

BASELINE ASSESSMENT OF VOCATIONAL AND CRAFT-MAKING SKILLS AMONG SECONDARY SCHOOL LEAVERS IN RIVERS STATE, NIGERIA: IMPLICATIONS FOR ENTREPRENEURSHIP TRAINING

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Abstract

Rising youth unemployment in Nigeria has intensified interest in craft-based vocational training as a pathway to self-employment. However, training programmes are frequently designed without a clear understanding of the competencies participants already possess. This study assessed the baseline level of craft-making, specifically toy-making, skills possessed by secondary school leavers in Rivers State, Nigeria, prior to any structured intervention, in order to inform entrepreneurship training design. A descriptive survey design was adopted. A sample of 415 secondary school leavers was selected from a population of 18,640 across six Local Government Areas using a multistage sampling procedure. Data were collected using a researcher-developed, expert-validated Toy Making Skills Assessment Scale (TMSAS) covering twelve practical skill domains, and were analysed using means and standard deviations. Results showed a grand mean of 1.97 (SD = 0.72), indicating an overall low level of pre-existing craft-making skill across all twelve competencies assessed. The lowest mean scores were recorded in stuffing toys evenly ($M = 1.79$), finishing work neatly ($M = 1.81$), and accurate pattern tracing ($M = 1.83$). The relatively small standard deviations indicated that low competence was fairly uniform across respondents rather than concentrated in a subgroup. The study concludes that secondary school leavers in Rivers State enter vocational programmes with minimal pre-existing craft competence. This underscores the need for entrepreneurship training that begins with foundational, hands-on skill-building rather than assuming baseline proficiency. Implications for the design of craft-based entrepreneurship curricula are discussed.

Keywords: baseline skills assessment, vocational education, craft-making skills, secondary school leavers, entrepreneurship training, needs assessment

Introduction

Youth unemployment remains one of the most pressing socioeconomic challenges confronting Nigeria, with secondary school leavers who do not proceed to tertiary education particularly vulnerable to prolonged joblessness. Vocational and craft-based skill acquisition programmes are widely promoted as a strategy for equipping this group with practical, income-generating competencies that support self-employment and reduce dependence on scarce formal-sector jobs. However, the effectiveness of such training depends substantially on how well programme design reflects participants' actual starting competencies. Training interventions planned without an empirical understanding of existing skill levels risk being pitched at an inappropriate level of complexity, either overestimating what participants can already do or failing to address the most fundamental gaps in practical technique.

A needs assessment that establishes baseline competence is therefore a critical, if sometimes overlooked, precursor to entrepreneurship and vocational training design. Systematic instructional design approaches emphasise that identifying the existing capabilities and gaps of a target population is foundational to developing training content, sequencing, and delivery methods appropriate to learners' needs (Richey & Klein, 2014). Within the specific context of craft-based enterprise, such as producing saleable items from low-cost or recycled materials, this baseline typically spans a range of discrete technical competencies: material selection, design interpretation, measurement and pattern work, cutting accuracy, assembly and finishing technique, creativity, and adherence to safety practice. Without empirical evidence on which of these competencies are weakest among a target population, training designers are left to guess at curriculum emphasis.

Rivers State, Nigeria offers a relevant context for such an assessment. The state combines rapid urbanisation and a sizeable youth population with an expanding network of government and privately run vocational, community, and youth development centres offering training in areas such as tailoring, arts and crafts, and related creative enterprises. Yet many of these centres continue to rely on generic instructional approaches that do not necessarily reflect the actual skill profile of the young people they serve. This study addressed that gap by empirically assessing the baseline level of craft-making (toy-making) skills possessed by secondary school leavers in Rivers

State prior to any structured training intervention, with the aim of drawing out implications for the design of craft-based entrepreneurship training.

Objectives of the Study

The study sought to:

1. determine the baseline level of craft-making (toy-making) skills possessed by secondary school leavers in Rivers State prior to intervention, across defined skill domains;
2. identify the specific competency areas in which baseline skill levels were weakest;
3. draw implications from the baseline findings for the design of craft-based entrepreneurship training programmes.

Needs Assessment as a Foundation for Vocational Training

Instructional design literature consistently identifies needs assessment, establishing what learners already know or can do relative to what a programme intends to teach, as a foundational stage that should precede content development (Richey & Klein, 2014). Where training is designed without this diagnostic step, programmes risk either duplicating competencies participants already possess, wasting scarce training time, or assuming a level of prior technique that does not exist, leaving fundamental gaps unaddressed. This logic underpins the “research and information gathering” phase common to systematic instructional development models such as that of Borg and Gall (2003), in which baseline data collection precedes the design of any instructional product or programme. Within such models, needs assessment is not a preliminary formality but the mechanism through which the content, sequence, and pacing of an entire training programme are calibrated to the realities of the target population, rather than to assumptions about it.

This diagnostic logic is reinforced by theories of how practical skill itself develops over time. Fitts and Posner’s (1967) influential three-stage model describes skill acquisition as progressing through a cognitive stage, marked by slow, error-prone, heavily instruction-dependent performance, through an associative stage of smoother, more consistent execution, and finally to an autonomous stage in which the skill can be performed with minimal conscious effort (Schmidt & Lee, 2020). A programme’s starting point should logically be pitched to whichever of these stages best characterises the target learners; training pitched at the associative or autonomous stage will be ineffective for learners who have not yet developed even cognitive-stage familiarity with a task, while training that dwells excessively on cognitive-stage instruction for learners who already possess some associative competence wastes limited training time. A structured baseline assessment is, in effect, the empirical tool by which a training designer locates learners along this progression before committing to a curriculum.

The value of this diagnostic step is compounded by what is known about how skill subsequently develops once training begins. Performance improves as a function of the amount and, more importantly, the quality of practice undertaken, with the largest gains typically concentrated early in training (Newell & Rosenbloom, 1981). However, this improvement is most efficiently achieved not through undifferentiated repetition but through deliberate practice, focused activity that specifically targets identified weaknesses and is accompanied by feedback (Ericsson & Pool, 2016). The implication for vocational and entrepreneurship training design is direct: deliberate practice cannot be properly targeted at weaknesses that have not first been identified, which makes a domain-level baseline assessment, rather than a single global measure of “skill”, a practical necessity for translating the general principle of needs assessment into an actionable, competency-specific training plan.

Vocational Skill Levels among Youth in Nigeria

Youth-focused vocational programmes in Nigeria typically target school leavers who have not proceeded to tertiary education, a group often assumed, sometimes without empirical verification, to possess at least rudimentary craft or manual skills from informal exposure. However, formal secondary education in many contexts places limited emphasis on sustained, hands-on technical practice, meaning that graduates entering vocational centres may in fact possess minimal prior competence in specific technical domains such as pattern work, precision cutting, or finishing technique, despite general familiarity with the broad idea of craft production. This gap between assumed and actual competence is playing out against a backdrop of persistent youth unemployment in Nigeria. Every year, large numbers of secondary school leavers enter the labour market with expectations of gainful employment or further education, yet limited tertiary opportunities, constrained job creation, and a mismatch between educational outcomes and labour market demand leave many unemployed or underemployed, with attendant consequences for poverty, dependency, and social insecurity. In response, governments, educational institutions, and development organisations have increasingly turned to skill acquisition programmes as a strategy for equipping young people to create employment for themselves and others, rather than relying solely on formal education to deliver salaried jobs. This shift places practical, hands-on vocational training, of the kind examined in this study, at the centre of national efforts to address youth unemployment, which makes

the accuracy of programme design, beginning with an honest baseline of what participants can actually do, a matter of practical policy significance rather than purely academic interest.

The developmental stage occupied by secondary school leavers is itself relevant to how such baseline gaps should be interpreted. This transitional period, marked by increasing maturity, identity exploration, and the beginning of independent decision-making about careers and livelihood, provides a window during which young people are actively refining problem-solving abilities and vocational interests (Shonkoff & Phillips, 2020). Physically and cognitively, secondary school leavers typically possess the coordination, dexterity, and abstract reasoning capacity required for intricate craft tasks such as pattern drafting, precision cutting, and hand-stitching; where baseline assessments reveal weak performance in these areas, the explanation is therefore more plausibly a lack of prior structured practice than any developmental limitation. This distinction matters for training design: a population that is developmentally ready but practically inexperienced calls for intensive, guided hands-on practice rather than remedial or simplified content.

The broader entrepreneurship and innovation literature reinforces the practical stakes of getting this baseline right. Radjou, Prabhu, and Ahuja (2022) describe frugal innovation as the creative use of simple, locally available resources, rather than expensive technology, to generate viable economic solutions, a framework directly applicable to craft enterprises built on low-cost or recycled materials such as fabric off-cuts. Realising this potential, however, depends on participants first acquiring the specific manual techniques needed to convert cheap raw material into saleable, well-finished products; creativity and resourcefulness in material selection cannot substitute for weak execution skill in cutting, assembly, and finishing. Similarly, observations that hand-produced craft items benefit from the flexibility and experimentation that manual skill affords (Trawick-Smith, Russell, & Swaminathan, 2022) presuppose a level of technical competence that, as this and related evidence suggests, cannot simply be assumed present among secondary school leavers entering vocational training.

Methodology

The study adopted a descriptive survey design, appropriate for systematically measuring and describing an existing condition, in this case, the pre-intervention level of craft-making skill among a defined population — without manipulation of variables. The study was conducted in Rivers State, Nigeria, across six Local Government Areas selected to represent the state's three senatorial districts: Obio/Akpor and Ikwerre (Rivers East); Ogba/Egbema/Ndoni and Ahoada East (Rivers West); and Khana and Tai (Rivers South-East). The population comprised 18,640 secondary school leavers enrolled in government-approved vocational and skill acquisition centres in the selected Local Government Areas. A sample of 415 respondents was determined using Cochran's (1977) formula for large populations, adjusted with the finite population correction formula and a 10% allowance for attrition, and selected through a multistage sampling procedure combining purposive selection of senatorial districts and training centres with simple random and proportionate sampling of individual participants. Baseline skill level was measured using the researcher-developed Toy Making Skills Assessment Scale (TMSAS), administered as a pre-test prior to any training exposure. The instrument assessed twelve practical performance indicators spanning major craft-skill domains: identification and selection of suitable materials, selection of appropriate designs, accurate pattern tracing, accurate cutting, correct hand-sewing/stitching technique, appropriate use of tools and equipment, even stuffing, neat attachment of accessories, neat finishing and secure stitching, creative combination of colours and materials, production of durable and attractive output, and observance of safety precautions. Each indicator was rated on a four-point scale (4 = Highly Competent, 3 = Competent, 2 = Moderately Competent, 1 = Not Competent). Data were analysed using mean and standard deviation. A decision rule was applied to interpret mean scores: 3.50–4.00 = High Skill, 2.50–3.49 = Moderate Skill, 1.50–2.49 = Low Skill, and 1.00–1.49 = Very Low Skill.

4. Results

Table 1 presents the mean and standard deviation of respondents' baseline craft-making (toy-making) skills prior to intervention.

Table 1: Mean and Standard Deviation on the Baseline Level of Craft-Making Skills Among Secondary School Leavers (N = 415)

S/N	Skill Domain	Mean ($\bar{x}$)	SD	Decision
1	Observing safety precautions during production	2.21	0.69	Low Skill
2	Combining colours and materials creatively	2.15	0.72	Low Skill
3	Identifying suitable materials for production	2.12	0.74	Low Skill
4	Using tools and equipment appropriately	2.08	0.71	Low Skill
5	Cutting fabric accurately following patterns	2.04	0.73	Low Skill
6	Selecting appropriate designs	1.98	0.70	Low Skill
7	Stitching parts correctly using hand-sewing technique	1.91	0.76	Low Skill

S/N	Skill Domain	Mean ($\bar{x}$)	SD	Decision
8	Fixing accessories (eyes, nose, ribbons, buttons) neatly	1.87	0.74	Low Skill
9	Producing durable and attractive output	1.86	0.73	Low Skill
10	Tracing patterns accurately	1.83	0.69	Low Skill
11	Finishing work with neat edges and secure stitches	1.81	0.70	Low Skill
12	Stuffing evenly to achieve desired shape	1.79	0.68	Low Skill
Grand Mean		1.97	0.72	Low Skill

Decision rule: 3.50–4.00 = High Skill; 2.50–3.49 = Moderate Skill; 1.50–2.49 = Low Skill; 1.00–1.49 = Very Low Skill.

The grand mean of 1.97 (SD = 0.72) indicates that respondents generally possessed a low level of craft-making skill prior to intervention, with every one of the twelve assessed competencies falling within the “Low Skill” band. The comparatively higher-scoring domains — observing safety precautions ($\bar{x}$ = 2.21), combining colours and materials creatively ($\bar{x}$ = 2.15), identifying suitable materials ($\bar{x}$ = 2.12), and using tools appropriately ($\bar{x}$ = 2.08) — nonetheless remained within the low-skill category. The weakest domains were stuffing evenly ($\bar{x}$ = 1.79), neat finishing ($\bar{x}$ = 1.81), accurate pattern tracing ($\bar{x}$ = 1.83), producing durable and attractive output ($\bar{x}$ = 1.86), and neatly fixing accessories ($\bar{x}$ = 1.87). The narrow range of standard deviations (0.68–0.76) indicates that low baseline competence was fairly consistent across respondents rather than driven by a small subgroup with markedly different experience.

Discussion

The findings confirm that secondary school leavers in Rivers State enter vocational and craft training with minimal pre-existing hands-on competence, a conclusion consistent with the broader observation that formal secondary schooling in many settings offers limited sustained, practical technical instruction, leaving school leavers reliant on whatever informal exposure they happen to have had. The pattern across domains is instructive rather than simply confirming an undifferentiated deficit: respondents scored relatively higher, though still low overall, on domains requiring judgement and general awareness (identifying suitable materials, observing safety precautions, combining colours creatively) than on domains requiring fine motor precision and technical sequencing (stuffing evenly, neat finishing, accurate pattern tracing, neat attachment of accessories). This distinction suggests that participants’ deficits are concentrated less in conceptual understanding of craft production and more in the physical, hands-on execution skills that typically require repeated guided practice to develop.

This pattern has direct implications for entrepreneurship training design. Programmes that assume participants already possess baseline manual dexterity in cutting, stitching, and finishing risk moving too quickly through foundational technique, leaving trainees unable to produce work of sufficient quality for sale. Consistent with instructional design principles that treat needs assessment as foundational to programme development (Richey & Klein, 2014), these results indicate that craft-based entrepreneurship curricula for this population should allocate proportionally greater time and structured, guided practice to precision-dependent execution skills, pattern tracing, stitching, stuffing, and finishing, rather than distributing instructional time evenly across all competency domains. The uniformly low standard deviations further suggest that, at intake, training centres can reasonably plan for a broadly similar starting point across participants rather than needing extensive differentiated instruction for subgroups with markedly different prior experience, at least on the dimensions measured here.

Conclusion

The study concludes that secondary school leavers in Rivers State enter vocational programmes with minimal pre-existing craft-making competence. While competence was generally low across all twelve skill domains assessed (Grand Mean = 1.97, SD = 0.72), the weakest areas were precision-dependent execution tasks such as stuffing toys evenly (M = 1.79), finishing work neatly (M = 1.81), and accurate pattern tracing (M = 1.83). The small standard deviations indicate that this low level of skill was consistent across respondents, not limited to a specific subgroup. These findings establish an empirical baseline and suggest that craft-based entrepreneurship training for this population should begin with foundational, hands-on instruction in basic technical execution before progressing to advanced production. Curricula should therefore prioritize step-by-step skill-building in core practical competencies rather than assume prior proficiency in material handling, neatness, or precision.

Recommendations

Based on the findings, it is recommended that:

1. Craft-based entrepreneurship training programmes for secondary school leavers begin with structured, repeated hands-on practice in foundational execution skills — pattern tracing, cutting, stitching, stuffing, and finishing — rather than assuming baseline manual proficiency.

2. Training centres conduct a brief diagnostic skills assessment at intake, using instruments such as the one developed in this study, to confirm the starting competency profile of each new cohort before finalising curriculum emphasis.
3. Curriculum developers allocate instructional time disproportionately toward the domains identified as weakest, while treating higher-scoring domains (material identification, safety awareness, creative combination) as areas for reinforcement rather than introduction.
4. Further research track how baseline competency profiles identified through this type of assessment translate into skill-acquisition outcomes following training, to validate the practical value of front-loading instruction toward the weakest domains.

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