

# **A Study on Curriculum Development Based on Vocational Ability Structure With Special Reference to TVS SACL**

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**Abstract:** *The purpose of this study is to develop a vocational education curriculum that is based on the vocational ability structure of new joiners, in order to improve their employability and job performance. Curriculum Development Based on Vocational Ability Structure (CUDBAS) is an approach to developing educational curricula that focuses on identifying the specific vocational abilities required for success in a particular career field. This approach aims to align the curriculum with the actual demands of the job market, ensuring that new joiners are adequately prepared with the skills and knowledge needed to excel in their chosen profession.*

## **1.INTRODUCTION**

CURRICULUM DEVELOPMENT BASED ON VOCATIONAL ABILITY STRUCTURE (CUDBAS) is a framework for designing and developing Vocational Education and Training (VET) programs. It is based on the notion that vocational abilities are a combination of knowledge, skills, and attitudes that are needed to perform a specific job or occupation. CUDBAS is designed to ensure that VET programs are relevant and effective in meeting the needs of both learners and the job market. It involves the identification of the vocational abilities required for a specific occupation, the development of learning outcomes based on those abilities, and the selection of appropriate instructional strategies and assessment methods to achieve those outcomes. Curriculum development based on vocational ability structure refers to the process of designing programs that align with the specific skills and knowledge needed for a particular vocational career. This approach recognizes that each vocational career requires a unique set of abilities, competencies, and knowledge that must be developed and mastered for successful performance in that career. Designing a curriculum based on the vocational ability structure is an essential component of vocational education and training. It provides students with the knowledge, skills, and competencies needed to succeed in their chosen career and helps ensure that they are prepared to meet the demands of the ever-changing workforce. **For example**, an automotive technology curriculum might include courses in engine repair, brake systems, and electrical diagnostics.

- Identify the required skills and knowledge.
- Design the curriculum around the identified skills.
- Incorporate industry standards.

## **2. Review of literature**

**Introduction:** CUDBAS (Curriculum Development Method Based on Ability Structure) system devised in **1989** by **Professor Mori Kazuo** (formerly a professor at Polytechnic University in Japan, and at Tokushima University's Centre for University Extension). **Review:** **William D. Camp and Shaoxiong Zhang (1995)** In their article, they describe how CUDBAS can be used to develop a curriculum for the hospitality industry, with a focus on developing the specific competencies and skills required for success in the industry. **Guo et al. (2017)** the authors developed a curriculum based on the vocational ability structure of hotel management new joiners. The study found that the curriculum helped to improve new joiners' professional knowledge and practical skills, as well as their ability to solve problems in the workplace. **Xie et al. (2019)** the authors developed a curriculum model based on the vocational ability structure of nursing new joiners. The study found that the curriculum design helped to improve new joiners' clinical reasoning ability and their ability to apply theory to practice. The authors also noted that the curriculum development process should involve collaboration between educators and practitioners to ensure that the curriculum aligns with the needs of the industry. **Research Gap:** One potential research gap in curriculum development based on vocational ability structure is the lack of studies that comprehensively analyze the specific vocational abilities required for various professions and the extent to which existing curricula effectively develop those abilities. While some studies have examined the skills and competencies required for specific vocations, there is still a need for more comprehensive analyses that consider the full range of abilities needed for success in those professions. There is a need for more research that examines the relationship between vocational ability structure and curriculum development, as well as the

various factors that influence the development of effective vocational curricula. Such research could help to inform the design of more effective vocational education programs that meet the needs of employers.

### 3. RESEARCH METHODOLOGY

**Introduction:** Methodology is the study of research methods. However, the term can also refer to the methods themselves or to the philosophical discussion of associated background assumptions. A method is a structured procedure for bringing about a certain goal. In the context of research, this goal is usually to discover new knowledge or to verify pre-existing knowledge claims. This normally involves various steps, like choosing a sample, collecting data from this sample, and interpreting this data. The study of methods involves a detailed description and analysis of these processes.

**Statement of the problem:**

- 1 Lack of access to resources: The company may not provide the necessary resources, such as equipment, software, or data, for the project to be completed successfully.
- 2 Difficulty obtaining data: The company may have strict policies around data privacy or may not have the necessary data available, making it difficult for the student to collect and analyze the required data for their project.
- 3 Limited guidance and mentorship: The student may not receive sufficient guidance and mentorship from the company supervisors, making it challenging to complete the project successfully.

**Scope of Study:**

- 1) Identification of industry requirements: The project involves identifying the specific requirements and competencies needed by various industries and occupations. This may involve consultation with industry experts, labor market analysis, and job task analysis.
- 2) Design of a competency-based curriculum: Based on the industry requirements, the project will involve designing a curriculum that is focused on developing the necessary competencies and skills for a particular occupation. This will involve breaking down the competencies into smaller, measurable units, and developing learning outcomes that align with these competencies.
- 3) Development of assessment tools: The project will also involve the development of assessment tools, such as tests, quizzes, and performance evaluations, that measure new joiners' progress in achieving the identified competencies and learning outcomes.

**Objective of Study:**

- 1) Identifying the competencies and skills required for success in a specific occupation: CUDBAS aims to identify the specific competencies and skills that are necessary for individuals to succeed in their chosen profession.
- 2) Designing a curriculum that is based on the vocational ability structure: CUDBAS aims to design a curriculum that is aligned with the vocational ability structure, which defines the specific competencies and skills required for a particular occupation.
- 3) Developing learning outcomes that align with industry requirements: CUDBAS aims to develop learning outcomes that are aligned with the requirements of the job market, ensuring that new joiners are equipped with the skills and knowledge needed to succeed in their chosen profession.

**Research Design:** Research design refers to the overall plan or strategy that a researcher uses to answer their research question or test their hypothesis. It is the framework that guides the collection and analysis of data and includes decisions about the type of study to be conducted, the sampling strategy, the data collection methods, and the data analysis techniques.

- Percentage analysis
- Regression
- One way ANOVA
- Chi-square analysis

**Scale Development & Data Collection:** the process of scale development and data collection requires careful planning, attention to detail, and a focus on the research question. Adequate time should be allocated for these steps to ensure that the data collected is reliable, valid, and relevant to the research question.

1. Literature review
2. Survey
3. Questionnaire
4. Google forms

### 4. DATA ANALYSIS & INTERPRETATION

**Percentage analysis:** Percentage analysis can be used to analyze both categorical and numerical data. For categorical data, such as responses to a multiple-choice question, percentage analysis can help identify the most common responses and any patterns or trends in the data. For numerical data, such as income or age, percentage analysis can help identify the proportion of respondents who fall within different ranges or categories.

**Table 1.** Gender of the employees

PARTICULARS	RESPONDENTS	PERCENTAGE
Male	46	57%
Female	34	43%
TOTAL	80	100%

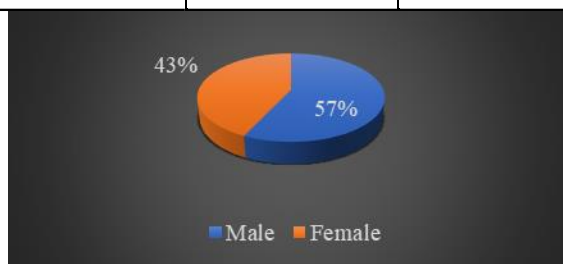


FIGURE 1. gender of the employees

The above pie chart depicts that 57% of the respondents are Male and 43% of the respondents are Female. Thus, many of the respondents are Male.

TABLE 2. age of the employees

PARTICULARS	RESPONDENTS	PERCENTAGE
18 - 30 years old	68	85%
31 - 45 years old	8	10%
46 years or older	4	5%
TOTAL	80	100%

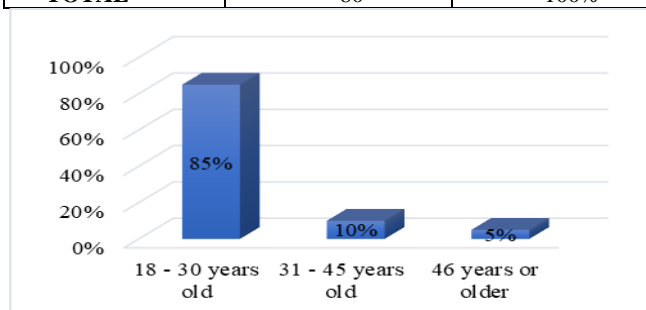


FIGURE 2. age of the employees

The above pie chart depicts that 85% respondents are 18 - 30 years old, 10% respondents are 31 – 45 years old and 5% are 46 years or older. Thus, the majority of respondents are 18 – 30 years old.

One-way ANOVA: Analysis of Variance (ANOVA) is a statistical formula used to compare variances across the means (or average) of different groups. A range of scenarios use it to determine if there is any difference between the means of different groups. **Null Hypothesis:** There is a no significant difference between those heard about the CUDBAS and effectiveness of the topic. **Alternate Hypothesis:** There is a significant difference between those heard about the CUDBAS and effectiveness of the topic.

TABLE 3. ANOVA: Single Factor

Groups	Count	Sum	Average	Variance
Heard cudbas	80	115	1.4375	0.249209
EFFECTIVE	80	139	1.7375	0.271994

TABLE 4. ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	3.6	1	3.6	13.81	0.00028	3.9009
Within Groups	41.17	158	0.260			
Total	44.77	159				

From the above table it is inferred that the p value is 0.00028 is less than 0.05. Hence, Null hypothesis is rejected, and Alternate hypothesis is accepted. Therefore, there is a significant difference between those heard about the CUDBAS and effectiveness of the CUDBAS (Curriculum Development Based on vocational Ability Structure)

## 5. FINDINGS, SUGGESTIONS & CONCLUSION

## Findings:

- 57% of the respondents are Male.
- Customer focus: The company has a strong focus on understanding customer needs and preferences, and this is reflected in its product portfolio.
- Innovation: Company is known for its innovative products and technologies. The company has a dedicated R&D centre that is focused on developing new technologies and products, and it has won several awards for its innovative designs and technologies.

**Suggestions:** Developing a curriculum based on vocational ability structure requires careful planning and attention to the specific needs and goals of the learners.

1. **Identify the vocational abilities required for the specific field:** Identify the abilities that are required for the learners to be successful in the field they are interested in. This can be done by conducting a thorough analysis of the job requirements and skills needed.
2. **Create a competency-based curriculum:** A competency-based curriculum should be created that is aligned with the identified vocational abilities. This will ensure that the learners are gaining the skills and knowledge necessary to perform the job effectively.
3. **Incorporate hands-on learning opportunities:** Vocational abilities are best learned through hands-on experience. The curriculum should incorporate opportunities for the learners to practice and apply the skills they are learning in a practical setting.

## 6. CONCLUSION

Developing a curriculum based on vocational ability structure can be a highly effective way to prepare employees and students for successful careers in their chosen field. This approach involves identifying the specific skills, knowledge, and competencies required for a particular job or industry, and designing a curriculum that focuses on developing those abilities in students. By tailoring the curriculum to the needs of the workforce, employees can gain the practical experience and knowledge they need to succeed in their careers, while also developing the critical thinking and problem-solving skills that are necessary for success in any field. Effective curriculum development based on vocational ability structure requires collaboration between educators and industry professionals to ensure that the curriculum aligns with the needs of the workforce.

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