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Katsina State Natural Endowment as Potentials for the Initiation of Students' Creativity and Promotion of Local Industries

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Abstract

Encouraging students' creativity in science, technical and applied arts can promote our local industries and make the knowledge gained in secondary school education to become useful ideas for problem solutions. In this paper, a research study was conducted to identify the natural resources available in Katsina State that will support local industries and empower youth to practically display their skills as productive agents. Katsina State has 28 mineral resource types considered as veritable entrepreneurial sources that will promote local industries. The findings of the study have shown that Katsina State possesses very good entrepreneurial skills in carpentry, dye works, pottery, ornament works, wood carving, and leather works. From these crafts they produce furniture, garments, pots, interior decorations, and bags. One of the recommendations is that the Katsina State Government should provide funds to make our educational facilities and resources more functional to empower our teaming youths.

Keywords: Natural Resources, Local Crafts, Creativity.

Introduction

Youth empowerment to promote indigenous technology, and particularly the teaching of local craft at the Junior Secondary School level, depend specifically on their creativeness and interest. This is further supported by the effort of the Local Craft Teacher (LCT) or trainer to essentially boost their morals and perfect their ideas. A child is considered creative when he introduces a new entity of ideas as never before known to man. Omiko (2014) defined creativity to involve certain activities like being sensitive to problems, analysis, synthesis, fluency, resourcefulness and discovery. Also, creativity was defined as mental production of novel and useful ideas of problem solutions. And he divided it into two dimensions; the first dimension is the novelty notion, which is a phenomenon in every life and therefore anyone can be creative as an essential aspect of his contribution to the business environment (<https://www.earthreminder.com>). The second dimension is the useful notion which refers to materials or practical methods of assessing the usefulness of a novel idea. And this can be manifested in fine and applied arts, science and technology.

Additionally, technology means the integration of the physical objects or artifacts, the process of making the objects and the meaning associated with the physical objects, and how they form a seamless web that constitutes technology. In business education, technology means the information that is necessary to achieve a certain production outcome from a particular means of combining selected input for solving a particular company problem. If creativity has to be introduced in our Schools, it is essential that we identify the available raw materials that support local industries. For example, mahogany tree, indigo, unripe plantain sap and oil bean seed are available in Bakori, Dandume, Danja, Faskari, Kafur, Kankara, Malumfashi and Sabuwa Local Government Areas for the works of dye with locally source materials (Alamu & Ajibola, 2017). The report made available by Katsina State Investment and Property Development Company (KIPDECO, 2018), have indicated that mineral

resources like Nickel, Copper, Cobalt, Platinum, Chromites are found in Jibia, Faskari and Funtua areas. Diamond is found in Kafur and Gold is found in Batsari, Safana, and Faskari. All these are potential minerals that will support the establishment of local industries in Katsina State. This makes the research relevant and important for Schools in Katsina State.

Statement of the Problem

Katsina State Government through its 34 LGEAs manages 2,463 Primary Schools with pupils' enrolment of 1,717,972 and 21,468 Teachers. In the area of post primary education, the state possesses various categories of secondary schools numbering over 207 with enrolment figures of 274, 722 students and staff strength of 2,571 teachers. The present administration under the leadership of His Excellency, Aminu Bello Masari, is making concerted efforts by upgrading the schools in line with its restoration agenda on education, Maiunguwa, (2018).

However, the education sector in the state faces a myriad of serious problems. These include inequitable access, weak planning, management and monitoring capacity, data drought and low learning outcomes etc. Above all, there is poor quality of teachers. The teaching workforce is inequitably distributed and characterized by low level competence and professionalism as well as limited opportunities for professional development (Maiunguwa, 2018). This leads to low level creativity among students from our learning institutions and poor community initiatives in local craft engagement. Therefore, the research intends to demonstrate how learning creativity can make our secondary schools have potential in developing the students' resourcefulness.

Objectives of the Study

1. Identify and document natural resources that are found in Katsina State.
2. Arouse Students' interest and creativity through knowledge sharing on natural resources.
3. Inspire the Students', local community and Katsina State in general on the utilization of available resources.

Research Questions

1. What are the available natural resources in Katsina State?
2. What are the Implications of the identified natural resources on Students' interest and creativity?
3. What are the benefits of local natural resources to the people of Katsina State?

Literature Review

Relief And Geology of Katsina State

The relief setting of Katsina State has covered an area of 23,938 sq. km., and is located between latitudes 11°08'N and 13°22'N and longitudes 6°52'E and 9°20'E. The state is bounded by Niger Republic to the north, by Jigawa and Kano States to the east, by Kaduna State to the South and by Zarnfara State to the West. Katsina State forms part of the extensive plains known as the High Plains of Hausaland (Adamu, 2000). The state is composed of undulating plains which generally rise gently from 360m in the northeast around Daura, to 600m around Funtua in the southwest. Generally, the state has two geological regions. The south and central parts of the state are underlain by crystalline rocks of the Basement Complex (from Funtua to Dutsin-Ma), but in the northern parts cretaceous sediments overlap the crystalline rocks (Maiunguwa, 2016).

The Katsina-Daura Plains lie at a lower base level than other parts of the state. Southwards of the Katsina-Daura plains, is the flat to gently undulating surface which is the end result of years of erosion action on the surface rock. In areas around Funtua and Dutsin-Ma, there are numerous Quartzitic and granitic hills which rise 60,200 meters above the surrounding plains. These hills are probably the result of the intrusion of older granites into the basement complex which have undergone long periods of denudation (Adamu, 2000; Maiunguwa, 2016). Katsina State with its semi-arid conditions, where environmental variability is a threat to asset accumulation, flexibility in livelihoods both within and beyond the natural resource sector is required. Livelihood diversification, based on using resources in scattered locations and mobility between these, is historically deep-rooted in many areas of the State (Maiunguwa, 2016).

Katsina State Natural Resources

The Federal Ministry for Solid Mineral Development (FMSMD, 2001) has produced an official inventory of 34 mineral types that are available in good quality and of commercial quantities in the country. Twelve of these minerals are found in Katsina State. Moreover, from the studies carried out by Danbaiwa Nigeria Ltd under KUPDECO (2018) identified 28 mineral commodities (including the 12 in the FMSMD list), but some of these minerals were concurrencies. But the commercial viability has not been proven, only for small scale local business they could be considered veritable entrepreneurial sources (Abu, 2006). There are also illegal and informal gemstone mining activities going on in many parts of the state, but with no determination to set-up small scale industries (Abu, 2006). The summary of minerals found in Katsina State are tabulated below: -.

Table 1: Katsina State Mineral Resources.

S/N	Mineral	Location	LGA	Progress	Uses	Remarks
1	Asbestos	Danbido	Faskari & Funtua	Detailed investigation by Geological Survey Dept (GSD).	Asphalt, tiles, plastics & paints	Reserve of 400t found
2	Ball Clay	Danja East	Danja/Bakori	Identified	Ceramics ware	Material to be tested for industrial suitability
3	Basalt	Runka	Safana	Located	Rockwool	Insignificant
4	Brick Clays	Jabiri, Kabomo, Kongolo,	Funtua, Bakori, Mai'adua,	Identified	Bricks	Large quantities available in many

		Dutsinma	Dutsinma			other LGAs
5	Nickel, Copper, Cobalt, Platinum, Vanadium, Chromite	Jibia, Danbido & Ung. M. Tanko	Jibia, Faskari & Funtua	Exploration by GSD	Steel refractory furnaces, tanning & electronics	Jibia areas most important
6	Diamonds	Kafur	Kafur	Surveyed by ABU, GSD & Diamond company of Sierra-Leone	Gemstone drill bits etc	Kimberlitic pipe identified.
7	Feldspar	Mairana & Mahuta	Kankia & Kafur	Identified	Ceramics & Glass	Need improvement
8	Granite	Many locations	All but Daura & Zango LGAs	Located by geological mapping	Constructions	Cutting / polishing in Birchi, Kurfi & Rimi
9	Graphite	N/W of Malumfashi	Kankara	Identified	Lead pencils foundry	Need improvement
10	Gravels	Stream courses	All LGAs especially Katsina	Mapped by GSD	Constructions	Highly used
11	Gold	Schist belt	Batsari, Safana, Faskari, Bakori & Malumfashi	Panning done at Bakori	Ornaments Currency	Mineralized zones identified
12	Limonite	Kafur	Kafur	Identified	Titanium dioxide for paints	Work to estimate the reserves at Kafur needed
13	Iron-ore	Rawayau	Kurfi	Identified	Iron & steel	Punctual occurrence
14	Kaolin	Dan marke Kabomo Dutsinma Wagini Kuka & Rimi	Kankara Bakori Dutsinma Batsari & Rimi	Work done in Kankara by GSD & NMC	Ceramics, paper, paints, plastics, cosmetics, toothpaste, pharmaceuticals	Processing at Kankara & Dutsinma
15	Laterite	Varied	Varied	Identified	Constructions	Used locally for building
16	Magnetite	Along streams	State wide	Identified	Source of iron	Punctual occurrence
17	Manganese	Tudun kudu Ung. M. Ayuba	Funtua & Bakori	Detailed work carried out by NSC	Alloys of iron, foundries & dry cell batteries	Need improvement
18	Marble	Kankara	Kankara	Identified	Chemical, metallurgical & building industries	Need more exploration
19	Migmatites	Varied	Most LGAs especially Funtua, Musawa, Kankia & Bindawa	Geological mapping	Constructions & Decorations	Need more exploration
20	Nickel	Found in association with asbestos at M/Tanko & Danbido	Faskari & Funtua	Detailed investigation by GSD.	Alloys	Need more exploration
21	Quartz & quartz sand	River areas especially in Jibia, Sandamu & Katsina	Jibia, Sandamu & Katsina	Identified	Glass, ceramics & Abrasives	Most suitable sites at Sandamu & Jibia
22	Quartzite	Within schist belt	Bakori, Batsari, Faskari & Malumfashi	Mapping by GSD & ABU	Constructions	Need improvement
23	Retile	Along river beds	All over the State	Identified	Source of Titanium dioxide for paint	Need more exploration
24	Serpentine	M/Tanko	Faskari	Work done by GSD	Decoration	Reserve estimates 31m tons by GSD
25	Tourmaline	S/E of Dutsinma	Safana	Mapped by GSD	Gemstone	Need more exploration
26	Tremolite	Mairana & S/E Funtua	Kankia & Funtua	Identified by GSD also mapped by ABU	Refractory	Need more exploration
27	Uranium	National Anomaly 1 in Daura region	Daura & Zango	Located with air-borne radio-metric survey	Strategic	Ground check commenced by the Nigerian Uranium Mining Coy (NUMCO) and abandoned

28	Vermiculite	Danmarke	Kankara	Mapped by GSD & ABU	Thermal & acoustic installations	Need more exploration
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Source: Abridge from: Adamu, 2000; MSMD, 2001; Abu, 2006.

Economic Importance of Natural Resources

The importance of natural resources could not be overemphasized. They are all materials or substances produced by the environment without any human interference, including sunlight, atmosphere, water, land (including minerals), vegetables (including trees) and animals, (Elizabeth, Emmanuel & Martha, 2014). From many of these natural resources, we can create man-made materials that can be used to generate wealth and reduce poverty, (IMPOFF, 2020). Vedantu, (2023) documents the various importance of these resources to include all but not limited to the following: Natural Capital; Energy supply; Food; Raw materials; Medicinal values; Shelter (housing infrastructure); Employment opportunities; Personal and National development; Ecosystem service.

Methodology

The research is empirical in nature and covers a period of six month for the identification, documentation and sharing

of knowledge among secondary school students in Katsina State. Reconnaissance survey was first conducted at Katsina Youth Craft Village (KYC), Mal-Soba International Goldsmith Works (MIGW) Fagge Kano and Kofar Mata Dyeing Center (KMDC) in Kano. During the study the researchers explored as they were introduced to materials, tools, machines, methods and processes of designing, fabrications, constructions and productions of materials using local resources. Samples of local craft materials were collected for exhibition and a video clip was produced. Step down training was organized and administered to 25 students each from Government Day Secondary School (GDSS) Birchi and Isa Kaita College of Education Demonstration Secondary School (IKCOEDSS) Dutsin-Ma to arouse their interest and encourage creativity in utilizing local resources to create a livelihood activity. Questionnaire was then applied on the students to elicit information about their interest on local craft, (table 2).

Table 2: School selected for step-down training on utilization of local resources.

	Name of School	No. of BSTT	Students	No. of Questionnaire
1	GDSS Birchi.	1	25	21
2	IKCOE Dem. School D/m.	1	25	21
3	Total	2	50	52

Source: Field Study2022.

Instrumentation

Training sessions were conducted at IKCOEDSS Dutsinma and GDSS Birchi using the condensed list of natural resources, their locations, uses and importance. This was followed by video on craft works from KYC, MIGW and KMDC and exhibition of collected materials products. After the intensive orientations questionnaire was then applied to the students and their mentors to elicit their response on identification of local craft, their perception, interest and or choice.

Findings of the Study

Craftsmanship skills are understood to be unique experiences in the use of hands and manipulative tools to produce functional and decorative objects using raw materials. This revolves around activities that deal with the skillful making of functional and decorative products by hand and local materials. It involves specialization in the making of products to earn a living. The questionnaire seeks from the respondents to identify any four community-based crafts available in the locality or those they are conversant with. From their responses the following crafts were identified, and presented in table 3 below.

Table 3: Identified Crafts and their Raw-materials.

Craft	Raw-material	Products
Metal work (fabrications)	Metal	Furniture, Constructions
Pottery	Clay	Pots
Basket making	Reed	Baskets
Dye works	Caustic soda	Cloths/ Garments
Cloth weaving	Cotton/wool	Textiles
Mat making	Marta plant	Domestic/Prayer mats
Ornaments work	Gold, Silver	Jewelry
Blacksmith	Metal, Metallic ore	Farm implements
Wood work (carpentry, joinery)	Timber	Furniture, Constructions
Wood curving	Tree stems	Domestic implements
Bead making	stones	Beads
Leather works	Animal skin	Domestic materials

Source: Field Study

A total of 12 local crafts were identified, the raw materials needed for each craft and materials produced. The respondents demonstrate an understanding that these crafts offer livelihood alternatives to the people engaged in the

work. The raw materials sources for most of the crafts are obtained within the locality, while the finished products end in the local markets. The products of local crafts were observed to be of different size, design and quality. There is

also a varying degree of market potential from one craft to the other. Modern industries were also observed to pose some challenges to the growth and developments of the identified crafts. However, with the use of some modern tools that guarantee some level of quality, good designs, and reflecting local environments, these crafts may not only prosper but could bring about a renaissance of our cultural heritage.

A careful examination of the identified crafts revealed that

Metal works (including welding, fabrication and mechanical repairs), Dyeing, Ornament works and Cloth weaving appears to be the most common and widespread. Table 4 illustrates occurrences as derived from the questionnaire. Also worthy of noting is the fact that all the identified crafts have to a varying degree engage significant numbers of people and provide them with some form of employment, income and satisfaction. Figures one and two illustrate further.

Table 4: Crafts, their Raw-materials and frequency.

Craft	Raw-material	Frequency	Percentage
Metal work (fabrications)	Metal	20	12.20
Pottery	Clay	08	4.88
Basket making	Reed	07	4.26
Dye works	Caustic soda	29	17.68
Cloth weaving	Cotton/wool	17	10.36
Mat making	Marta plant	09	5.49
Ornaments work	Gold, Silver	23	14.02
Blacksmith	Metal, Metallic ore	12	7.32
Wood work (carpentry, joinery)	Timber	16	9.76
Wood curving	Tree stems	08	4.88
Bead making	stones	03	1.83
Leather works	Animal skin	12	7.32
Total	All	1641	100.00

Source: Field Study

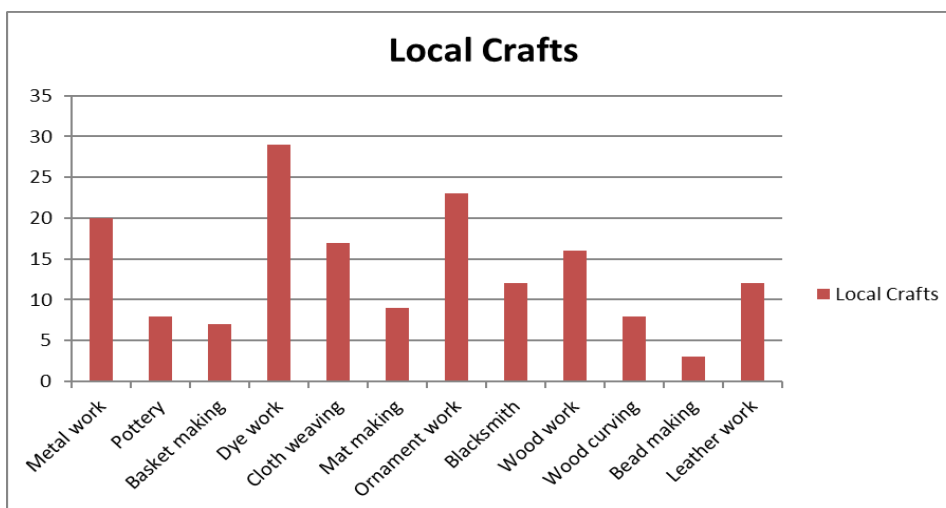


Fig. 1: Local craft occurrences. Source: Field Study 2023.

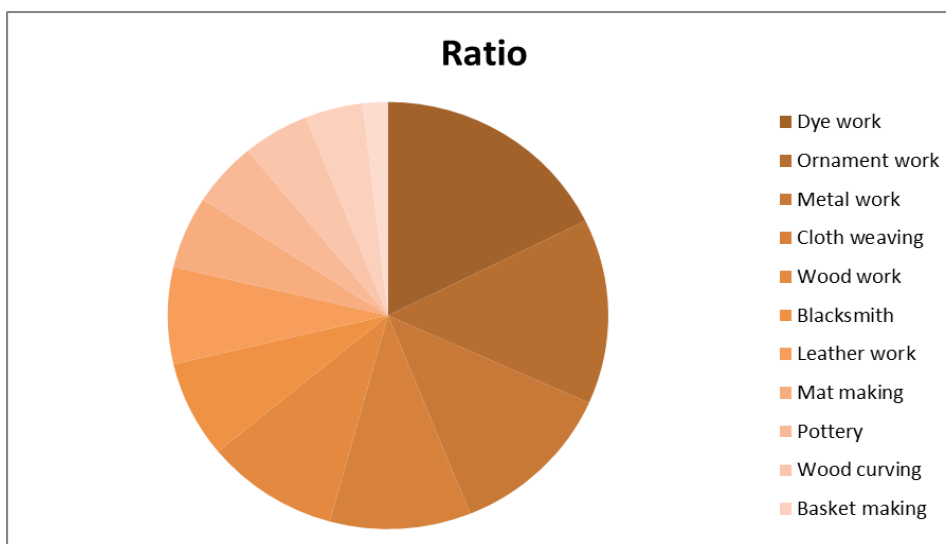


Fig.2: Ratio of Local Craft Occurrences. Source: Field Study 2022.

Conclusion

The essence of education at all levels and especially as enshrined in the Nigerian education system lies in its objectives and goals which the NPE outlined as to: Lay a sound basis for scientific and reflective thinking; Give citizens education that has a basis for effective participation in and contribution to the life of the society; Give students opportunities for developing manipulative skills that will enable them function effectively in the society within the limits of their capacity; and Provide the child with basic tools for further educational advancement included preparation for trades and crafts of the locality. These laudable objectives could be attained properly, through integration of practical life activities into daily teaching and learning processes. This study opines that if local crafts is integrated into teaching and learning the economic life of the country would be revamped – bringing about overall community and national growth and development.

Recommendations

1. However, the provision of sound and functional education in Katsina State and indeed Nigeria as a whole is subject to proper funding, provision of quality manpower, sufficient and relevant infrastructural and instructional facilities and well-motivated working force.
2. The current situation in our schools could also change if teachers improve their classrooms with exhibitions and excursions to explore more about the immediate environment.

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