcher.
3. The data collection was delayed, and the Covid situation called for the data collection to be restricted to only specific rural areas of Bengal.

4. During the administration of questionnaires, some respondents hesitated to write down their responses due to poor handwriting, illiteracy, or lack of confidence in writing, and requested the researcher to write down their responses as they speak. The researcher considered this and inked their responses.
5. The curriculum model has been framed with the themes emerging on the basis of the responses by the field functionaries, keeping the faith that they have not hidden any truth and provided accurate responses as required.
6. Parents of the school-level learning aspirants did not consent to take their child's photograph, hence those could not be included in the study.

5.5 Educational Implications

A research study is complete only when the investigator suggests possible implications to improve the existing system. Every educational research is intended to guide all the stakeholders. The present study was intended to come out with a curriculum model and learning module in pottery based on need analysis and empirical verification. The implications of the present study are :

1. Education is all about reframing the curriculum to allow the learners to progress holistically, encompassing cognitive, affective and psychomotor domains, along with vocational craft, to open the world of work for the learners. The curriculum model represents the key competencies, content, skills, diverse teaching-learning strategies and modes of evaluation in adopting pottery for entrepreneurship.
2. Entrepreneurial intention can be developed among learning aspirants through the curriculum in pottery for entrepreneurship to realise the curriculum objectives.

3. Curriculum Designing is a process of thinking through how one wants to organize what learners want to learn. The curriculum model follows the principle of Sequence-Simple-to-complex learning.
4. The learning module revolving around interdisciplinary perspective, follows the principle of Integration- integration of concept with skills which will make learning aspirants skilled towards pottery and generate sustainable livelihood-building entrepreneurship.
5. The learning module arising from the curriculum model, has been designed with learning outcomes, key content, pedagogical strategies and evaluation methods. This strikes a balance so that learners can acquire knowledge and skills in ways that advance them towards achieving their personal, social and intellectual goals.
6. The learning activities in the learning module, being integrated with craft, are regarded as sustainable, so learners can be continuously engaged, bridging the community gap to revive the age-old traditional craft indigeneity.

5.6 Conclusion

Pottery is an age-old tradition in India, mostly focused in rural areas. This study attempted an analysis of the existing status of pottery from committed functionaries at pottery sites to arrive at a competency-based curriculum for learning aspirants who have entrepreneurial intention and perception towards the need for a curriculum in pottery. Pottery making rests on specific raw material resources, tools, manufacturing techniques, entrepreneurial skills, verbal and non-verbal knowledge and unique ways of coordination and management. The researcher's interaction with the field functionaries reveals that the entrepreneurial environment is customer-centric; therefore, establishing and maintaining rapport with the

customers ensures the success of the pottery enterprise, overcoming all challenges. The challenges as evident from this study include lack of working capital, stereotyped machinery, strong competition from the organized sector, outdated marketing facilities, management problems and lack of research and development. Pottery entrepreneurship also involves retention of customers, attracting new customers, innovation to sustain pottery for many more years and develop skills through the curriculum model and learning module among learning aspirants. Education helps develop hard skills (skills of crafting, tools and machinery, technological and digital skills) and soft skills (people-oriented skills such as interpersonal skills, sustainability skills). In the modern world, both soft as well as hard skills, are necessary for enhancing productivity. Due to the continual globalization, increasing competition, and complexity in entrepreneurship, aspiring youth today face immense challenges in the evolving marketplace. Entrepreneurship-seeking people must build skills in terms of productivity and profitability to gain a competitive advantage in the industry, adding stability to the overall process.

5.7 Recommendations:

The researcher has included recommendations for academic community (policy makers, school administrators, teachers, learners and parents) and research community as follows:

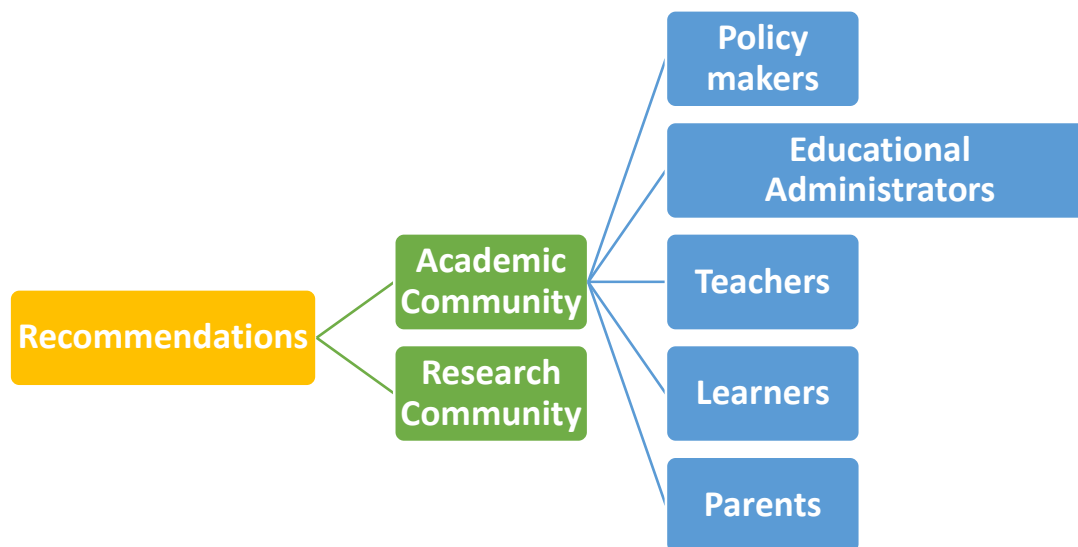


Fig F5.6: Categorical Division of Recommendations

A. Academic Community

5.7.1 Recommendations to policymakers:

Policymakers play an essential role in determining the nature and form of education. They make educational policies, plans and programmes according to the educational needs of society so that policy can fulfil all these educational needs. Therefore, researcher has included those recommendations in this category which can undoubtedly contribute to a good policy.

1. As per the NEP 2020, vocationalisation may be implemented in true spirit by creating professional order of teachers with adequate monitoring.
2. The need to prepare the mindset towards vocationalisation of stakeholders by creating awareness and providing support to motivate youth to work for nation-building and making them self-reliant should be realized.

3. Special focus must be sustained on creating awareness and importance of vocational/craft-based education, integrating technology and research to create production units and entrepreneurs.
4. Policy decisions to prioritise students for admission in courses, merging academic and vocational streams, should be taken up systematically.
5. Various schemes and support should promote the required skills to influence vocations indigenous to India and create a self-supporting youth order.

5.7.2 Recommendations to School Administrators:

A good policy has no existence without its effective implementation. School Administrators or Head of Institution is a key player of whole educational process. They play a very essential, relevant, and significant role in implementing the educational policies, plans and programmes. Here, researcher has described such type of recommendations.

1. Vocational skills must be learned as a means either for intellectual work or for economic self-sufficiency. It must serve both a means and an end. The product of the craft or vocation must be economically paying. Efforts must be made to see that the financial value of vocational work generates income for society.
2. Most of the teachers are not trained in Craft-centric Vocational skills. Hence, the learning experiences are neither sufficient to gain expertise nor start income generation activity to be self-sufficient. Moreover, the experiences are not helping to market the products and generate income to meet some of the production expenses. Teachers need to be trained in vocational skills, which educational administrators should take care of.

3. Investment in infrastructure, equipment, tools related to the Vocational Skill Courses is limited. Hence, these activities to prepare the children for self-sufficient living should be encouraged.

4. Linking the craft with the other subjects has not been achieved due to the lack of proper manuals or modules. So, the crafts or Vocational training chosen must be learnt systematically and scientifically to achieve efficiency and practical results.

5. There are stigmas in society that the children undergoing vocational education will not go for higher education. Efforts are needed from administrators to remove stigmas in society.

5.7.3 Recommendations to Teachers:

Teachers is the fundamental key pillar of educational process and in the proper development of child. Here, the researcher has represented some crucial recommendations for teachers, which is the output of rigorous analysis of various aspects of pottery.

1. Teachers should know the interest, aptitude, ability of learners towards various vocational skills and motivate them to learn and know the benefit.

2. Teachers should network with the community artisans, utilise their services, and encourage children to interact and learn the skill as per their interest.

3. Teachers should understand learners' family vocation and appreciate their skills. Teachers may help the community by engaging learners in various community services through the craft.

4. Teachers should encourage learners to learn family-based craft, connect to their traditional vocation, explore innovations in the vocation, and encourage entrepreneurship.

5. Teachers should encourage children to be involved in home activities, observe them, connect them to all the concepts, and share the same in the classroom.
6. Teachers should motivate learners to go around the community, identify locally significant vocations, associated skills and encourage them to discuss the issues related to the vocation.
7. Teachers should engage students with artisans to learn concepts related to the craft.
8. The teachers should motivate students to develop innovative ideas related to crafts and develop entrepreneurship and leadership qualities for future sustainability.
9. All the teachers should be given professional training at least in one craft-centric vocation and provide all other necessary skills to train the learners.
10. Teachers should be capable of striking a balance between technical expertise, academic capability, intellectual work and economic self-sufficiency.

5.7.4 Recommendations to Learners:

1. Learners should engage in craft with a perspective to explore and learn various concepts.
2. Learners need to adopt the vocational skills in which they have an interest and aptitude.
3. Learners need to be committed to the craft/ vocation opted to learn.
4. Learners need to explore the concepts through social contacts related to crafts.
5. Learners should understand the importance of craft in creating livelihood and know the tradition of craft in society.
6. Learners should pick up all the skills related to the craft and attain professionalism.

5.7.5 Recommendations to Parents

Mother are the first teachers and family is the first institution of a child so that family play a significant role in child's growth and development. The child's education is not possible in an effective manner without the proper coordination and collaboration between the school and family. It gives a proper, healthy, and creative environment to the child so that they can grow and develop properly. Researcher has identified important recommendations for parents as described below.

1. A healthy and safe environment at home with appropriate learning experiences, support, and a positive attitude about school should be provided.
2. Communication between families and schools should be flexible, encourage students, and make learning comfortable.
3. Learning at home provides ideas and information about how they can be assisted with their children's homework activities and curricular-related things.
4. Children should be encouraged in the traditional work of their family (for pottery communities) with up-gradation of professional skills to carry the traditions to future generations with pride.
5. Children must be part of the household work and connect conceptual understanding and skill learning in every activity they do.
6. Linking existing activity environment for crafts, services have to be effectively utilised. Parents need to be sensitized for the dignity of labour and village self-sufficiency by utilising local natural and human resources.

B. Research Community

This study has been conducted extensively so that various areas or aspects of this research problem are unfolded and unexplored. Thus, the research community members can further identify their interest area or aspect from this research problem and explore them. This process is cyclic and continuous and contribute to knowledge enhancement and enrichment. Researcher has suggested such type of areas or aspect in the form of suggestions for further research.

5.8 Suggestions for Further Study

This study has investigated this research problem to contribute to knowledge enrichment in a limited time so that various areas or aspects related to this concept are unfolded and unexplored. The researcher has suggested such type of areas or aspects in the form of suggestions for further research. In this regard, the researcher highlighted some relevant and significant areas or aspects for further development and application.

1. Longitudinal studies on implementing and evaluating this curriculum model can be undertaken.
2. Similar curriculum models can be designed in other traditional Indian eco-friendly crafts like Metal craft, Block printing, Folk painting, Embroidery and many more to revive our glorifying past.
3. Similar researches in different states, can be done apart from West Bengal.
4. Comparative ethnographic studies on artisans of Blue Pottery, Longpi Pottery, Andretta Pottery may be analyzed to reframe the curriculum for India as a whole.

Chapter V/Findings and Discussion

5. Exploratory case studies can be researched in-depth on the craft profiles of individual pottery sites, which have a proven track of excellence in pottery artistry products.
6. Meta-analysis on related literature in the curriculum of work-based education across the Indian sub-continent can be another rich study in education.

BIBLIOGRAPHY

Bibliography

- Acharya, K. P., Rajbhandary, R., & Acharya, M. (2019). (Im) Possibility of Learning Science Through Livelihood Activities at Community Schools in Nepal. *Asian Social Science*, 15(6), 1-88.
- Adebimpe, O.O. (2015). Pottery production, an entrepreneurship perspective for job creation and poverty alleviation. A case study of Dada pottery, Okelele, Ilorin, Kwara State, Nigeria. *Journal of economics and sustainable development*, 6, 172-178.
- Ajzen, I. (1985). From Intentions to Action: A Theory of Planned Behavior. In: Kuhl, J. and Beckmann, J., Eds., *Action-Control: From Cognition to Behavior*, Springer-Verlag, Heidelberg, 11-39. http://dx.doi.org/10.1007/978-3-642-69746-3_2
- Ajzen, I., & Fishbein, M. (1969). The prediction of behavioral intentions in a choice situation. *Journal of experimental social psychology*, 5(4), 400-416.
- Akram, M. (2012). Formal education, skill development and vocationalisation: The missing link in India. *Research on Humanities and Social Sciences*, 2(8), 142-148.
- Albashiry, N. M., Voogt, J. M., & Pieters, J. M. (2015). Improving curriculum development practices in a technical vocational community college: examining effects of a professional development arrangement for middle managers. *The Curriculum Journal*, 26(3), 425-451.
- Al-Mamary, Y. H. S., & Alraja, M. M. (2022). Understanding entrepreneurship intention and behavior in the light of TPB model from the digital entrepreneurship perspective. *International Journal of Information Management Data Insights*, 2(2), 100106.
- Anisa, A., Suryadarma, G. P., Wilujeng, I., & Prasetyo, Z. K. (2016). Improving Students' Entrepreneurial Attitude Through Local Potential Pottery and Furniture of Jepara. In *Proceeding of 3Rd International Conference on Research, Implementation and Education of Mathematics and Science Yogyakarta*. 7-16.
- Ansari, S. (2015) *Education through work (mushroom production) and its relation to other subjects*. Learning Curve, 24. pp. 67-71.

Bibliography

- Arani, M. R. S., Alagamandan, J., & Tourani, H. (2004). Work-Based Learning: A Practical Approach for Learning to Work and Working to Learn. A Case Study on Decision-Makers' Professional Development in Iran. *Online Submission*.
- Arianty, F., & Purwanto, T. A. (2018). A Review of Vocational Education Curriculum in Accordance with Industrial Needs: Case Study. *KnE Social Sciences*, 15–36. <https://doi.org/10.18502/kss.v3i11.2747>
- Austin, J., Stevenson, H., & Wei-Skillern, J. (2006). Social and commercial entrepreneurship: same, different, or both?. *Entrepreneurship theory and practice*, 30(1), 1-22.
- Barman & Hazra (2017). Prospect of traditional craft in present economy: A study of earthen doll of Krishnagar, West bengal. *International Journal of Management*. 8. 75–81.
- Bhardwaj, A. (2018). Evolution of Blue Pottery Industry in Rajasthan. *International Journal of Research and Analytical review*, 5.
- Bhattacharya, A (2002). Lifelong Learning–Strategy for India: Synthesising Thoughts of Grundtvig, Tagore, Gandhi and Freire. Indian Adult Education Association , https://www.researchgate.net/profile/Shah/publication/336231145_International_Dimensions_of_Adult_and_Lifelong_Learning_1/links/5d958f35a6fdccfd0e71397a/International-Dimensions-of-Adult-and-Lifelong-Learning-1.pdf#page=64
- Bird, C. M. (2005). How I stopped dreading and learned to love transcription. *Qualitative inquiry*, 11(2), 226-248.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, 3(2), 77-101.
- Carruthers, T. J., Venter, M. W., & Botha, M. (2019). The relationship between entrepreneurial competencies and the recurring entrepreneurial intention and action of existing entrepreneurs. *The Southern African Journal of Entrepreneurship and Small Business Management*, 11(1), 1-15.
- Chand, P. V. S. (1996). An investigation into curriculum innovations in rural institutions of higher education: gram vidyapiths of Gujarat (Doctoral dissertation, GUJARAT UNIVERSITY).

Bibliography

- Chenoy, D. (2013). Public-private partnership to meet the skills challenges in India. *Skills Development for Inclusive and Sustainable Growth in Developing Asia-Pacific*, 181-194.
- Cohen, D., & Crabtree, B. (2006). Qualitative research guidelines project.
- Creswell, J.W. (2017). *An Introduction to Educational Research*, London: Sage
- Degue, J. K. (2018). *Factors influencing entrepreneurial intentions for business start-up among students of Ho Technical University In Ghana* (Doctoral dissertation, University of Cape Coast).
- Deshpande, A.S. (2020). Development of self instructional programme for enhancing critical thinking skills of science and social science postgraduate student. Doctoral Thesis. Savitri Phule Pune University.
<http://hdl.handle.net/10603/309453>
- Emerson, J., & Twersky, F. (Eds.). (1996). *New social entrepreneurs: The success, challenge and lessons of non-profit enterprise creation*. Homeless Economic Fund, the Roberts Foundation.
- Fernandez, C. (2009). Participation of tribal women in agro biodiversity conservation and postulating environmental education module for sustainable livelihood. Doctoral Thesis. Tamil Nadu Agricultural University.
<http://hdl.handle.net/10603/235601>
- Folkestad, B. (2008). *Analysing Interview data possibilities and challenges* (No. 13). Europheres project.
- Gay, L. R. (1996). *Educational Research*. Prentice Hall PTR.
- Ghosh, B. K. (2014). Economics of eco-friendly terracotta products in Bankura District of West Bengal. *Journal of Economics and Development Studies*, 2(2), 233-245.
- Gough, V. (2018). Relationships between entrepreneurial attitudes and intentions in an experiential education. *The Journal of Business Inquiry*, 18(2), 100-119.
- Gupta, K. C. (1988). *Progress and Prospects of Pottery Industry in India: A Case Study of UP*. Mittal Publications.

Bibliography

- Hazra, K. K., & Barman, A. (2017). Survival of earthen doll products and the contemporary trade-an argument on potency of Bengal Pottery. *CLEAR International Journal of Research in Commerce & Management*, 8(7).
- Heinich, R. (1996). *Instructional media and technologies for learning*. Simon & Schuster Books For Young Readers.
- IAMR (Institute Applied Manpower Research). (2010): The Challenges Facing Skill Development in India: An Issues Paper, Planning Commission, Government of India
- Jing, P., Huang, H., Ran, B., Zhan, F., & Shi, Y. (2019). Exploring the factors affecting mode choice Intention of autonomous vehicle based on an extended theory of planned behavior—A case study in China. *Sustainability*, 11(4), 1155.
- Kadir, M. B. A., Salim, M., & Kamarudin, H. (2012). The relationship between educational support and entrepreneurial intentions in Malaysian higher learning institution. *Procedia-Social and Behavioral Sciences*, 69, 2164-2173.
- Kasemi, D. N. (2014). Problems of pottery industry and policies for development: case study of Koch bihar district in west bengal, India. 3(7).
- Kickul, J., & Krueger, N. (2004). A cognitive processing model of entrepreneurial self-efficacy and intentionality. *Frontiers of entrepreneurship research*, 2004, 607-617.
- Klewitz, J., Zeyen, A., & Hansen, E. G. (2012). Intermediaries driving eco-innovation in SMEs: A qualitative investigation. *European Journal of Innovation Management*. <https://doi.org/10.1108/14601061211272376>
- Kolb, A. Y., & Kolb, D. A. (2009). Experiential learning theory: A dynamic, holistic approach to management learning, education and development. *The SAGE handbook of management learning, education and development*, 7, 42.
- Kolvereid, L. (1996). Prediction of employment status choice intentions. *Entrepreneurship Theory and practice*, 21(1), 47-58.

Bibliography

- Krishnan, K.P. & Venkatesan, R. (2022). *The missing middle of Indian entrepreneurship*. (2022, May 15). Mint. <https://www.livemint.com/politics/news/the-missing-middle-of-indian-entrepreneurship-11652635690307.html>
- Krueger, N. (1993). The impact of prior entrepreneurial exposure on perceptions of newventure feasibility and desirability. *Entrepreneurship Theory & Practice*, 18, 5– 21
- Lali, S. (2002). Developing and testing integrated educational models using environment and community resources. <https://hdl.handle.net/10603/630>
- Lawshe, C. H. (1975). A quantitative approach to content validity. *Personnel psychology*, 28(4), 563-575.
- Leech, B. L. (2002). Asking questions: Techniques for semistructured interviews. *PS: Political Science & Politics*, 35(4), 665-668.
- Lenin, S. (2021). Effectiveness of e learning module in learning english among secondary student teachers. Doctoral Thesis. Manonmaniam Sundaranar University. <http://hdl.handle.net/10603/420704>
- Liñán, F., & Chen, Y. W. (2009). Development and cross-cultural application of a specific instrument to measure entrepreneurial intentions. *Entrepreneurship theory and practice*, 33(3), 593-617.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Sage.
- Lucas, B. (2015). *Vocational Pedagogy: What it is and why it matters*. 12.
- Lynn, M. R. (1986). Determination and quantification of content validity. *Nursing research*, 35(6), 382-386.
- Majumdar, S. (2009). Major challenges in integrating sustainable development in TVET.
- Mishra, D. (2020). Development and efficacy of web based modules EduSelf for Educational Technology Doctoral Thesis. University of Lucknow. <http://hdl.handle.net/10603/355375>
- Mitra, A. (2005). Training and Skills Development for Decent Work in the Informal Sector: Case Studies from South India. 155-182.

Bibliography

- Moganty, V. (2017). Value-based Education in Culture and Curriculum. Gandhi's Ideas for sustainable development.
- Mujumdar, S.S. (2012). A Study of Significance of Vocationalization of Education and Skill Development in India with special reference to the State of Maharashtra. *Doctoral Thesis*. Symbiosis International University Pune
- Mwange, A. (2018). Measurement of Variables in Entrepreneurship Intention Studies: A Review of the Entrepreneurship Intentions Questionnaire (EIQ). *Journal of Social Science and Humanities Research*.
- Nakelet, O. H., Prossy, I., Bernard, O. B., Peter, E., & Dorothy, O. (2017). Assessment of Experiential Learning and Teaching Approaches in Undergraduate Programmes at the School of Agricultural Sciences, Makerere University, Uganda. *International journal of higher education*, 6(5), 155-167.
- NEP (2020): Policy document released by Government of India Retrieved from https://www.education.gov.in/sites/upload_files/mhrd/files/NEP_Final_English.pdf
- Nusrat, R. (2014). Impact of MGNREGA on socio economic development and sustainable livelihood among the Gujjar and Tongia tribes of Uttar Pradesh and Uttarakhand.
- Onwuegbuzie, A. J. (2003). Effect sizes in qualitative research: A prolegomenon. *Quality and Quantity*, 37.
- Padmanabhan, J. (2016). Integrated Approach to ESD towards Enhancing Knowledge on Sustainable Development. *World Scientific News*. WSN 26 (2016). 50-60. 10.18052/www.scipress.com/ILSHS.63.40.
- Patel, N., & Desai, S. (2020). ABC of face validity for questionnaire. *Int J Pharm Sci Rev Res*, 65, 164-8.
- Patton, M. Q. (1990). *Qualitative evaluation and research methods*. SAGE Publications, inc.

Bibliography

- Pramanik, S., Sikdar, P. P., Bandyopadhyay, D., & Banerjee, A. (2021). Revisiting indigenous craft of West Bengal, Terracotta of Panchmura: A Review of Socio economic Study. *10*(4).
- Purohit, S. (2014). An Analytical Study of Alternative Education Programme Run by Digantar. <http://hdl.handle.net/10603/139660>
- Ramasamy, M., & Pilz, M. (2020). Vocational Training for Rural Populations: A Demand-Driven Approach and its Implications in India. *International Journal for Research in Vocational Education and Training*, 7(3), 256–277. <https://doi.org/10.13152/IJRVET.7.3.1>
- Rangachary, P. (2015). Learning Life-long. *Learning Curve*, (24), 59-61.
- Reid, A. W. (2003): Curriculum as Institutionalized Learning: Implications for Theory and Research, *Journal of Curriculum and Supervision*, 19 (1). 29-43
- Rekha, P. (2007). Development of a training module for teachers to transact biology curriculum for developing certain moral values in secondary school pupils. Doctoral Thesis. University of Calicut. <http://hdl.handle.net/10603/20661>
- Rivani, R., Raharja, S. U. J., & Arifianti, R. (2018). SWOT Analysis on the Export-oriented Ceramic Industry Centre in Purwakarta, Indonesia. *Review of Integrative Business and Economics Research*, 7, 189-199.
- Robinson, P. B., Stimpson, D. V., Huefner, J. C., & Hunt, H. K. (1991). An attitude approach to the prediction of entrepreneurship. *Entrepreneurship theory and practice*, 15(4), 13-32.
- Saha, S. (2019). Pottery Entrepreneurship, an Age Old Glory in a Declining Stage: Ways to Revive.
- Sahoo, P. M., Joddar, P., Biswas, S., & Sarkar, B. (2016). The significance of terracotta cottage industry in the socio-economic livelihood of people-a case study of bankura terracotta craft hub. *Int J Curr Res*, 8(01), 25800-25806.
- Sahu, S. K., Yadav, G., & Teta, R. (2015). Learning while helping. *Learning Curve*, (24), 72-74.

Bibliography

- Sandvik, S. B. (2011). Is quality education a livelihood strategy : the relevance of secondary school education in Kisoro district, southwestern Uganda (Master's thesis, University of Agder).
- Sati, V. P., & Vangchhia, L. (2017). Sustainable livelihood approach to poverty reduction. *A sustainable livelihood approach to poverty reduction: an empirical analysis of Mizoram, the eastern extension of the Himalaya*, 93-100.
- Segal, G., Borgia, D., & Schoenfeld, J. (2005). The motivation to become an entrepreneur. *International journal of Entrepreneurial Behavior & research*.
- Sermasuk, S., Chianchana, C., & Stirayakorn, P. (2014). A study of model of vocational curriculum development under vocational education commission using cross-impact analysis. *Procedia-Social and Behavioral Sciences*, 116, 1896-1901.
- Shapero A. & Sokol L. (1982). The social dimensions of entrepreneurship. In C.A. Kent, D.L. Sexton, & K.H. Vesper (eds.), *Encyclopedia of Entrepreneurship*, 72–90.
- Shapero A. (1975). The displaced, uncomfortable entrepreneur. *Psychology Today*, November 9, 83–88.
- Sharma, S. (2015). A powerful means of integrated holistic learning. *Learning Curve*, 24, 75-79.
- Shasa, S. and Sreedharan, S. (2015). *Earthian program - through the lens of work and education*. *Learning Curve* (24). pp. 89-91.
- Shaver K. G., & Scott L. R. (1991). Person, process, and choice: The psychology of new venture creation. *Entrepreneurship Theory and Practice*, 16(2), 23–45.
- Sikdar, M. & Chaudhuri, P. (2015). Pottery making tradition among the Prajapati community of Gujarat, India . *Eurasian Journal of Anthropology* , 6 (1) , 1-14 .
<https://dergipark.org.tr/en/pub/eja/issue/48754/620284>
- Sodhi, G. J. (2006). Traditional Potters and Technological Change in a North Indian Town. *Sociological Bulletin*, 55(3), 367–382.
<https://doi.org/10.1177/0038022920060302>
- Tan, J. (2005). Venturing in turbulent water: A historical perspective of economic reform and entrepreneurial transformation. *Journal of Business Venturing*, 20(5), 689-704.

Bibliography

- Tashakkori, A., & Teddlie, C. (2008). Quality of inferences in mixed methods research: Calling for an integrative framework. *Advances in mixed methods research*, 53(7), 101-119.
- Teddlie, C., Tashakkori, A., & Johnson, B. (2008). Emergent techniques in the gathering and analysis of mixed methods data. *Handbook of emergent methods*, 389, 413.
- Teddlie, C.B. & Tashakkori, A. (2008). Foundations of Mixed Methods Research: Integrating Quantitative and Qualitative Approaches in the Social and Behavioural Sciences, Los Angeles: Sage
- Tomlinson, J., & Rhiney, K. (2018). Experiential learning as a tool for farmer engagement and empowerment in a changing regional climate. *Caribbean quarterly*, 64(1), 114-135.
- Tripathy, S., & Bardhan, J. (2019). An In-Depth Study of Pottery as a Livelihood through a Discussion of its Process, Shocks, Seasonality, Trends and Economics. *International Journal of Trend in Scientific Research and Development*, 4(1), 563-566.
- Vanaja Kumari, G. (2007). Development of curriculum design of physical education for schools in Andhra Pradesh. *University*.
<http://shodhganga.inflibnet.ac.in:8080/jspui/handle/10603/196592>
- Verma, N. (2008). A study of Sri Aurobindo's integral education and its effectiveness in terms of cognitive learning and non-cognitive learning outcomes at the secondary school level. <http://hdl.handle.net/10603/10909>
- Vivek, D. (2015). Analytical Study of Curriculum Design for ESL at Undergraduate Level in Maharashtra. <http://hdl.handle.net/10603/86253>
- Wiggins, G., Wiggins, G. P., & McTighe, J. (2006). *Understanding by design*. Ascd.
- Willig, C. (2008) *Introducing qualitative research methods in psychology: Adventures in theory and method*. Open University Press.

Bibliography

- Wilson, F. R., Pan, W., & Schumsky, D. A. (2012). Recalculation of the critical values for Lawshe's content validity ratio. *Measurement and evaluation in counseling and development*, 45(3), 197-210.
- Wu, M. , Siswanto, I., Suyanto, W., Sampurno, Y. & Tan, W. (2018). Creative Thinking Curriculum Infusion for Students of Teachers' Education Program. *Jurnal Pendidikan Teknologi dan Kejuruan*. 24. 1-12. 10.21831/jptk.v24i1.16883.

APPENDIX-A

(TOOLS OF THE STUDY)

- 1. Learning Aspirant Entrepreneurial Intention and Curriculum Need Perception in Pottery (LAEICNP)**
- 2. Craft Sustenance and Skill-Based Questionnaire for Skilled Artisans in Pottery (CSSSAP)**
- 3. Entrepreneurship and Skill-Based Questionnaire for Trade Entrepreneurs in Pottery (ESTEP)**

UNIVERSITY OF HYDERABAD



Learning Aspirant Entrepreneurial Intention and Curriculum Need Perception Scale (LAEICNP)

Dear Learning Aspirant,

I am doing Ph.D. in Education at Department of Education and Education Technology, School of Social Sciences, Hyderabad Central University, Hyderabad. I need your valuable information and details in the given format for my Research work. The information which is going to be provided by you, will be used for my research work only. It is not a test, so feel free when you respond to the items. Thank you for your kind co-operation.

Supervised by

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Debapriya Ghosh

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School of Social Sciences

University of Hyderabad

Questionnaire No. : Date : Place :

Instructions

The following questionnaire consists of three parts :

Part 1 : Background Information – 9 items

Part 2 : Entrepreneurial Intention of Learning Aspirants – This consists of 2 sections- (1) Perceived Entrepreneurial Desirability and Attitude and (2) Perceived Entrepreneurial Feasibility and Propensity. – 21 items

Part 3 : Need perception of learning aspirants for a curriculum in pottery for entrepreneurship – 10 items

Each of the sections contain statements with scale alternatives Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree. Read the statements carefully and feel free to express your opinion. There is no time limit.

PART – I : BACKGROUND INFORMATION

Age Range (in years) :

- ☐ 11-20
- ☐ 21-30
- ☐ 31-40
- ☐ 41-50
- ☐ 51-60

Gender :

- ☐ Male
- ☐ Female

Highest Level of Education :

- ☐ Upper Primary
- ☐ Secondary
- ☐ Senior Secondary
- ☐ Graduation
- ☐ Post-Graduation

Residential Area :

- ☐ Urban
- ☐ Semi-Urban
- ☐ Rural

Are you employed ?

- ☐ Yes
- ☐ No

Do you have any vocational degree in pottery ?

- ☐ Yes , please specify _____
- ☐ No

Have you participated in any course/diploma/workshop/seminar for pottery entrepreneurship?

- ☐ Yes , please specify _____
- ☐ No

Are you interested to enroll in any courses for pottery entrepreneurship in future?

- ☐ Yes
- ☐ No

Do you have interest towards Pottery as a subject in curriculum ?

- ☐ Yes
- ☐ No

PART-II:ENTREPRENEURIAL INTENTION OF LEARNING ASPIRANTS

Section 1 : Entrepreneurial Desirability-cum-Attitude of Learning Aspirants towards Pottery

STATEMENTS	STRONGLY AGREE	AGREE	NEUTRAL	DISAGREE	STRONGLY DISAGREE
1. Pottery, learnt at any age, helps in building potential employability skills.					
2. Pottery products are very lucrative for buyers these days.					
3. Pottery products are eco-friendly and hence are gaining popularity.					
4. Being involved in pottery will help me nurture my crafting skills effectively.					
5. Pottery is an indigenous craft, and I have a desire to take advantage of my creative talent, to preserve our rich cultural heritage.					
6. Pottery products are losing importance, due to competitive alternatives, so desirability to craft pottery is fading away.					
7. Innovative pottery products for daily activities are eye-catching for all people and are much in demand.					
8. Pottery, as an enterprise, will help in building various vocational skills.					
9. Pottery does not aid in job creation for enterprising individuals.					
10. I am interested to take advantage of the current marketing opportunities in pottery.					
11. Pottery of any form is innovative and allows the craftsman to use preferred individual workstyle.					
12. Pottery products are equally on demand by all strata of society.					
13. There are no good prospects for wider and increased needs and acceptance of pottery among the rural and urban dwellers for varied purpose.					

Section 2 : Entrepreneurial Feasibility-cum-Propensity of learning aspirants in pottery

STATEMENTS	STRONGLY AGREE	AGREE	NEUTRAL	DISAGREE	STRONGLY DISAGREE
14. I am business-minded, and pottery being demandful among commons these days, will help me attain a positive financial and respectful position in society.					
15. A career as an entrepreneur in pottery does not imply high self-employment satisfaction level.					
16. I intend to enjoy personal freedom at work, and hence have a tendency towards establishing pottery enterprise.					
17. I do not have a professional goal of setting up a pottery firm, as it does not ensure economic stability in future.					
18. I want to carry forward my entrepreneurial family culture in pottery.					
19. I have the power to make decisions and enjoy taking risks in the entrepreneurship of pottery.					
20. I want to take up entrepreneurship in pottery as an alternative career to generate additional income to maintain my family.					
21. Setting up an enterprise in pottery would keep me updated about the latest developments in the field in these days of rapid progress.					

**PART- III : NEED PERCEPTION OF LEARNING ASPIRANTS FOR
A CURRICULUM IN POTTERY FOR ENTREPRENEURSHIP**

STATEMENTS	STRONGLY AGREE	AGREE	NEUTRAL	DISAGREE	STRONGLY DISAGREE
22. There is a need for a curriculum model in pottery to get a content-laden and theoretical module-based approach aiming to give a deeper understanding of the phenomenon					
23. A curriculum model in pottery will provide an occupationally-oriented approach aiming at giving budding entrepreneurs the requisite knowledge and skills					
24. A curriculum model in pottery will facilitate a process-based and experiential approach for learning aspirants to go through actual entrepreneurial learning process					
25. Content, activities and evaluation of activities supporting the creation of knowledge, competencies and experiences in pottery will make it possible for learning aspirants to initiate and participate in creative process.					
26. A curriculum model in pottery is believed to ensure facilitation of self-employment opportunities among learning aspirants					
27. A curriculum will help successfully generate sustainable livelihood opportunities for the future learning aspirants in pottery					
28. A curriculum model divided into modules, channelizes a learning aspirant through rich instructional designs and learning strategies leading to development of an academic mindset.					
29. Following a credit-based module in a curriculum model in pottery will enable a learning aspirant to develop interpersonal and social skills.					
30. Learning through a curriculum will develop entrepreneurial competencies among learning aspirants leading to value enhancement of pottery.					
31. Learning aspirants will find meaningfulness, engagement, participation and life satisfaction in pottery when learnt through a curriculum.					

Thank you for your time.

UNIVERSITY OF HYDERABAD



Craft Sustenance and Skill-Based Questionnaire for Skilled Artisans in Pottery (CSSSAP)

Dear Skilled Artisan,

I am doing Ph.D. in Education at Department of Education and Education Technology, School of Social Sciences, Hyderabad Central University, Hyderabad. I need your valuable information and details in the given format for my Research work. The information which is going to be provided by you, will be used for my research work only. It is not a test, so feel free when you respond to the items. Thank you for your kind co-operation.

Supervised by

Dr. T. Sumalini

Assistant Professor

Department of Edn and Edn Technology

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University of Hyderabad

Debapriya Ghosh

Doctoral Research Scholar

Department of Edn and Edn Technology

School of Social Sciences

University of Hyderabad

Questionnaire No. Date : Place :

Instructions

The following questionnaire consists of two parts :

Part 1 : Background Information (14 items)

Part 2 : Craft Sustenance and Skill-Based Information (13 items)

Please tick the appropriate alternative for the questions having options. For the rest, please pen down your opinion. Your responses will remain confidential.

PART 1 : BACKGROUND INFORMATION

1.1 Name (optional) :

1.2 Age Range :

- ☐ Less than 20
- ☐ 20-30
- ☐ 30-40
- ☐ 40-50
- ☐ 50-60
- ☐ More than 60

1.3 Gender :

- ☐ Male
- ☐ Female

1.4 Level of Education :

- ☐ Illiterate
- ☐ Upto Primary Level
- ☐ Upto Upper Primary Level
- ☐ Upto Secondary Level
- ☐ Upto Higher Secondary Level
- ☐ Upto Graduate Level
- ☐ Above Graduate Level

1.5 Have you obtained formal/systematic education/training for adopting pottery craft?

- ☐ Yes, please specify

- ☐ No

1.6 Trend of pottery :

- ☐ Familial
- ☐ Passionate Beginner

1.7 Duration of Work :

- ☐ Throughout the Year
- ☐ Seasonal

1.8 Marketing of Products :

- ☐ Locally
- ☐ Nationally
- ☐ Internationally

1.9 Annual Income:

- ☐ Less than 10000
- ☐ 10000-50000
- ☐ 50000-100000
- ☐ 100000-500000

1.10 Experience in Pottery artistry crafting :

- ☐ Less than 5 years
- ☐ 5-15 years
- ☐ 15-30 years
- ☐ 30-45 years
- ☐ More than 45 years

1.11 Participation in Showcasing Items/Exhibition:

- ☐ Frequently
- ☐ Seasonally
- ☐ Annually
- ☐ Nil

1.12 Profit :

- ☐ Marginal
- ☐ Wider
- ☐ Nil

1.13 Do you employ other people?

- ☐ Yes
- ☐ No

1.14 How much does your satisfaction in this craft meet your expectations?

- ☐ Very High
- ☐ High
- ☐ Medium
- ☐ Low
- ☐ Very Low

**PART 2 : CRAFT SUSTENANCE AND SKILL-BASED
INFORMATION**

2.1 Adoption of Pottery

1. How did you start learning pottery craft?

- ☐ Observation
- ☐ Imitation
- ☐ Hands-on
- ☐ Experimentation
- ☐ Others, please specify _____

2. What tools and equipment do you use for making pottery craft items?

2.2 Marketing and Packaging of Products

3. To whom do you sell your products?

- Wholesalers
- Direct Customers
- Both
- Corporate dealers

4. When do you check the quality of the product?

- Before production (Raw material check)
- After production
- At every stage
- No need to check

5. What are your modes of packaging and marketing clay products?

2.3 Perception about Skill Building and Sustenance in Pottery

6. Do you think the demand of pottery products has increased over the years?

7. In which aspects of pottery is special training required for pottery to emerge as a sustainable livelihood?

- Alternative forms of clay
- Advanced machinery for pottery manufacture
- Marketing and Packaging of Pottery Products
- Availability of Funds and Investment knowledge in Pottery
- Technology Integration

- Others, please specify _____

8. Which skills are highly required in pottery ?

2.4 Perception about Current Trends in Pottery

9. Which kind of pottery products is most demandful these days?

- Cookware
- Storageware
- Toys
- Interior Decorative items
- Jewellery
- Others, please specify _____

10. In which aspects of pottery do you face challenges the most?

- Registration and Licensing
- Information and guidance
- Fund/Capital availability
- Outdated Marketing strategies
- Seasonal Change
- Cost fixing
- Strong competition
- Infrastructure facilities
- Availability of Raw Materials
- Labour/Manpower
- Machinery needs
- Education and Training
- Others, please specify _____

11. What kind of competition do you face in pottery?

- Price Competition
- Production Competition
- Innovative item-based competition
- Customer preference for renowned brands
- Advertising Competition
- Others, please specify _____

2.5 Perception about Future Possibilities and Value Enhancement of the Craft

12. In which aspects can technology be integrated for value and quality enhancement of pottery?

- Procurement of clay
- Production
- Packaging
- Transportation
- Marketing
- Value Enhancement

13. What competencies should be implemented in pottery for its value enhancement?

- To use new machinery
- New methods
- New Technology integration
- Increased production capacity
- Innovative products
- New advertising strategies
- To enter new markets
- Managing risks
- Others, please specify _____

Thank you for your time.

UNIVERSITY OF HYDERABAD



Entrepreneurship and Skill-Based Questionnaire for Trade Entrepreneurs in Pottery (ESTEP)

Dear Trade Entrepreneur,

I am doing Ph.D. in Education at Department of Education and Education Technology, School of Social Sciences, Hyderabad Central University, Hyderabad. I need your valuable information and details in the given format for my Research work. The information which is going to be provided by you, will be used for my research work only. It is not a test, so feel free when you respond to the items. Thank you for your kind co-operation.

Supervised by

Dr. T. Sumalini

Assistant Professor

Department of Edn and Edn Technology

School of Social Sciences

University of Hyderabad

Scholar

Debapriya Ghosh

Doctoral Research Scholar

Department of Edn and Edn Technology

School of Social Sciences

University of Hyderabad

Questionnaire No. Date : Place :

Instructions

The following questionnaire consists of two parts :

Part 1 : Background Information (14 items)

Part 2 : Entrepreneurship and Skill-Based Information (12 items)

Please tick the appropriate alternative for the questions having options. For the rest, please pen down your opinion. Your responses will remain confidential.

PART 1 : BACKGROUND INFORMATION

1.1 Name (optional) :

1.2 Age Range :

- ☐ Less than 20
- ☐ 20-30
- ☐ 30-40
- ☐ 40-50
- ☐ 50-60
- ☐ More than 60

1.3 Gender :

- ☐ Male
- ☐ Female

1.4 Level of Education :

- ☐ Illiterate
- ☐ Upto Primary Level
- ☐ Upto Upper Primary Level
- ☐ Upto Secondary Level
- ☐ Upto Higher Secondary Level
- ☐ Upto Graduate Level
- ☐ Above Graduate Level

1.5 Have you received any formal education/training before adopting pottery trade?

- ☐ Yes, please specify _____
- ☐ No

1.6 Duration of Profitable Time :

- ☐ Throughout the Year
- ☐ Seasonal

1.7 Marketing of Products :

- ☐ Locally
- ☐ Nationally
- ☐ Internationally

1.8 Type of customers :

- ☐ Local
- ☐ From other regions /states
- ☐ Foreigners
- ☐ All of these

1.9 Annual Income:

- ☐ Less than 10000
- ☐ 10000-50000
- ☐ 50000-100000
- ☐ 100000-500000
- ☐ More than 500000

1.10 Experience in Pottery Trade :

- ☐ Less than 5 years
- ☐ 5-15 years
- ☐ 15-30 years
- ☐ 30-45 years
- ☐ More than 45 years

1.11 Participation in Showcasing Items/Exhibition :

- ☐ Frequently
- ☐ Seasonally
- ☐ Annually
- ☐ Nil

1.12 Profit :

- ☐ Marginal
- ☐ Wider
- ☐ Nil

1.13 Do you employ other people?

- ☐ Yes
- ☐ No

1.14 How much does your satisfaction in this trade meet your expectations?

- ☐ Very High
- ☐ High
- ☐ Medium
- ☐ Low
- ☐ Very Low

PART 2 : ENTREPRENEURSHIP AND SKILL BASED INFORMATION

2.1 Adoption of Pottery

1. What objective did you have to set up pottery enterprise?

- Entrepreneurial Mindset
- Familial trend
- Interest in a profitable enterprise
- Convenience of managing and supporting family
- Attaining positive financial position
- By circumstances beyond control
- Inadequate education and training
- Preservation of the craft
- Others , please specify _____

2. How did you raise the capital for beginning the enterprise?

- Own Fund
- Loan from Scheduled Bank/Local Cooperative
- Acquaintances
- Government/Non-Government Agency
- Others, _____ please _____ specify

2.2 Packaging and Marketing of Products

3. To whom do you sell your products?

- Direct customers
- Wholesalers
- Both
- Corporate Dealers
- Others, please specify _____

4. What are your modes of packaging and marketing clay products?

2.3 Perception about Skill Building and Sustenance in Pottery

5. In which aspects of pottery is special training required for pottery to emerge as a sustainable livelihood?

- Alternatives of Clay
 - Advanced machinery for pottery manufacturing
 - Marketing and packaging of Pottery Products
 - Availability of Funds and Schemes Literacy of Pottery Entrepreneurs
 - Others, _____ please _____ specify
-

6. Which skills are highly required in pottery ?

7. Do you think the demand of pottery products has increased over the years?

2.4 Perception about Current Trends in Pottery

8. Which kind of pottery products is most demandful these days?

- Cookware
 - Storageware
 - Toys
 - Interior Decorative items
 - Jewellery
 - Others,pleasespecify
-

9. In which areas of pottery do you face challenges the most?

- Registration and Licensing
- Information and guidance
- Fund/Capital availability
- Outdated Marketing strategies
- Product Cost Fixing
- Strong competition
- Infrastructure facilities
- Availability of Raw Materials
- Labour/Manpower
- Machinery

- Education and Training
- Others, please specify _____

10. What kind of competition do you face in pottery?

- Price Competition
- Production Competition
- Innovation competition
- Customer preference for renowned brands
- Advertising Competition
- Others, please specify _____

2.5 Perception about Future Possibilities and Value Enhancement of the Craft

11. In which aspects can technology be integrated for value and quality enhancement of pottery?

- Procurement of clay
- Production
- Packaging
- Transportation
- Marketing
- Value Enhancement

12. What competencies should be implemented in pottery for its value enhancement?

- To use new machinery
- To use innovative equipment
- New Technology integration
- Innovative products
- New advertising strategies
- To enter new markets
- To enhance rate of production
- Others, please specify _____

Thank you for your time.

APPENDIX- B
(PUBLICATIONS AND
PRESENTATIONS)



TRACING THE ROOTS OF NEP-2020 TO GANDHIJI'S NAI-TALIM THROUGH DOCUMENT ANALYSIS AND INTERPRETATION

Dr. T. Sumalini*
Debapriya Ghosh**

ABSTRACT

The sole power of a country lies in its education structure and function. It marks the preparation of an individual for life and living. Education aids in the complete transformation of society and serves as the means to promote sustainable livelihoods. Mahatma Gandhi perceived the importance of societal transformation through education and, thus took a keen interest in emergence of Nai-Talim - learning through socially-significant productive activities. National Education Policy (NEP) 2020 refers to the educational policy document brought out by the Government of India, focusing on reorganizing the Indian education system both structurally and functionally. NEP 2020 "envisioned an education system embedded in Indian spirit that contributes directly to transforming India sustainably into an equitable and vibrant knowledge society by providing high-quality education to all, thereby making India a global knowledge superpower". It emphasized linking work to learning. This research paper stresses how the elements of NEP 2020 bear remarkable similarity with Gandhiji's Nai-Talim proposed several years back. It helps trace the roots of the NEP 2020 successfully to that of Nai-Talim proposed by Gandhiji, using critical cross-examination of the relevant literature.

Keywords: National Education Policy, Nai-Talim, Balanced Personality Development, Mother-Tongue, Productive Work

INTRODUCTION

Education can be redefined as a sequence of events starting with the advent of childbirth and terminates with demise. Education brings about a balanced development of individual personality. Education is not merely competition to earn grades. The purpose of Education is the paving the way to an individual's self-actualization. Education is a zestful process to develop the desired characteristics in the citizens, as are required for the rebuilding a nation. Education aims at building constructively inclined human existence and unraveling individual inner self of the students.

*We gratefully acknowledge ICSSR for the project focusing on documenting caselets in

'NaiTalim for Livelihood Education'

The prime reason of all afflictions prevailing in our society is separation of knowledge from work. Separation of learning from work leads to prevalence of injustice and prejudice in society. "In dynamic societies, the purpose of education is to equip individuals with the skills and attitudes necessary for adaptation to change and constructive participation in social change. To ensure this, education should be intimately related to human experiences."

Gandhiji aimed at the topmost need of development of soul and mind by means of pursuing education, simultaneously generating fortitude and self-dependence in the individual (Prabhu, V.K.A., 2010). He envisioned the

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**Doctoral Research Scholar - Department of Education and Education Technology, University of Hyderabad, Telangana, India.

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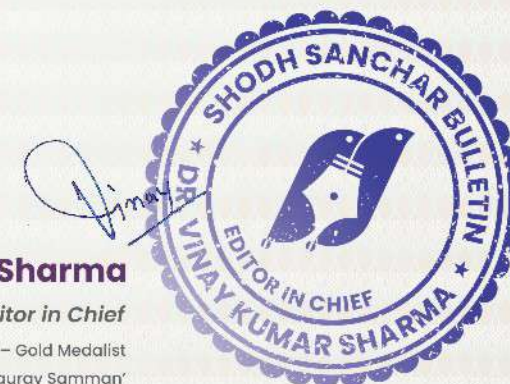
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Prof. Senthamarai Kannan

TLC, Faculty In-Charge

Geetha

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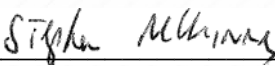


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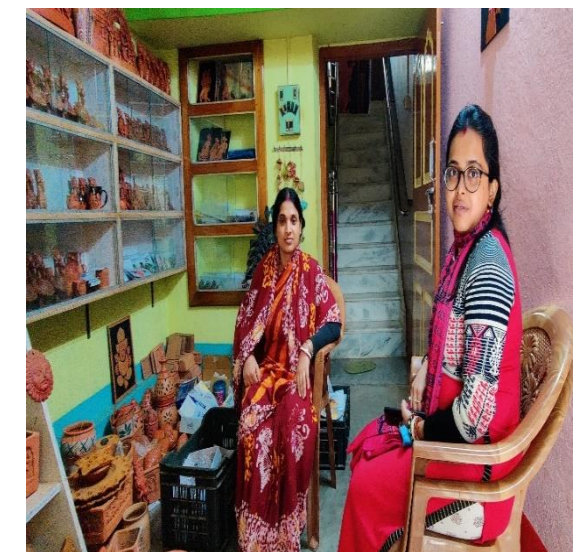


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APPENDIX- C

(PHOTOGRAPHS)

GLIMPSES OF DATA COLLECTION



THE PROCESS OF CRAFTING POTTERY



EVALUATION OF LEARNING MODULE

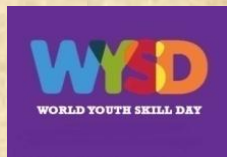


INNOVATIVE POTTERY PRODUCTS



APPENDIX-D

(RESEARCHER'S CONTRIBUTION)



The Future depends on what we do in the present – Mahatma Gandhi

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Inculcating entrepreneurship skills among the Indian youth through formal education.



Ms. Debapriya Ghosh
Doctoral Research Scholar
University of Hyderabad,,
Hyderabad, Telangana 500046

The National Education Policy 2020 advocates ‘no hard separation between academic and vocational streams’. Formal Education at the secondary and higher secondary grade level has both academic and vocational streams. However, in the light of NEP-2020, there arises the impetus to make the learners self-reliant. This can be achieved by developing entrepreneurship skills. Curriculum is the crux of formal education. Hence, entrepreneurship skill-based curriculum designing is the most effective way to inculcate entrepreneurship skills among the Indian youth. Curriculum at grades IX-XII consists of science, mathematics, social science, languages and the content has remained constant for over years. It is much more rote-learning oriented than skill-based. Integrating every content of the curricular subject with activities which can stimulate entrepreneurship skills can be a thrilling teaching-learning experience. The following examples will clarify the ambiguity.

Mathematics in secondary classes has a very important concept of Ratio and Proportion. To make learners understand the concept, an activity can be designed by the teacher by taking them to a construction site where the masons combine cement, mortar, sand and water in a certain ratio. Later the learners are grouped homogenously and each of the groups are posed a mathematical problem of ratio and proportion. Later, the resultant mixture can be used to construct small benches or slabs to give them a preliminary idea on masonry and develop entrepreneurial skills concerning the same.

Social science in secondary class consists of a concept called Agriculture. This chapter consists of types of crops, types of farming techniques and contribution of agriculture to the national economy, employment and output. To bring clarity and avoid confusion among the array of crops and techniques, learners can be taken to visit agricultural fields in rural areas and initiate hands-on rudimentary learning of the techniques. Through this, the learners get inclined towards agriculture and develop entrepreneurial skills in the same.

This is how every content should be organized linked with entrepreneurship from the secondary school level and disseminated in every school across the country, so that it inculcates the spirit of entrepreneurship among the youth.

DESIGNING CURRICULUM MODEL IN POTTERY FOR ENTREPRENEURSHIP

by Debapriya Ghosh



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