AN ASSESSMENT OF WORKSHOP PRACTICES FOR SUSTAINABLE YOUTH EMPOWERMENT IN WELDING AND FABRICATION SMALL AND MEDIUM SCALE ENTERPRISES IN OGBA/EGBEMA/NDONI LOCAL GOVERNMENT AREA, RIVERS STATE

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ABSTRACT: This study assessed workshop practices for sustainable youth empowerment in welding and fabrication small and medium scale enterprises in Ogba/Egbema/Ndoni Local Government Area, Rivers State. Specifically, this study sought to assess safety, facility maintenance and record keeping practices for sustainable youth empowerment in welding and fabrication small and medium scale enterprises in Ogba/Egbema/Ndoni Local Government Area, Rivers State. This study adopted descriptive survey design. The population of this study comprised 15 mechanical technology lecturers and 29 mechanical technology final year students in Federal College of Education (Technical), Omoku which is the only tertiary institution in the study area. The population was manageable and was used for the study, therefore, there was no sampling method adopted. Three objectives were formulated, answered and tested at .05 level of significance. The instrument used for this study was a survey questionnaire. The instrument was face validated by two mechanical technology lecturers in Federal College of Education (Technical) Omoku and it was tested for reliability using Cronbach Alpha Reliability Coefficient method. A reliability value of .82 was obtained. Mean with Standard Deviation were used to answer the research questions while t-test statistical tools was used to test the hypotheses. This study found among others that wearing safety equipment, assessing the functionality of tools before usage, Provision of waste bin to gather tiny scraps in the workshop, lubricating of engines parts and tools, keeping tools away from moist environment, taking record of tools used and scheduled of maintenance, among others are workshop practices for sustainable youth empowerment in welding and fabrication small and medium scale enterprises in Ogba/Egbema/Ndoni Local Government Area. Therefore, it was recommended that local government leaders should as a matter of fact organize seminars for welding and fabrication artisans in the study area.

KEYWORDS: Small and Medium Scale Enterprise, Sustainable, Welding and Fabrication, Workshop Practice, Youth Empowerment
INTRODUCTION

In Nigeria, the issue of sustainable youth empowerment has been a major research area since youths make up a large population of the country. Youth empowerment could be described as an effort aimed at providing coping skills and an enabling environment for youths to live decent lives and contribute meaningfully to national development (Kolade, et al, 2014). On the other hand, sustainability could be described as maintaining wellbeing over a long, perhaps even an indefinite period (Kuhlman & Farrington, 2010). Therefore, sustainable youth empowerment could be described as an effort aimed at providing skills that will maintain youth’s wellbeing over a long period.

Basically, youth empowerment encompasses the acquisition of skills for establishment of Small and Medium Scale Enterprises (SMSE). Small and Medium Enterprises Development Agency of Nigeria (SMEDAN) (cited in Ikon and Chukwu, 2018) described SMSE based on small scale enterprises as businesses with ten to forty-nine people with an annual turnover of five to forty-nine million Naira while a medium scale enterprises that have fifty to one hundred and ninety-nine employees with a year turnover of fifty to four hundred and ninety-nine million Naira.

Meanwhile, SMSE has been noted as a sector that contributes largely to national economy. Kalanje (2002) opined that SMSE significantly contributes to the Nigerian economy, with about ten percent of total manufacturing output and seventy percent of industrial employment. Similarly, Owualah (cited in Abdullahi, et al, 2015) claimed that SMSE in the country account for forty percent of its output and at the same time account thirty percent to value added in the manufacturing sector. Also, Ogujiuba, et al (2004) established that in addition to increase in per capital income and output, SMSE help in the creation of employment opportunities, enhance regional economic balance through industrial dispersal and generally promotes effective resource utilization leading to sterilization of economic growth and development. However, Obi (2015) stated that some of the SMSE that are common in Nigeria include: cassava processing business, soap and pomade production, plastic manufacturing business, nail production, bakery and allied products, cloth weaving, block moulding and clay brick making, leather and animal skin processing and welding and fabrication, among others.

Despite the enormous contribution of SMSE in Nigeria, there are several factors that could lead to the death of SMSE. Agwu and Emeti (2014) stated that many factors have been identified as factors contributing to the premature death of SMSE. Key among them include: insufficient capital, irregular power supply, infrastructural inadequacies, lack of focus, inadequate market research, over-concentration on one or two markets for finished products, lack of succession plan, inexperience, lack of proper book keeping, lack of proper records or lack of any records at all, inability to separate business and family or personal finances, lack of business strategy, inability to distinguish between revenue and profit, inability to procure the right plant and machinery, inability to engage or employ the right calibre of staff, cut-throat competition, among others. In the case of welding and fabrication SMSE, considering the fact that tools and facilities are utilized, factors related to safety and facility maintenance are some of the factors hampering its growth.

Welding and Fabrication is an occupational process that joins materials, usually metals or thermoplastics, by causing coalescence (Tobolt in Majiyagbe, 2009). Through welding and
fabrication different metallic products are produced. The welding and fabrication processes that results in the production of metallic products are carried out in the workshop. Okorie in Ofonmbuk and Ekereobong (2012) described workshop as a place where the learners may experiment, test, construct, dismantle, repair, design, create, imagine, and study. Also, Amadike and Ochogba (2019) described workshop as a place or building where technology products are produced or repaired through technological manipulations.

Based on the activities that are carried out in the workshop, it is usually equipped with tools, equipment, machines, and others that could lead to accident if not properly handled. Meanwhile, accident in a workshop could delay production and may even lead to the dearth of a business. Other practices that may also affect production in the workshop include facility maintenance and record keeping. Therefore, SMSE owners are expected to exhibit best practices in the workshop so that activities carried out are not hampered. Some practices that are required of workshop users according to Nneji, et al (2010), include: the use of personal protective equipment, the appropriate use of tools, seeking permission before using any machine and the use of machine guards, and many more.

Several researches have been made with regards to welding and fabrication SMSE but much have not been done on workshop practices necessary for sustainability of welding and fabrication SMSE, which is a tool for self-reliance and reduction of unemployment. This is necessary considering the fact that Nigeria is going through a phase whereby the country is rated as one of the countries with high rate of unemployed youths. If this is not checked, it could metamorphose to high rate of insecurity. From the foregoing, the researchers deemed it fit to carry out a research to assess workshop practices for sustainable youth empowerment in welding and fabrication small and medium scale enterprises in Ogba/Egbema/Ndoni Local Government Area (ONELGA), Rivers State.

**Purpose of the Study**

This study assessed workshop practices for sustainable youth empowerment in welding and fabrication small and medium scale enterprises in Ogba/Egbema/Ndoni Local Government Area, Rivers State. Specifically, this study sought to:

1. Assess safety practices for sustainable youth empowerment in welding and fabrication small and medium scale enterprises in ONELGA, Rivers State.
2. Examine facility maintenance practices for sustainable youth empowerment in welding and fabrication small and medium scale enterprises in ONELGA, Rivers State.
3. Find out record keeping practices for sustainable youth empowerment in welding and fabrication small and medium scale enterprises in ONELGA, Rivers State.

**Research Questions**

1. What are the safety practices for sustainable youth empowerment in welding and fabrication small and medium scale enterprises in ONELGA, Rivers State?
2. What are the facility maintenance practices for sustainable youth empowerment in welding and fabrication small and medium scale enterprises in ONELGA, Rivers State?
3. What are the record keeping practices for sustainable youth empowerment in welding and fabrication small and medium scale enterprises in ONELGA, Rivers State?

**Hypotheses**

The following null hypotheses were formulated at .05 level of significance:

1. There was no significant difference between the mean responses of welding and fabrication lecturers and final year students in Federal College of Education (Technical) Omoku on the safety practices for sustainable youth empowerment in welding and fabrication small and medium scale enterprises in ONELGA, Rivers State.

2. There was no significant difference between the mean responses of welding and fabrication lecturers and final year students in Federal College of Education (Technical) Omoku on the facility maintenance practices for sustainable youth empowerment in welding and fabrication small and medium scale enterprises in ONELGA, Rivers State.

3. There was no significant difference between the mean responses of welding and fabrication lecturers and final year students in Federal College of Education (Technical) Omoku on the record keeping practices for sustainable youth empowerment in welding and fabrication small and medium scale enterprises in ONELGA, Rivers State.

**METHODOLOGY**

This study was carried out in ONELGA, Rivers State. Presently, there is only one tertiary institutions that is Federal College of Education (Technical) Omoku, that offers welding and fabrication. Therefore, this study was carried out in Federal College of Education (Technical) Omoku. The research design adopted for this study was descriptive survey design. It was descriptive because the researchers collected large sample of mechanical technology lecturers and final year students in Federal College of Education (Technical) Omoku for this study. The population of the study comprised all the mechanical technology lecturers and final year students in Federal College of Education (Technical) Omoku. The total population of these categories of respondents was 44 comprising 15 mechanical technology lecturers and 29 mechanical technology final year students. This population was manageable therefore the entire population was used for the study which means that there was no sampling method utilized and no sample size for this study. In order to elicit information from the respondents, research instrument such as questionnaire was used. This questionnaire was self made and it was tagged “Assessment of Workshop Practices for Sustainable Youth Empowerment in Welding and Fabrication Small and Medium Scale Enterprises” (AWPSYEWFSEMSE). It was structured in the pattern of Likert five point rating scale of Strongly Agree (SA-5), Agree (A-4), Undecided (U-3), Disagree (D-2) and Strongly Disagree (SD-1). Furthermore, the instrument was validated by two experts in mechanical technology education department based on spelling, the use of tenses, and appropriateness, among others. Also, the reliability of the instrument was established using Cronbach Alpha Reliability Coefficient. To achieve this, 8 mechanical technology lecturers and 8 final year mechanical technology final year students who were not part of the sample size were simple randomly selected, the instrument administered to them and their responses were correlated and yielded a reliability coefficient of .86 which was adequate for this study. After the reliability exercise, the instruments were
administered to the respondents by the researchers who also retrieved the instruments on the spot of administration. The entire instruments administered were retrieved and used for the analysis of this study. Mean and Standard Deviation were used to answer the research questions while t-test statistical tool was used to test the hypotheses. Mean values < 3.50 were rejected meaning that the mean value was disagreed while mean values ≥ 3.50 were accepted meaning that the mean value was agreed to workshop practice. Also, t-calculated (t-cal) less than t-critical (t-crit) was accepted meaning that the hypothesis was not significant while t-cal greater than t-crit was rejected meaning that the hypothesis was significant.

RESULTS AND FINDINGS

Research Question 1

What are the safety practices for sustainable youth empowerment in welding and fabrication small and medium scale enterprises in ONELGA, Rivers State?

Table 1: Mean Scores on Safety Practices for Sustainable Youth Empowerment in Welding and Fabrication Small and Medium Scale Enterprises

<table>
<thead>
<tr>
<th>Safety Practices</th>
<th>Lecturers (n=15)</th>
<th>Final Year Students (n=29)</th>
<th>DF =42</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>x̄ 1 SD1 % of A</td>
<td>Rank Decisión</td>
<td>x̄ 2 SD2 % of A</td>
</tr>
<tr>
<td>Wearing of goggles to protect the eyes from rays</td>
<td>3.60 1.24 80</td>
<td>6th Agree</td>
<td>4.44 .87 82.7</td>
</tr>
<tr>
<td>Wearing of hand gloves to prevent accident</td>
<td>4.33 1.29 80</td>
<td>1st Agree</td>
<td>4.48 .78 82.7</td>
</tr>
<tr>
<td>Proper clamping of workpiece</td>
<td>4.20 1.37 80</td>
<td>3rd Agree</td>
<td>4.55 .78 82.7</td>
</tr>
<tr>
<td>Assessing of tools before usage</td>
<td>3.86 .99 46.7</td>
<td>5th Agree</td>
<td>4.21 1.18 72.4</td>
</tr>
<tr>
<td>Provision of waste bin to gather tiny scraps in the workshop</td>
<td>4.33 .62 93.3</td>
<td>1st Agree</td>
<td>4.52 .83 79.3</td>
</tr>
<tr>
<td>Wearing of safety boot</td>
<td>4.13 .92 66.7</td>
<td>4th Agree</td>
<td>4.62 .73 86.2</td>
</tr>
<tr>
<td>Grand Mean &amp; SD</td>
<td>4.08 1.07</td>
<td></td>
<td>4.47 .86</td>
</tr>
</tbody>
</table>

Source: Field Survey, 2020, % of A (Percentage of Acceptance)

Table 1 on safety practices for sustainable youth empowerment in welding and fabrication small and medium scale enterprises in ONELGA, Rivers State shows that lecturers and final year students agreed that all the items highlighted are safety practices. This is based on the grand mean scores of 4.08 and 4.47 respectively, which is above 3.50 that was earlier stated as the acceptable mean. Also, the grand mean score for each of the items show a high level of acceptance for each of the items by each group. Furthermore, the closeness in the Standard
Deviation for the two groups which is 1.07 and .86 shows homogeneity in their responses. This finding is in line with Nneji, Okon, Nwachukwu, David and Ogbuanya (2010) that found that workshop users should inculcate the following practices: the use of personal protective equipment, the appropriate use of tools, seeking permission before using any machine and the use of machine guards, and many more.

**Research Question 2**

What are the facility maintenance practices for sustainable youth empowerment in welding and fabrication small scale enterprises in ONELGA, Rivers State?

**Table 2: Mean Scores on Facility Maintenance Practices for Sustainable Youth Empowerment in Welding and Fabrication Small Scale Enterprises**

<table>
<thead>
<tr>
<th>Facility Maintenance Practices</th>
<th>Lecturers (n=15)</th>
<th>Final Year Students (n=29)</th>
<th>DF =42</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\bar{x}_1$</td>
<td>SD$_1$</td>
<td>% of A</td>
</tr>
<tr>
<td>Lubricating tools regularly</td>
<td>4.73</td>
<td>.59</td>
<td>92.3</td>
</tr>
<tr>
<td>Tightening of loosed nuts to prevent damage</td>
<td>4.60</td>
<td>.91</td>
<td>86.7</td>
</tr>
<tr>
<td>Avoiding the use of tools for wrong purposes</td>
<td>4.67</td>
<td>.72</td>
<td>86.7</td>
</tr>
<tr>
<td>Keeping tools away from moist environment</td>
<td>4.47</td>
<td>1.25</td>
<td>86.7</td>
</tr>
<tr>
<td>Avoiding dropping of tools on the floor to prevent contact with sand</td>
<td>4.53</td>
<td>.99</td>
<td>93.3</td>
</tr>
<tr>
<td>Checking the functionality of tools before usage</td>
<td>4.80</td>
<td>.56</td>
<td>93.4</td>
</tr>
<tr>
<td>Carrying out maintenance as soon as tools/facilities start producing signs of damage</td>
<td>4.53</td>
<td>1.13</td>
<td>86.7</td>
</tr>
<tr>
<td>Adhering to manuals in the use of tools</td>
<td>4.80</td>
<td>.41</td>
<td>100</td>
</tr>
<tr>
<td>Carrying out scheduled maintenance on tools regularly</td>
<td>4.47</td>
<td>.99</td>
<td>80.0</td>
</tr>
<tr>
<td>Changing of worn-out parts of tools</td>
<td>4.47</td>
<td>1.06</td>
<td>86.6</td>
</tr>
<tr>
<td><strong>Grand Mean &amp; SD</strong></td>
<td><strong>4.61 .86</strong></td>
<td></td>
<td><strong>4.54 .93</strong></td>
</tr>
</tbody>
</table>
Table 2 on facility maintenance practices for sustainable youth empowerment in welding and fabrication small and medium scale enterprises in ONELGA, Rivers State shows that lecturers and final year students agreed that all the items highlighted are facility maintenance practices. This is based on the grand mean scores of 4.61 and 4.54 respectively, which is above 3.50 that was earlier stated as the acceptable mean. Also, the grand mean score for each of the items shows a high level of acceptance for each of the items by each group. Furthermore, the closeness in the Standard Deviation for the two groups which is .86 and .93 shows homogeneity in their responses. This finding is in line with Nneji, Okon, Nwachukwu, David and Ogbuguanya (2010) that found that workshop users should inculcate the following practices: the use of personal protective equipment, the appropriate use of tools, seeking permission before using any machine and the use of machine guards, and many more.

Research Question 3

What are the record keeping practices for sustainable youth empowerment in welding and fabrication small scale enterprises in ONELGA, Rivers State?

Table 3 on record keeping practices for sustainable youth empowerment in welding and fabrication small scale enterprises in ONELGA, Rivers State shows that lecturers and final year students agreed that all the items highlighted are record keeping practices. This is based on the grand mean scores of 4.37 and 4.87 respectively, which is above 3.50 that was earlier stated as the acceptable mean. Also, the grand mean score for each of the items shows a high level of acceptance for each of the items by each group. This finding is in line with Agwu and Emeti (2014) that stated that many factors have been
identified as factors contributing to the premature death of SMEs which include: insufficient capital, irregular power supply, infrastructural inadequacies, lack of focus, inadequate market research, over-concentration on one or two markets for finished products, lack of succession plan, inexperience, lack of proper book keeping, lack of proper records or lack of any records at all, inability to separate business and family or personal finances, lack of business strategy, inability to distinguish between revenue and profit, inability to procure the right plant and machinery, inability to engage or employ the right calibre of staff, cut-throat competition, among others.

Hypothesis 1

There was no significant difference between the mean responses of welding and fabrication lecturers and final year students in Federal College of Education (Technical) Omoku on the safety practices for sustainable youth empowerment in welding and fabrication small and medium scale enterprises in ONELGA, Rivers State.

Table 4: t-Test Analysis on Safety Practices for Sustainable Youth Empowerment in Welding and Fabrication Small and Medium Scale Enterprises

<table>
<thead>
<tr>
<th>Category</th>
<th>n</th>
<th>$\bar{x}$</th>
<th>SD</th>
<th>DF</th>
<th>t-cal</th>
<th>t-crit</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecturers</td>
<td>15</td>
<td>4.08</td>
<td>1.07</td>
<td>42</td>
<td>1.22</td>
<td>2.01</td>
<td>Not Significant</td>
</tr>
<tr>
<td>Final Year Students</td>
<td>29</td>
<td>4.47</td>
<td>.86</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Researchers’ field survey, 2020  Accept $H0$ if $t$-cal $< t$-crit; Otherwise Reject

Table 4 shows that lecturers’ mean and standard deviation scores were 4.08 and 1.07 respectively, while final year students’ mean and standard deviation scores were 4.47 and 0.86 respectively. The t-cal value was 1.22, while the t-crit was 2.01 with DF = 42 at .05 level of significance for two tailed test. This result shows that t-cal was less than t-crit, which means that the null hypothesis was accepted. Thus, there was no significant difference between the mean responses of welding and fabrication lecturers and final year students in Federal College of Education (Technical) Omoku on the safety practices for sustainable youth empowerment in welding and fabrication small and medium scale enterprises in ONELGA, Rivers State.

Hypothesis 2

There was no significant difference between the mean responses of welding and fabrication lecturers and final year students in Federal College of Education (Technical) Omoku on facility maintenance practices for sustainable youth empowerment in welding and fabrication small and medium scale enterprises in ONELGA, Rivers State.
Table 5: t-Test Analysis on Facility Maintenance Practices for Sustainable Youth Empowerment in Welding and Fabrication Small and Medium Scale Enterprises

<table>
<thead>
<tr>
<th>Category</th>
<th>n</th>
<th>$\bar{x}$</th>
<th>SD</th>
<th>DF</th>
<th>t-cal</th>
<th>t-crit</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecturers</td>
<td>15</td>
<td>4.61</td>
<td>.86</td>
<td></td>
<td>.25</td>
<td>2.01</td>
<td>Not Significant</td>
</tr>
<tr>
<td>Final Year Students</td>
<td>29</td>
<td>4.54</td>
<td>.93</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Researchers’ field survey, 2020 Accept Ho if t-cal < t-crit; Otherwise Reject

Table 5 shows that lecturers’ mean and standard deviation scores were 4.61 and .86 respectively, while final year students’ mean and standard deviation scores were 4.54 and .93 respectively. The t-cal value was .25, while the t-crit was 2.01 with DF = 42 at .05 level of significance for two tailed test. This result shows that t-cal was less than t-crit, which means that the null hypothesis was accepted. Thus, there was no significant difference between the mean responses of welding and fabrication lecturers and final year students in Federal College of Education (Technical) Omoku on facility maintenance practices for sustainable youth empowerment in welding and fabrication small and medium scale enterprises in ONELGA, Rivers State.

Hypothesis 3

There was no significant difference between the mean responses of welding and fabrication lecturers and final year students in Federal College of Education (Technical) Omoku on record keeping practices for sustainable youth empowerment in welding and fabrication small and medium scale enterprises in ONELGA, Rivers State.

Table 6: t-Test Analysis on Record Keeping Practices for Sustainable Youth Empowerment in Welding and Fabrication Small and Medium Scale Enterprises

<table>
<thead>
<tr>
<th>Category</th>
<th>n</th>
<th>$\bar{x}$</th>
<th>SD</th>
<th>DF</th>
<th>t-cal</th>
<th>t-crit</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecturers</td>
<td>15</td>
<td>4.37</td>
<td>.80</td>
<td></td>
<td>2.22</td>
<td>2.01</td>
<td>Significant</td>
</tr>
<tr>
<td>Final Year Students</td>
<td>29</td>
<td>4.87</td>
<td>.48</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 6 shows that lecturers’ mean and standard deviation scores were 4.37 and .80 respectively, while final year students’ mean and standard deviation scores were 4.87 and .48 respectively. The t-cal value was 2.22, while the t-crit was 2.01 with DF = 42 at .05 level of significance for two tailed test. This result shows that t-cal was less than t-crit, which means that the null hypothesis was rejected. Thus, there was a significant difference between the mean responses of welding and fabrication lecturers and final year students in Federal College of Education (Technical) Omoku on record keeping practices for sustainable youth empowerment in welding and fabrication small and medium scale enterprises in ONELGA, Rivers State.
CONCLUSIONS

This study concludes that welding and fabrication SMSE could be sustained for youth empowerment with the adherence to safety workshop practices such as wearing of goggle, hand gloves and safety boots, proper clamping of workpiece, provision of waste bin to gather tiny scraps in the workshop. Apart from adhering to safety workshop practices welding and fabrication SMSE could be sustained for youth empowerment with the adherence to facility maintenance practices such as lubricating of tools regularly, tightening of loosened nuts, avoiding the use of tools for wrong purposes, keeping tools away from moist environment, checking the functionality of tools before usage, adhering, among others. Furthermore, other workshop practices includes keeping record of purchased tools, keeping records of damaged tools, recording of tools taken for outside work, keeping record of income and expenditure, among others.

RECOMMENDATIONS

Based on the findings of this study, the following recommendations were made:

1. Local Government Area Chairman should organize seminar for welding and fabrication artisans on how to observe safety practices in their workshop so as to prevent accident that may take them off business.

2. Welding and fabrication association in ONELGA in addition to their normal meetings should invite experts that will lecture members on how to maintain facilities in their workshops in order to sustain the life span of tools and facilities thereby cutting cost of running their business.

3. Welding and fabrication association should also invite experts during their meetings to teach members on how to keep good records that will help in sustaining their business.

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