The Inclusion of Indigenous Knowledge and skills in Technical and Vocational Education and Training curriculum of Bale and West Arsi Zones TVET's Oromia Regional state, Ethiopia

A Research

Submitted by

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DECLARATION

(FOR RESEARCH PROPOSAL)

Researchers: -We, the undersigned, solemnly declare that this RESEARCH/PROJECT PROPOSAL entitled "The Inclusion of Indigenous Knowledge Skills in Technical Vocational Education and Training Colleges of Bale and West Arsi Zones Oromia Regional state, Ethiopia", is our own ORIGINAL work submitted to Madda Walabu University ARCETT Vice President Office for fund. We further declare that this RESEARCH report does not contain any part of any research work which has been previously conducted or published at Madda Walabu University or anywhere else. We are aware that we will be held accountable if we provide incorrect, deceptive, or mischievous information.

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IK: Indigenous Knowledge

IKS: Indigenous Knowledge skills

QMS: quality management system

TVET: Technical vocational Education and Training

UN: United Nation

UNESCO: United Nation Education Science and Cultural Organization

WB: World Bank

THE INCLUSION OF INDIGENOUS KNOWLEDGE AND SKILL IN TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING CURRICULUM OF BALE AND WEST ARSI ZONES TVET'S OROMIA REGIONAL STATE, ETHIOPIA

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Abstract

Presently, there are many studies conducted on the area of Indigenous knowledge but there is limited study on the inclusion of indigenous knowledge (IK) in the Technical Vocational Educational, and Training (TVET) Colleges in Ethiopia particularly in Oromiya Region Bale and West Arsi Zones. So, the purpose of this study is to assess the inclusion of Indigenous Knowledge and skills in Technical and Vocational Education and Training colleges of Bale and West Arsi Zones Oromiya Regional state, Ethiopia. In doing so, purposive and simple random sampling techniques were employed in order to determine the sample size. The study sample was composing of 334 TVET college trainees, 117 TVET trainers, 6 TVET College deans and three experts at zonal and regional were selected. Questionnaire, Interview, FGD and Document Analysis were considered as the major data gathering tools. The data collected through questionnaire was analyzed by using descriptive statistics like frequency, percentage and standard deviation and Independent T-test from inferential statistics. Qualitative data through Interview and FGD also analyzed through, thematic analysis. Accordingly, the finding of analysis showed that, Integrating IK and skills in to TVET is important to transmit the knowledge and skill to the current and coming generations in a well-documented manner. Even if, no sub-topics or paragraph are devoted to indigenous knowledge and skill in the training curriculum, some TVET college trainers are attempting to integrate IK and skill in to their course by inviting trainees to visit nearby companies and using trainee experience. But, lack of documented indigenous knowledge and skills materials for training, lack of proper technical support from stakeholders, lack of budget, shortage of machineries, frequently changed of industry package/curriculum/COC education were the major challenges that hinder the integration of IK and skill in to TVET college curriculum. It was recommended that, the government and others stake holders including university have to support IK and skill with new technologies to make use out of it. It is also suggested if the curriculum is clearly demarcated and prescribed the scope of indigenous knowledge and skill as courses in TVET college curriculum.

Keywords: Inclusion, Indigenous knowledge, Skill, Technical and Vocational Education and Training

CHAPTER ONE

INTRODUCTION

1.1. Background of the Study

Indigenous knowledge is a collection of experience, customs, norms, values, traditions, cultures, languages, socio-economic activities, political systems, ways of life, political governance systems, ecological preservations and environmental management, and spiritual rituals. That “indigenous peoples around the world have preserved distinctive understanding, rooted in cultural experience, that guide relation among human, non-human, and other than human beings” (Emeagwali & Dei, 2014).

Indigenous knowledge as part of the life experience or cumulative and complex knowledge and know how, practices and representations that are maintained and developed by local people have great significance for the life of the society/community. Indigenous knowledge is unique, traditional, local knowledge that exists within and is developed around the specific conditions of people indigenous to a particular geographic area in a particular period (UNESCO, 2012). Separating indigenous knowledge from its socio-cultural context becomes meaningless and dangerous, as it may lead to misleading interpretations and misuse of this knowledge (UNESCO, 2009).

Indigenous knowledge is linked to the local culture and history of a particular community and holds significant value for problem-solving strategies in indigenous organizations and local communities. Indigenous knowledge is used in these communities for economic development; health; the preservation of culture, and political transformation, all of which lead to poverty reduction (Kayombo, 2013).

In the today's debated issues on the indigenous knowledge and skills, educating and teaching youth in their own culture and languages is prime important. Vocational education and its awareness are increasing day by day. To overcome the problem of the unemployment and to balance between supply and demand of skilled manpower, demand of vocational education is increasing. However, there are various students who have their own indigenous knowledge and skills, but they don't have such vocational courses (Teena &| Punnam, 2020).

To equip these problems as Laura and Comyn (2015) states in their work, university education and technical training are essential for addressing these issues because they increase individual earnings and improve access to basic education, which is essential for laying the groundwork for entry into higher education. They also increase access to post-primary education, especially secondary, technical training, and university.

There is still much to be done in developed as well as developing countries to ensure that TVET and skills systems adequately and carefully take steps to develop the core skills that so substantially improve the employability of students, jobseekers, and workers who need to improve investment and growth for effective creation of high-quality jobs in both the formal and informal sectors to enable increased absorption of skilled and educated labor force and productivity.

TVET institutions are being transformed into centers for technology capability, accumulation, and transfer in order to provide a consistent framework for all system actors and stakeholders and to provide them with the tools they need to manage and implement a quality management system (QMS). More importantly, technical vocational education helps to promote a self-employment culture, supports job growth in the economy, especially in emerging regions, and develops the human resources needed to effectively manage and implement TVET in accordance with policy in order to produce competent, engaged, and productive workers (MoE, 2008).

However, there are many factors that influence TVET graduate trainees to pursue their major fields of training as entrepreneurs, which have made a significant contribution to the socioeconomic development of the nation (Tesfaye, 2010). These trainees also need to be interested in their fields of training and have enough skill to be competent and confident in the workplace.

Since the development of the qualifications framework, the polarization between the skilled and non-skilled labor force, as well as between graduates who are unemployed and those who are employed, has been growing. Technical education and vocational training (TVET) serves as a key strategy for increasing the employability of the global labor force, particularly in developing countries like Ethiopia where the majority of the labor force is unskilled (Gangoso, 2023).

In order to address the unemployment problem and preserve indigenous knowledge and culture in order to progress the country's employment market, it is crucial to revitalize indigenous knowledge

and skill practices. Teena and Punnam (2020) argue that the educational system should be career-oriented and indigenous-based in order to help students from rural backgrounds or from any distinct culture grasp the modern educational system. Local communities have relevant and appropriate information and resources that can be used and deployed to create resilient local architectural designs employing traditional knowledge management systems, which can result in appropriate and relevant infrastructural development that takes cognizance (Tafadzw, 2023).

When TVET is properly applied and supported by indigenous knowledge, it will considerably increase women's empowerment and function as a useful tool in lowering women's poverty (Bose & Adisa, 2021).

In the words of Teshome (2019), incorporating indigenous knowledge paves the way for the evolution of social relations that western-dominated knowledge neglected and disregarded. He claimed that it is essential to develop a way to include indigenous knowledge into science education. Rahel (2017) asserts that indigenous knowledge transmission techniques tend to be energetic, more hands-on, participatory, and exploratory, and that they foster the higher order thinking stage of creativity. The major goal of indigenous talent transfer strategies is the naturalization of skills. Indigenous methods also influence attitudes and promote feelings of worth and respect. IKS is also an effective active teaching-learning approach that offers lots of opportunity for grasping complexity. This calls for an examination of the use of indigenous knowledge.

1.2. Statement of the Problem

It is well known that TVET contributes significantly to society's development of human resources in three key ways: by meeting the demand for human capital, expanding employment opportunities for citizens and raising their standard of living, and motivating citizens to pursue further education and training (Schokland Pro). In addition, TVET equips individuals with the abilities required to raise production, income levels, and access to employment prospects. Furthermore, they define TVET as an educational and training activity that is primarily provided to participants in order to aid in their acquisition of the skills, knowledge, and comprehension necessary for employment in a certain occupation or group of occupations.

Further, Rauner and Maclean (2008) pointed out that the competitiveness of national economies and businesses is considered as being significantly improved or maintained by vocational training. Indigenous peoples have historically engaged in TVET as artisanal, blacksmith, pottery, and weaving labor (Lemecha, 2017).The formal education systems that are currently in place in many African nations, as well as in certain other regions of the world, were acquired from Western epistemology that spread after colonialism. Because of this, the current VE systems in many African nations fail to connect with the needs of the local populace. These gaps include, among other things, the link to the indigenous knowledge and pedagogies that the majority of African communities have long embraced (Tusiime, 2015).

The expansion of vocational education is a requirement for reviving indigenous knowledge and skill practices in any nation's educational system. To combat the unemployment issue, indigenous knowledge and culture must be preserved in society. Adopting it in vocational education is necessary. Adopting educational policies and procedures that enhance students' knowledge and abilities is necessary to improve the socioeconomic situation of the nation. It can be challenging for students from rural areas or from any particular culture to comprehend a modern educational system when they are expected to adhere to a particular culture and system (Teena & Punnam, 2020).

Numerous research on technical education and career training have been done. The majority of them emphasize the value of TVET for reducing poverty and fostering economic prosperity. For instance, according to Teena and Punnam (2020), indigenous knowledge systems are currently a hot topic in international discourses as a means of addressing social, economic, and political issues. The role of vocational education in empowering women in India (Meel and Gehlot, 2020), Indigenous Knowledge and Vocational Education:- Marginalisation of Traditional Medicinal Treatments in Rwandan (Chika, et al.,2021), The Contribution of Technical and Vocational Education and Training (TVET) to Poverty Reduction (Sergut, 2007). In addition, Teshome (2019) studied the integration of indigenous knowledge from Ethiopia and knowledge from around the world in Addis Abeba.

As far as the researchers reading concerned, there is no research that conducted on the integration of indigenous knowledge and skills in to technical and vocational education and training in the study area. For these reasons, the researchers are initiated to conduct the study on the integration

of indigenous knowledge skills in technical vocational education and training colleges in the Bale and West Arsi Zones of Oromiya region, Ethiopia. Accordingly, the study was attempt to provide answers to the following basic research questions.

1. To what extent TVET trainers and trainees perceived the importance of integrating Indigenous Knowledge and skill in to TVET College curriculum?
2. How do TVET trainers integrate Indigenous Knowledge and skill in to TVET?
3. What are the challenges that TVET trainers and experts face while integrating IK and skills into TVET?

1.3. Objectives of the Study

1.3.1. General Objective

The overall objective of this study is to assess the inclusion of Indigenous Knowledge and skills in to Technical and Vocational Education and Training curriculum of Bale and West Arsi Zones.

1.3.2 Specific Objectives

1. To analyze the extent of TVET trainers' and trainees' perception on the importance of integrating Indigenous Knowledge and skill in to TVET curriculum?
2. To realize how TVET teachers incorporate Indigenous Knowledge and skill in to TVET?
3. To identify the challenges that TVET trainers and experts face while integrating IK and skills into TVET?

1.4. Significance of the Study

The following significance is associated with this study:- this study is very significant for curriculum developers of the general education system of the Bale and West Arsi Zones in general and TVET experts in particular to incorporate indigenous knowledge skills in to TVET college curriculum so that the new generation can get access to indigenous knowledge skills of their society/community. It could also help decision-makers to take into account the current challenges as an input. Additionally, the study will offer some suggestions for academics, researchers and students to look more closely at the issue. Finally, it is significant for further researchers to use it as an input. The finding of the study will reach to those stated bodies through providing the copies of the report.

1.5. Delimitation of the Study

It is difficult to include all TVET colleges those found in all parts of our country in these single studies. So, to make the study manageable and effective by considering the available time and financial resources, it was delimited geographically to Bale and West Arsi. Besides, conceptually this study was delimited to assessing how Indigenous Knowledge and skills are incorporated into Technical and Vocational Education and Training colleges. The trainees, trainers, and college deans of two zones and experts at regional level were only included as participants of this study. Furthermore, the study will be restricted to only a few chosen colleges and institutions in order to keep it manageable.

1.6.Limitation of the study

A study cannot exist without constraints. In this study, the following obstacles had to be overcome while we conducted our research starting from preparing the proposal to producing the final report. Firstly, the transportation cost was insufficient and other considerations such as the budget allotted for focus group discussions and key informant interviews was the major challenges during data collection. However, attempts were made by substituting the budget allocated for researcher's perduim. Secondly, the mandate of curriculum design was to federal and its modification at regional level. Because of this, the researchers didn't get the detail data related with the integration of IK and skill in TVET curriculum from the horse's mouth. Lastly, a small number of respondents' refuse to submit the data

1.7. Operational Definitions of Key Terms

Education: the act or process of imparting or acquiring general knowledge, developing the powers of reasoning and judgment.

Indigenous: Groups of people whose social, cultural and economic conditions distinguish them from other sections of the national communities, and whose status is regulated wholly or partially by their own customs or traditions or by special laws or regulations.

Indigenous Knowledge: local or traditional knowledge that indigenous people have brought down with them from earlier times via the oral tradition.

Skill: is the learned ability to act with determined results with good execution often within a given amount of time, energy, or both.

Technical Vocational Education and Training: aspects of the educational process involving, the study of technologies and related sciences, and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupants

Vocational Education: is a job or career, so something vocational is related to a specific kind of work. There are vocational schools that train people for jobs, which might be what you think of when you read the word vocational, though it could describe anything related to working.

CHAPTER TWO

2. REVIEW OF RELATED LITERATURE

Introduction

The literature review section is discussed under the following heading and sub-headings.

2.1. Basic concepts of Indigenous Knowledge and Technical and Vocational Education and training

2.1.1. Basic concepts of Indigenous Knowledge

In order for education to successfully achieve its goals in any location, the pre-existing knowledge of its host community must be acknowledged and incorporated in curricula as well as other educational practices. Education is generally accepted as a process through which individuals are able to acquire knowledge for specific goals that will be beneficial to themselves and society. According to Dewey, education should try to help communities pass on their knowledge to younger generations (Esiobu, Chidi, & Vedaste, 2021).

Indigenous knowledge, also known as local or traditional knowledge, is that which indigenous people have carried with them from earlier periods through the oral tradition and is referred to by different names in different contexts (World Bank, 1988). The notions of IK are defined in various ways by various academics. Indigenous knowledge (IK), according to Sam (2014), is the culmination of millennia of close connection between Indigenous populations and a particular territory. It includes practices, beliefs, understandings, insights, and experiences.

According to Salas and Tillmann (2014) Indigenous Knowledge (IK) differs from cosmopolitan, urban, or scientific knowledge in that those who produce and use it are members of rural cultures with enduring, close links to their regional ecosystems. It can't just be referred to as traditional because that word carries a stigma of conservatism and resistance to technological advancement. Indigenous knowledge should be acknowledged as consisting of various systems for creation, dissemination, and use, as well as epistemologies based on unique scientific principles that indigenous peoples have developed over thousands of years of empirical research and experimentation.

Furthermore, according to World Bank (2004), IK is local knowledge that is specific to each culture or civilization and forms the basis for local-level decisions in a variety of activities in communities, including agriculture, health care, and food preparation, education, and natural resource management. Providing communities with problem-solving techniques; frequently held by communities rather than by individuals (World Bank, 2004).

2.1.2. Indigenous knowledge in Africa

As a response to the western view that the promoters of African indigenous knowledge have not been able to provide a clear definition and conceptualisation of their own as to what const tutes "knowledge", a number of scholars such as Lander (2000) and Chavunduka (1995) have argued that western worldview of "knowledge" has since its introduction in Africa and other non-western societies, lacked an understanding of the holistic nature and approach of non-western ways of knowing and knowledge production. Nkondo (2012) argues that the western perception of African indigenous knowledge as mere repetition of practices without any theory to explain them is a depiction of western cultural and intellectual arrogance. in the perception of African scholars, a traditional healer who is able to cure a particular disease using specific herbs has the knowledge and theory of the plant species and their characteristics

2.1.3. African Indigenous Knowledge Systems and Higher Education

Education, and higher education in particular, in Africa is still too Eurocentric, that is, it is still dominated by European worldviews. This is exemplified by the teaching of social sciences in African higher education institutions, where social theory is still entrenched in the methods, concerns, beliefs and experiences of Western Europe and North America. its irrelevance to Africa lies on the fact that it is quite inappropriate to attempt to fit African social history and social thought into the confines of a social and political thought that reflects the organisation of Europe 300 years ago (Schutte, 1999 in Hassan & Yonah, 2013).

Eurocentric discourse has greatly influenced research, teaching and learning of social sciences in higher education in Africa: the principal focus of developments in social thought continues to originate from the work of American, British, French and German scholars. The implication of this is that higher educational institutions in Africa have reduced themselves to the reproduction of the intellectual outputs of social thinkers of western countries, including their theories and

methodologies of selection of research problem priorities. As a result of this, there is little attention given to African indigenous literary and philosophical traditions because they tend to be viewed as primitive and unscientific and hence not proper sources for social theory and research development. This is accompanied by the inability of African social scientists to generate their own indigenous concepts, definitions, theories and methods which could guide the intellectual development in their research and academic fields. As a result of lack of confidence in this respect; western research models and theories including concepts are uncritically adopted and applied in African communities which render them irrelevant to local settings. Smith (2002) argues that application of Eurocentric social theories and perspectives in African conditions characterized by poverty tend to be elitist because they focus on the concerns of dominant groups in society hence marginalize the views and concerns of underprivileged social groups.

2.1.4. Challenges of indigenous knowledge

There are different challenges of indigenous knowledge. Among the others, lack of documentation and promotion of adaptations and improvements in traditional systems which increase productivity and efficiency, decreasing faith of many people in their own knowledge and practices in the face of aggressive promotion of modern methods by both commercial interests, as well as the government systems (Emer, 1996).

Eyong (2007) described that, colonialism, economic challenge, the effect of globalization, and modernization are some challenges of IK. He also explained colonialism largely inhibited the development of indigenous technology in Africa and de-stabilized some of the existing processes of technical growth and the indigenous manufacturing capability was deliberately undermined. Likewise, Grenier (2009) describes though IK is lost naturally as techniques and tools are modified or fall out of use, the recent and current rate of loss is accelerating because of rapid population growth, growth of international markets, educational systems, environmental degradation, and development processes pressures related to rapid modernization and cultural homogenization.

2.2. Basic concepts of Technical Vocational Education and training

Technical Vocational Education and Training (TVET) is a broad term that refers to all aspects of the educational process, including general education as well as the study of technologies and

related sciences as well as the acquisition of practical skills, attitudes, and knowledge pertaining to occupations in various spheres of economic and social life (UNESCO, 2002).As various studies on the value of TVET have been undertaken. With its numerous goals, which vary from country to country, it empowers individuals not only with technical and vocational skills but also with a wide range of knowledge, skills, and attitudes that are now acknowledged as essential for meaningful participation in work and life (Shirley, Okwelle, P, & Chukwumaijem, 2014).

TVET offers a way to fill skills gaps, boost individual productivity and incomes in both the formal and informal industries, as well as for businesses and the overall economy. The purpose of TVET is rational in that it provides people with a wide range of awareness that is necessary for meaningful involvement in the workplace and daily life (Noor, 2015). This awareness includes both technical and vocational abilities.

2.2.1. TVET system in sub-Saharan countries

In 2007, the African Union drafted the Strategy to Revitalize Technical and Vocational Education and Training in Africa (African Union, 2007). The report states that there is a fresh awareness among many African countries of the critical role that TVET plays in the national development. The objectives of the strategy are to revitalize and modernize TVET in Africa and to transform it into mainstream activity for African Youth. For the discussion on the lessons learned with implementing TVET, with particular focus on Africa (Kingombe, 2011).

2.2.2. TVET strategies in Ethiopia

Traditionally, Technical and Vocational Education and Training (TVET) has been fragmented and delivered by different providers at various qualification levels. Public TVET institutions under the education sector were concentrating on producing middle level technical graduates at post Grade 10 level. In parallel with this, public and private companies have had their own TVET programmes, as have NGOs and private TVET providers. Meanwhile, in non-formal TVET programmes, public institutions, NGOs, and private schools offer employment-oriented TVET programmes to various target groups, including school leavers, people in employment, school drop outs and marginalized groups in the labour market. Unlike formal TVET, these programmes are not yet systematically delivered.

Informal (on the-job) training is widespread, but due to the absence of a systematic assessment and certification system there are currently no mechanisms to recognize informal occupational

learning. Traditional apprenticeships in the small and micro enterprise sector constitute another presumably important, yet entirely un-researched, training environment. Public and private training schemes planned to produce administrative and health personnel to the market in sufficient quantity. Agriculture TVET programmes, which have been massively expanded during recent years, are disconnected structurally with non-agriculture TVET programmes.

2.2.3. Curriculum Development and Preparation of Training, Teaching and Learning Materials in TVET

With the introduction of occupational standards, new outcome based curricula need accordingly be developed by the respective regions. Each TVET provider may National Technical & Vocational Education and Training Strategy and should develop its own curricula based on the specific needs of its target groups and in compliance with the respective occupational standard. Regional TVET authorities shall see to it and assist that the new curricula have been employed in both public and private TVET institutes operating in the region.

It is acknowledged, however, that many of the existing TVET providers are not yet in a position to develop high quality curricula and TVET programmes on their own. Substantial capacity building and support (provided by the TVET system) will be necessary to enable TVET providers to transform the occupational standards into appropriate modular and outcome-based curricula. The same applies to the development of new training, teaching and learning materials. To capacitate TVET providers and to ensure that TVET programmes, curricula as well as training, teaching and learning materials are of high standards, respective manuals will be provided and the development of model curricula and of related teaching, training and learning materials be supported. Support will be made accessible to all TVET providers in Ethiopia (MoE, 2008).

2.3. The Relationship between Indigenous Knowledge and TVET

'Indigenous knowledge' is a buzzword that has become popular recently and is part of a challenge to 'western' education, among other things. Indigenous knowledge proponents emphasize the importance of their field in antiracist, antisexist, and post colonialist discourse in general, and in terms of the "African Renaissance" in particular, in addition to asserting that the study of indigenous knowledge has a significant impact on education and educational curriculum (Kai, 2004).

Indigenous knowledge, according to Paul (2006), is often contrasted with and, up until recently, underestimated in comparison to the world scientific knowledge. Collaboration between locals and scientists working on development can be hampered by this. Science has universal theoretical aims, whereas indigenous knowledge is related to specific cultural circumstances. While scientific practice is more deductive, with a "strong" model and accepted methods of study, indigenous practice is more inductive and has a "weak" picture of the world that is frequently totally unknown to development outsiders.

2.5. Importance of Indigenous knowledge

There are two basic reasons why indigenous knowledge is important, first and foremost, the contribution of indigenous knowledge to local empowerment and development, increase the self-sufficiency and strength self-determination (Ulluwishewa, 1993). Utilizing IK in research and management plans gives it legitimacy and credibility in the eyes of both local people and outside scientists, increasing cultural pride and thus motivation to solve local problems with local ingenuity and resources. Second, indigenous people can provide valuable input about the local environment and how to effectively manage its natural resources. Outside interest in indigenous knowledge systems has been fueled by the recent worldwide ecological crisis and the realization that its causes lie partly in the overexploitation of natural resources based on inappropriate attitudes and technologies. Scientists now recognize that indigenous people have managed the environments in which they have lived for generations, often without significantly damaging local ecologies (Matowanyika, 1994 cited in world bank, 1998).

2.6. The Importance of Integrating Indigenous Knowledge with Scientific Knowledge

The indigenous knowledge system and the international knowledge system have differences and similarities because they are knowledge systems created within particular societies, and combining the two is crucial for the sustainability of education and the vigorous application of appropriate technologies that are crucial for overall development (Teshome, 2019). According to him, the integration of the local knowledge system and the global knowledge system complements the current educational system in many ways. The utilization of information that has been present in society for a very long time, such as traditional medicine, agriculture, nutrition, environmental

protection, and other facets of life that allow the local people to exist for millennia, is facilitated by indigenous people. It began to play a crucial part in promoting stability, economic expansion, and long-term education.

According to Teshome and Sobha (2017), the indigenous knowledge system is all-inclusive and can enhance the educational experience in schools. It is also rich in knowledge that has been developed through experiences that have been accumulated over a long period of time. Integrating indigenous knowledge with international knowledge is the process of incorporating indigenous information into the existing body of international knowledge, which is mostly created in academic institutions and research labs.

2.7. Challenges face Technical Vocational Education and training

According to a study done in India, the TVET system is struggling with multiple laws, certificates, and curricula: The job market's demand-supply imbalance and ongoing lack of adequate training for open positions, Poor view and public opinion that parents want their kids to work as office assistants or administrative workers, Government agencies and regulatory bodies' lack of coordination a poor academic-industry connection as a result of the low employment rates that job providers are looking for, lacking a current curriculum that meets the demands of the sector, lack of trained educators, Lack of contemporary machinery, raw resources, and adequate infrastructure is a barrier to learning during training. a lack of independence, a lack of financial and administrative autonomy, and responsible behavior (Subhita & Sapna, 2020)

CHAPTER THREE

3. RESEARCH DESIGN AND METHODOLOGY

3.1. Description of the study area

This research was conducted at two zones which are known as Bale and West Arsi found in south east of Oromiya region of Ethiopia. From this two Zones, six districts which have TVET Colleges are the main target to conduct this research. These six districts are known as Goro, Agarfa and Dallo Mena from Bale Zone, and Shala, Gedab Asasa and Negelle Arsi from West Arsi Zone. The detail description of study area is indicated on the map as follows.

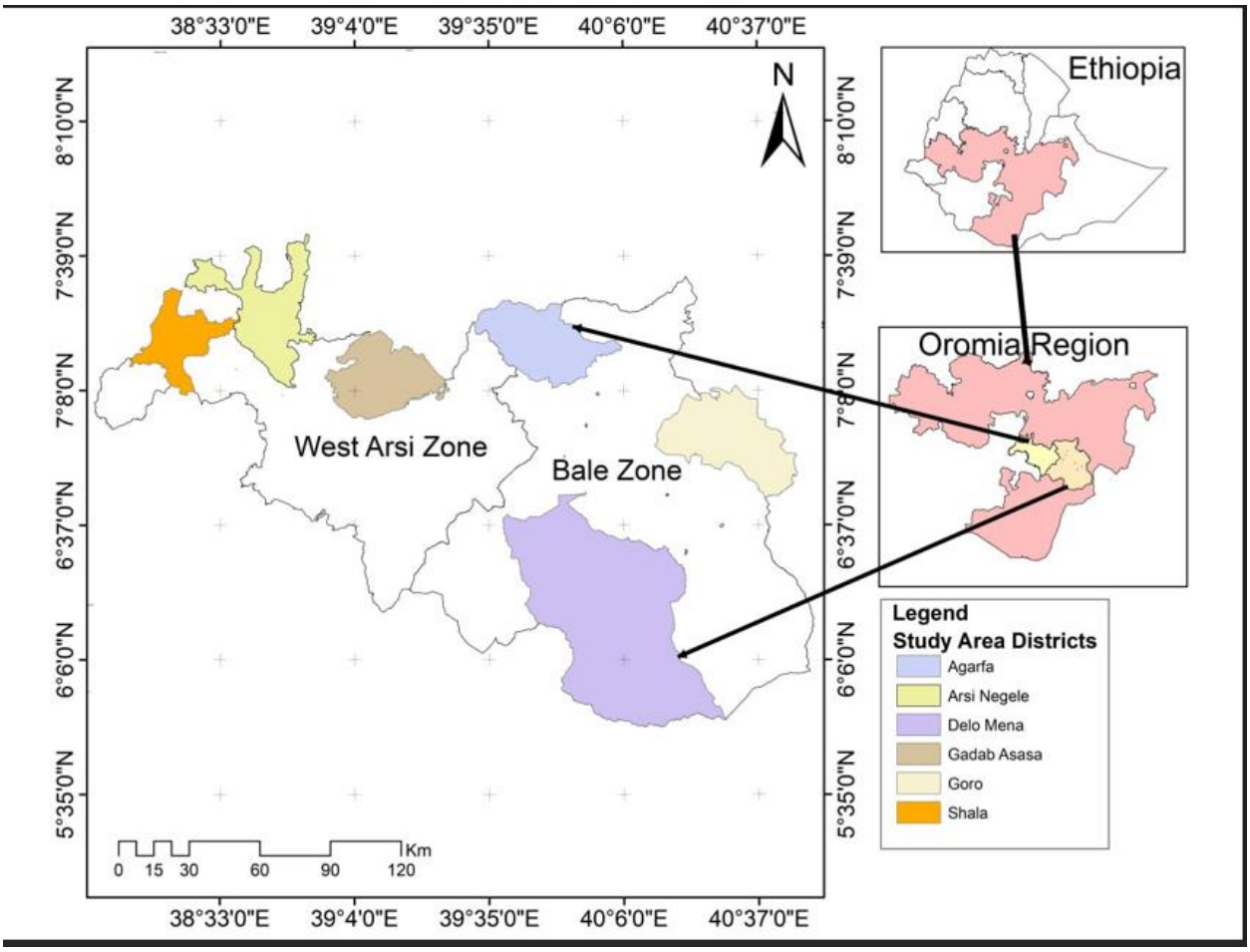

Figure1. Study area map

3.2. Research Paradigm

Research paradigm is a basic set of beliefs that guide action (Guba, 1990, cited in Creswell, 2012, p. 35). Creswell (2007) divided research paradigms into four main types. Those are Advocacy/participatory, social constructivism, post-positivism, and pragmatism. Among those, the researchers employed pragmatism research paradigms. Because, it allows the researchers to choose the methods, techniques, and procedures of the research that best meet their needs and purposes.

3.3. Research Method

In this study, mixed method (qualitative and quantitative) with convergent parallel approach was used to generate and analyze data obtained from diverse groups of respondents. Mixed methods research is a good design to use if the researcher is sought to build on the strengths of both quantitative and qualitative data (Creswell, 2012). The quantitative method helps the researcher to analyze the quantitative data obtained through the use of a questionnaire with close-ended and open ended question items whereas the qualitative method helps to analyze the data obtained through the use of semi-structured interview and focus group discussion (FGD).

3.4. Research Design

A research design is a plan, structure and strategy of investigation so conceived as to obtain answers to research questions or problems. The plan is the complete scheme or programme of the research (Ranjit, 2011). As to Creswell (2014), research design for mixed methods falls into six categories namely, convergent parallel, explanatory sequential, exploratory sequential, embedded design, transformative design, and multiphase design. Among those, the researchers of this study were used concurrent triangulation design. In this design, the investigator typically collects both forms of data at roughly the same time and then integrates the information in the interpretation of the overall results. The researchers were first report the quantitative statistical results and then discuss the qualitative findings (e.g., themes) that either confirm or disconfirm the statistical results. By taking this into account, the researchers believed that a concurrent research design was appropriate for this study.

3.5. Type, and Sources of Data

In this study, both primary and secondary sources of data were used. The researchers were gathered primary data from the selected respondents through the questionnaire, key informant interview and focus group discussions from Trainers, trainees, deans and experts of TVET at Zone and Regional level. Collecting data from these sources provide the researchers an opportunity of getting reliable data and a chance for the interviewer and interviewees to have better interaction and clarification of issues. Besides, the study was employed document analysis of secondary data from the TVET college curriculum and policy framework.

3.6. Target Population, Sampling Technique and Sample Size Determination

3.5.1. Target Population

Population can be defined as the study of objects, which may be individuals, groups, organizations, human products and events or the conditions to which they are exposed or the group of individuals having one characteristic that distinguishes them from other groups Creswell, John W.(2012) . In this study, the study population were; College Deans, Trainers and Trainees of Goro, Agerfa, Dallo Buna, Asasa, Negelle and Shala TVET colleges. In addition, TVET experts at Bale and West Arsi Zones were framed as population of this study. The researchers have believed that the above-mentioned bodies that have an active role in the college activities can provide appropriate information for the study.

3.5.2. Sampling technique and sample size determination

The need for sampling in this study result from the desire to obtain external validity and also to eliminate problems associated with most researches such as population size, cost in terms of finance, time, greater speed and accuracy as well as accessibility to the population. In planning any investigation we must decide how many people needed to be studied in order to answer the study objectives.

The feasible sample size is determined by the availability of resources. It is also important to remember that resources are not only needed to collect the information, but also to analyze it. Hence, out of the total eleven (11) colleges found in two zones (Goro,Agarfa and Dalo Buna from

Bale and Gadeb Asasa, Negelle Arsi and Shala from West Arsi were selected purposively. Because, as the researchers have got data from the general coordinators of two zones, six colleges that are (were)framed as target sample of this study have enough resource and human powers than others.

In doing so, the sample size of trainers and trainees were determined by using Yamane formula. This formula was used to calculate the sample sizes shown below. A 95% confidence level and P = 0.5 are assumed.

Teachers (trainers) $n = \frac{N}{1+N(e)^2} = n = \frac{166}{1+166(0.05)^2} = \frac{166}{1.415} = 117$

Students (Trainees') $n = \frac{N}{1+N(e)^2} = n = \frac{2036}{1+2036(0.05)^2} = \frac{2036}{6.09} = 334$

Where ***n*** = Sample Size; ***N*** = Target population and ***e*** = Margin of error desired (0.05). So that the required sample size (*n*) will be 451: Therefore, the sample size for TVET trainees' were calculated = 334 and the sample size for TVET trainers were calculated =117 and 6 (Six) college deans and 2(two) experts of two zones which results, = 8 were selected purposively to participate in the study. On the other hand, to get sample size of TVET trainers and trainees from each college, simple random sampling technique was used as shown here under.

No	Name of TVET colleges	Population size		Sample size		Sampling technique
		Teachers	Students	Teachers	Students	
1	Agarfa TVET college	23	94	16	16	Simple random sampling
2	Dello Mena TVET College	11	110	8	18	Simple random sampling
3	Goro TVET College	14	34	10	6	Simple random sampling
4	Gedab Asasa TVET College	44	386	31	63	Simple random sampling
5	Negele Arsi TVET College	59	1209	42	198	Simple random sampling
6	Shalla TVET College	4	203	3	33	Simple random sampling
	Total	166	2036	**117**	334	

Table 1: Population, sample size and sampling Technique

3.6 Method of Data Collection

To achieve the objective of this study both qualitative and quantitative data collection instrument were employed. Accordingly, the following research data collection instruments were used at the different levels and stages of this study:

3.6.1 Questionnaire

The major instrument used for this study is the questionnaire which sought information about the TVET in their Colleges and demographic attributes and of respondents and other general questions on inclusion of IK in to TVET. With regard to this, the questions items were prepared to collect data from groups of respondents of TVET trainers and trainees. In this study questionnaires were used to collect information about the inclusion of Indigenous Knowledge and skills into Technical and vocational Education and Training colleges of Bale and West Arsi Zones of Oromia regional state.

The questionnaire items were constructed using closed-ended and open-ended format at the end to generate both qualitative and quantitative data as intended. It was self-administered and supported by researchers on the clarification of the ideas and available to interpret in the local dialect. The questionnaire was first constructed in English and then translated to *Afan* Oromo for better understanding of the questions asked and for easier comprehension of the respondents. The scale agreement type response categories are preferred because apart from other advantages, it increases comparability of responses in the respective settlements is guarantee.

3.6.2. Key Informant Interview (KII)

Key informant interview was helped to cross-cheek the data collected by others instruments. Key informants are the persons or groups expected, who has professional, experienced, authoritative experiences, and the related ideas to the objective of the research. For this research, Deans of six TVET Colleges and Experts at Zonal were selected as KII purposively.

3.6.3. Focus Group Discussions (FGD)

A focus group is where a number of people are asked to come together in order to discuss a certain issue for the purpose of research. The focus group is facilitated by a moderator who asks questions,

probes for more detail, makes sure the discussion does not deviate and tries to ensure that everyone has an input and that no one person dominates the discussion (Catherin, 2007). In this research ten (10) focus groups discussions in which each group have eight (8) TVET trainers were conducted. In general, the total number of the Focus group discussions was ten (10) and the members of the FGD were eighty participants.

3.6.4. Document Analyses

Document review is also another way of collecting data by reviewing existing documents. Hence, this study was employed document analysis of secondary data from the TVET college curriculum and policy framework.

3.7. Reliability and Validity of Instruments

Reliability refers to the degree of consistency with which an instrument measures whatever is supposed to be measuring. Engel & Schutt (2009,P:94) defined reliability "as meaning that a measurement procedure yields consistent or equivalent scores when the phenomenon being measured is not changing and that it is affected less by random error or chance variation than if it is unreliable". It means stability; dependability and predictability of a measuring instrument to ensure that the instrument consistently measures what it will supposed to be measured. The questionaries' were given to the PHD Holder researchers and other experienced instructors at the College of Education and Behavioral Studies. Then, vague words and unclear statements were corrected and the necessary rearrangement and refinement of the questionnaire were made based on comments. Similarly, some relevant items were added while irrelevant ones were rejected.

In addition, the items were pilot tested to check the internal constancy of the reliability. As a result, 25 respondents those who were not included in the real study have participated in the pilot study. The pilot responses obtained through the questionnaire were analyzed using spss softwore. In doing so, Cronbach (coefficient) alpha was used to judge the internal consistency of the items, and 0.83 alpha values were obtained. This indicated that the internal consistency of the reliability was acceptable or adequate.

3.8. Data Collection procedures

The research goes through the following procedures before starting the actual work of the study. Firstly, Questionnaires, semi-structured interviews, FGD and document analysis checklist were developed in English based on basic research question and literature review to get data about the inclusion of Indigenous Knowledge and Skills into TVET curriculum. Secondly, the questionnaires were translated to Afan Oromo language by the assistant of a language teacher and experts to make sure whether the items contain an equivalent meaning with respondents' language. Thirdly, both English and Afan Oromo version of data collection tools were provided to others experienced researchers at college to get comments. Fourth, the researcher gives adequate orientation for the data collection assistants to secure reliable data before the questionnaire was distributed. Finally, the semi-structured interview with five college deans and FGD were held with TVET trainers.

3.9. Data Processing and Analysis

3.9.1. Quantitative Data Analysis Procedures

Quantitative data was analyzed according to research objectives using SPSS software. Once data collection was completed, then the next task is to decide how to encode each question into SPSS Version 20. Accordingly, the data was analyzed by using descriptive statistics like, frequency, percentage, mean and standard deviation. In addition, to check the mean variations between trainers and trainees independent T-test was used.

3.9.2 Qualitative Data Analysis Procedure

Qualitative data was collected by using FGD and KII. After transcription, data was organized into sections so that it can be easily retrieved. Each of the interviews was given a pseudonym (code). In this research, transcribed interviews and FGD data were analyzed inductively.

3.10. Ethical Consideration

Ethical approval for this study was obtained from Madda Walabu University. Written informed consent was obtained from all the participants. Anonymity and confidentiality was assured. The

purpose of the study was explained to the respondents by the trained interviewers and the fact that their participation will voluntary. Informed consent sheets were read and signed by the respondents before the commencement of the interviews.

To ensure confidentiality of information supplied, the questionnaires were made anonymous. For reasons of confidentiality, each interviewee was identified using pseudonyms.

CHAPTER FOUR

4. Data presentation, Analysis and Interpretation

This part of the study deals with the presentation and analysis of data gathered from different sources like questionnaires, FGD, interviews and document analysis to answers the basic research question raised in the study. Questionnaires were distributed to 117 trainers and 334 trainees of TVET College. In general, Out of 451 distributed questionnaires, 401 were collected back and filled properly. This means 88.9% were collected back and the researchers continued to present and analyze the collected data. Also, there were FGD and a semi-structured interview with 80 college trainers and 6 deans respectively. On the other hand, this chapter has been divided into two parts. The first part discusses the general characteristics of respondents in the study. The second part deals with the analysis and interpretation of data obtained from the respondents on the inclusion of indigenous knowledge and skills into TVET curriculum.

3.2. General Background of Participants

The background of the participants was from five groups of sample populations. Those are IFAE learners, IFAE facilitators, education experts, supervisors, and technical committees. In short, the detailed characteristics of all participants were summarized by the following table.

Table 2: - Background Information of Respondents

Variable		Trainees		Trainers	
		Number	**Percent**	**Number**	**Percent**
Sex	Male	205	65.9%	71	78.9%
	Female	106	34.1%	19	21.1%
	Total	311	100.00	90	100.00
Age	21-25	299	96.1%	35	38.9%
	26-30	2	0.6%	14	15.6%
	31-35	6	1.9%	25	27.8%
	36-40	0	0.0%	5	5.6%
	Above 41	4	1.3%	11	12.2%
	Total	311	100.00	90	100.00
Occupation	Trainees	311	77.6		
	Trainers			90	22.4
	Total	311	77.6	90	22.4
Training level of trainees	Level one	200	64.1		
	Level two	47	15.1		
	Level three	42	13.5		
	Level four	23	7.4		
	Total	311	100.0		
Training level of trainers	Level 4		8	8.9	
	Diploma		5	5.6	
	Degree		64	71.1	
	MA		13	14.4	
	Others		0	0	
	Total		90	100	
Experience	1-5		11	12.2	
	6-10		26	28.9	
	11-15		48	53.3	
	Above 16		5	5.6	
	Total		90	100	

Table 2 shows that among sample trainee respondents males constitute a great majority which was 205 (65.9%) while the remaining 106 (34.1%) were female. This indicates low females' enrolment in the TVET training. When we look into trainer's sex composition 71(78.9%were male and the rest 19 (21.1) constitute female. Here also one can understood that the number of female trainers were low in the TVET Colleges.

With regard to the age range of the trainee's respondents, 229 (96.1%), 2 (0.6%), 6(1.9%) and 4(1.3%) were between age 20-25, 30-35, 36-40 and above 41 respectively. This shows most trainees were in (20-25) productive age. Age range of the trainers constitute 35 (38.9% were within

the age range of 20-25, 14 (15.6%) within the age range of 26-30, 25(27.8%) within the age range 31-35 and 5(5.6%) within the age range 36-40 whereas the rest 11 (12.2%) were above 41. This also indicates most of the trainers were young.

Concerning the qualification of trainers, 8 (8.8%) were level four, 5(5.5%) were diploma holders, 64 (71.1 %) were degree holders and the rest 13 (14.4%) were MA holders. From this data, one can infer that most of the trainers were degree holders.

Regarding the training level of trainees 200 (64.1%) level one, 47(15.1%) level two, 42(13.5%) level three and 23 (7.4%) were level four. Among trainers 12 (52.17%) were level three trainers and 11 (47.83%) were level four trainers. When we see trainers' experience in the campus 11(12.2%) were ranged 1-5, 26(28.9%) were ranged 6-10, 48(53.3%) were served 11-15 and 6(5.6%) were stayed more than 16 years. This indicates that majority of the trainers' respondents have sufficient information about courses delivered in the TVET college.

Table 3: Trainers and Trainees' Perception towards Importance of Integrating Indigenous Knowledge and Skills in to TVET

No	Statements	Experience Group	number	Mean	Std Deviation	t-test for Equality of Means	
						T	Sig.
1	Indigenous knowledge and skill helps to relate VET with the local needs of the students	students	311	3.80	.969	-.859	.306
		Teachers	90	3.90	.925		
		Total	**401**	**3.85**	**.947**		
2	Indigenous knowledge and skill helps to relate with the prior experiences of students	Students	311	3.86	.953	-.464	.651
		Teachers	90	3.91	.944		
		Total	**401**	**3.88**	**.948**		
3	Indigenous knowledge and skill helps to invites students to share their previous IK	Students	311	3.85	.927	.197	.232
		Teachers	90	3.82	1.012		
			401	**3.83**	**.969**		
4	Indigenous knowledge and skill helps to use the local materials as training resource	Students	311	3.72	1.026	-.077	.342
		Teachers	90	3.73	1.089		
			401	**3.72**	**1.057**		
5	Indigenous knowledge and skill helps to increase sense of ownership of the training	Students	311	4.02	1.001	-.149	.770
		Teachers	89	4.03	.982		
			401	**4.02**	**.991**		
6	Indigenous knowledge and skill helps to develop culturally acceptable local development solutions for problems	Students	311	3.94	1.043	.162	.868
		Teachers	90	3.92	1.019		
			401	**3.93**	**1.031**		
7	Indigenous knowledge and skill helps to capacitate local community experience	Students	311	3.80	1.044	-1.045	.322
		Teachers	90	3.92	.951		
			401	**3.86**	**.995**		

From 1-2.60 disagree, 2.60-3.40 medium, 3.41 – 5 agree

Regarding trainers' and trainees' perception towards the importance of integrating indigenous knowledge and skills into TVET curriculum and training material the issue was rated (mean value 3.85). This showed that, the respondents agreed on the importance of integrating Indigenous knowledge and skills in to TVET curriculum in relating VET with the local needs of the students. The result (t= -.859, p= 0.306) indicates that there is no significant difference between trainers and trainees in their perception towards the importance of integrating IK and skills in to TVET curriculum and training. In line with this, Hanushek and Ludger (2007) stated that education must incorporate what people need, be aligned with the social and physical environments, and be relevant to bring sustainable and meaningful development to a continent and respond to societal

problems. Tenna and Punam (2020) also asserted the designing of course and the educational policies and system should be aligning with the indigenous knowledge and skills. Without focusing on the interest and need of indigenous people and without including indigenous knowledge in the education system results in the destroying culture and natural resources.

The table shows that, the mean value of Indigenous knowledge and skill helps to relate with the prior experiences of students was rated (3.88). As it was indicated by rated mean value it is possible to conclude that respondents agreed on the importance of integrating indigenous knowledge and skills in to TVET in helping to relate training with the prior experience of students. The result (t= -464, p= .651) also showed there is no significance different between trainers and trainees. On the top of this, Teshome and Sobha (2017) indicated that, indigenous knowledge system is all-inclusive and can enhance the educational experience in schools. It is also rich in knowledge that has been developed through experiences that have been accumulated over a long period of time.

On item three the mean value (3.72) indicates that both trainers and trainees agreed on integrating indigenous knowledge and skill in to TVET is important in inviting students to share their previous IK and skills. In addition, the result (t =.197,p=.232) indicated that, there is no significant difference between trainers and trainees on raised issues. From this response it easy to understand that, respondents understand that integrating indigenous knowledge and skill in to TVET is very important in inviting students to share their previous IK and skills.

The mean value of item number four was rated (3.72) which indicates that, both trainers and trainees agreed on the importance of integrating IK and skills in to TVET curriculum and training in helping to use the local material as training resource. Besides the result (t= -077, p= .342) showed there is no significant difference between trainers and trainees on the importance of integrating IK and skills in to TVET in helping to use the local materials as training resource. On the other hand, both trainers and trainees have highly agreed (mean value 4.02) that Ik and skills have great role in increasing sense of ownership of the training. The p value (.770) indicated that there is no significant difference between two groups. Zidny et al...(2020) also added that, Learning about IK may help students recognize the strong connection formed between humans and nature in the foreground of culture from their context.

The table also shows the mean value of Indigenous knowledge and skill helps to develop culturally acceptable local development solutions for problems was rated (3.93). As it was indicated by the

rated mean value, respondents agreed that, if indigenous knowledge and skill is integrated in to TVET curriculum and training, it helps to develop culturally acceptable local development solutions for problems. In line with this, Battiste (2002) confirmed that, students will be able to learn through culture because African indigenous knowledge is stored in various cultural forms, for example, folk stories, songs, folk drama, legends, proverbs, myths, etcetera. The use of these cultural resources in formal education can be very effective in bringing AIKS alive for students. It enables them to conceptualize practically, places and issues in both the local area and beyond their immediate experiences;

The mean value of Indigenous knowledge and skill helps to capacitate local community experience was rated (3.86) which means the respondents were agreed on the importance of IK and skills in capacitating local community experience. Besides, the result (t=-1.045, p=.322) from this it was possible to conclude there is no significance difference between trainers and trainees. This indicated that, integrating indigenous knowledge and skills in to TVET is very important in capacitating local community experience. On the top of this, Langill (1999) asserted that IK is a system of local capacity building. Local capacity-building is a crucial aspect of sustainable development in which researchers and development specialists need to design approaches that support and strengthen appropriate IK and institutions. Similarly, Abera (2020) stated IK provides a key source of information and understanding on the daily life of the local community in agriculture, traditional medicine, the utilization of local resources and other activities to play a role in shaping our development effort.

In addition, FGD and interview conducted with TVET dean and trainers on the importance of IK and skill point out the following truth;

> Integrating indigenous knowledge and skill in to TVET curriculum is very important. Indigenous knowledge and skill is efficient in terms of resource and time use. We can produce within short period of time by using Ik and skills. We can easily implementing it inside and outside the TVET. For example agricultural skills can be used on the farms, furniture and construction skills can be used in different construction buildings. We do not wait training from others. So it is very important for our development as the professionals easily avail in the local community. IK and skill is easily changed to practice with what we have locally **(GTT3).**

Besides, during the interview session one of the TVET dean coded as ATT1 clearly stated about importance of integrating IK and skills in to TVET curriculum and training as follows:

> Indigenous knowledge is widely existed in our society. TVET institution has to work in bringing their hidden indigenous knowledge craftsmen to public to get the society benefited out of it by improving it with new technology. Indigenous knowledge and skills craft workers such as leather work, pottery, and black smith have basic importance and serve as an initial departure to technological advancement of the nation. We have to work hard to bring this hidden skills and knowledge to the public.

Another FGD from other TVET college also said that,

> Indigenous knowledge is a very important subject that our country has not yet reached with innovation. This native knowledge is not carefully researched in our country and we are often asked to create such work in TVET. Currently, we are seeing children in lower classes creating different technologies by using their indigenous knowledge and skills that are naturally given for them. Indigenous knowledge is everywhere in the country but it is hidden and unused correctly. If this indigenous knowledge is researched very well it can benefit individuals as wells as the community and the society as a whole **(AT1).**

As reflected by another FGD with TVET trainers indicated about importance of integrating IK and skills in to TVET curriculum and training as follows:

> "Indigenous knowledge is basic to industrial development. Because, it is home grown knowledge and skill it is more appropriate to us rather than adopted train skills" **ATT1.** Individuals learn from their experience and from others before formal education and scientific knowledge. Ik is grown with us and can be shared with in the community. It helps to publicize the forgotten and hatted knowledge and skill and help to be accepted able respected by the community. The important of ik is more than words in terms of its suitability and feasibility **(GTT4).**

However, FGD with trainer coded as ATT4 mentioned that,

Indigenous knowledge /cottage industry was concluded as backwardness by our community. The community attached a lower status to it by giving backward and stereotyped names as, for hand craft workers such as **"Tumtu** for black smith, **duugduu/ faaqii** for leather workers and etc. This thinking has to be eliminated together. With woreda cultural and tourism office our TVET has searched to hidden craft workers and we tried to bring them to public by focusing this awareness and giving them basic training. In this regard we supported black smith, leather craft workers, clay workers (pottery) and house decoration workers in our area. On the other hand, we all have to work together to use the locally available IK and skills. The university has also need to conduct sufficient research on this issue.

Table 4: Methods of integrated indigenous knowledge and skill into TVET training

No	Statements	Experience group	Number	mean	Std Deviation	t-test for Equality of Means	
						T	Sig.
1	By inviting indigenous knowledge and skill professional	Trainees	311	3.80	1.085	-1.896	.051
		Trainers	90	4.02	.924		
		Total	**401**	**3.91**	**1.004**		
2	By visiting Indigenous knowledge cottage industries	Trainees	311	3.62	1.157	-2.233	.022
		Trainers	90	3.90	.995		
		Total	**401**	**3.76**	**1.076**		
3	By using practical example of locally available indigenous knowledge and skills	Trainees	311	3.81	1.059	-1.781	.089
		Trainers	90	4.01	.906		
		Total	**401**	**3.91**	**.982**		
4	By applying Blended learning	Trainees	311	3.83	1.034	.409	.145
		Trainers	90	3.78	1.149		
		Total	**401**	**3.80**	**1.091**		
5	By using the prior experiences of students as an input for training	Trainees	311	3.68	1.099	-2.839	.021
		Trainers	90	4.01	.954		
		Total	**401**	**3.84**	**1.020**		
6	By involving local community in curriculum development	Trainees	311	3.75	1.039	-1.354	.355
		Trainers	90	3.91	1.013		
		Total	**401**	**3.83**	**1.026**		

From 1:00-2.60 disagree, 2.61 – 3.40 medium, 3.41- 5:00 agree

Based on the Methods of integrating indigenous knowledge and skill into TVET training regarding of the trainers and trainee response of the above table 4 shows on the item one was rated agree with (mean=3.91) about inviting indigenous knowledge experts. This shows both the trainee and the trainer agree on the items of inviting indigenous knowledge professional to share their experiences to TVET training. The result (t=-1.896, P=0.051) indicates that there is no statistically significance difference between the trainees and the trainers on the inviting of indigenous professional to TVET training. To this regard trainers have higher (mean=4.02) than trainees (mean=3.80). This could be due to the fact that the trainers might see a slightly higher value in inviting experts. As various studies on the value of TVET have been undertaken with its numerous goals, which vary from country to country, it empowers individuals not only with technical and vocational skills but also with a wide range of knowledge, skills, and attitudes that are now

acknowledged as essential for meaningful participation in work and life (Shirley, etal 2014). In addition to this the studies of Carlson & Berkes, states in their 2010 paper on the Importance of Indigenous Experts emphasizes including Indigenous knowledge holders in education. They enrich curriculums and foster culturally relevant learning for trainees. In line with this Cajete (2000) assures Indigenous Teaching Methodologies explores the benefits of these methodologies, often emphasizing experiential learning and respect for traditional knowledge systems.

Regarding item number 2 of table 4 the mean value 3.76 indicates that visiting indigenous knowledge businesses is still positive. From this response the SD=1.076 suggests some variation in opinion between the trainees and the trainers. The result t-test (-2.233, P=0.022) there is no statistically significant difference between the trainee and the trainers. This depicts trainers seem to find this method more valuable for trainees to train from the real-life context. Different studies conducted in the area by (Bartlett et al., 2012) and (Nakata et al., 2000) highlight the value of place-based learning and experiential education in fostering deeper understanding and appreciation for Indigenous knowledge systems. In addition, Research conducted by (Aikenhead & Meyer, 2004) explores the importance of connecting classroom learning with real-world contexts, which visiting IKS businesses can provide.

As the overall mean value of 3.91 on item three table 4 shows us similar opinion as of inviting indigenous knowledge professional or experts. This shows the methods of using local examples of indigenous knowledge and skills scored with trainees (mean=3.81) and trainers (mean=4.01) moderately high SD. It indicates (t=-1.781, P=0.089) shows there is no statistically significance difference between the trainees and the trainers. Battiste (2008) discusses the importance of integrating Indigenous knowledge systems into mainstream education to create a more holistic and culturally relevant learning experience. A study by Cajete (2004) explores the concept of "indigenous pedagogy" which emphasizes integrating traditional knowledge and practices into contemporary education.

Regarding item 4 of table 4 methods of integrating indigenous knowledge and skills in to TVET training on blended learning approach have no relatively similar average scores from trainees mean(3.83) trainers(3.78) with mean value(3.80).The t-test=0.409,P=0.145 depicts there is no statistically significance difference between two groups. This suggests no difference in perception between trainers and trainees towards applying Blended learning training style. Research studies

by Windle & Hastings, 2005] reassures the potential of blended learning to create more flexible and engaging learning experiences. In line with this, a study by (Means et al., 2013) portrays the importance of effective pedagogy and design when implementing blended learning approaches to ensure their success.

In utilizing of trainees experience for the methods of integrating Indigenous knowledge and skills in TVET training with trainers mean (4.01) saw a higher value in considering trainees experience than the trainees themselves (3.68).The total mean (3.84)is moderately positive with some variation suggested by SD. The t-test (-2.839, P=0.021) depicts there is statistically significance difference between the trainers and the trainees. This indicates trainers seem to perceive more value in this approach. [Biesta, 2009] discusses the importance of recognizing the experiences learners bring to the classroom. Research by [Moll et al., 1992] explores the concept of "funds of knowledge," highlighting the value of leveraging students' out-of-school experiences to enhance learning.

Regarding trainee mean (3.75), trainers mean (4.01) involving community during curriculum development with a positive total mean (3.83) showed moderately high scores from both groups. This indicate the t-value (-1.354, P=0.365) suggests there is no statistically significance difference in perception between trainers and trainees. This indicates that community participation during curriculum development plays a pivotal role. Study conducted on Community-Based Learning: by [Cochran, 2009] and [Gruenewald, 2003] highlights the benefits of community-based learning approaches, where communities contribute to curriculum development and learning experiences. In addition to this research on Culturally Relevant Education by [Gay, 2010] emphasizes the importance of culturally relevant education, which often involves collaborating with local communities to ensure curriculum reflects their knowledge and perspectives.

In addition the interview made with college deans and experts, and FGD data with TVET trainers shows the following:

> The interview made with TVET dean coded ShTI……briefly indicates *The indigenous knowledge and skill was not delivered in TVET training Occupational standards of different courses. Through the current government initiative strategy, we identified these Indigenous knowledge and skills by conducting different short-term training a lone by*

cottage industry. For this a good example are people who make furniture, blacksmith and traditional ploughing equipment took training out of college for them on their products how value-added for market profit.

In addition to this, the interview made with coded BJOI indicated that…

Previously, traditional blacksmiths workers were encouraged by coming to TVET colleges to gain experience. For example, blacksmiths in Dalo before who used charcoal and blowers, to makes knives, axes and other traditional equipment are now supported by the college trainers, and those who used blowers before moved to modern machinery that saves energy. This time TVET College makes them to get support how to produce these equipment's by different design.

In other way, the interview made with HTI……. *Currently, there is nothing we are giving that is included in the education system except the level of thought and direction set by the government. However, we are also preparing and providing background material with the general knowledge. It should also be added that this subject is very crucial if it is included in the TVET curriculum. A country can only grow if it has a knowledgeable person who is developed in wisdom and whose mind believes in wisdom. So, this one is very important and it should be included in the curriculum as much as possible. So far, I don't think this so-called indigenous knowledge is specifically included but still the same scientific or western knowledge included in TVET occupational standard.*

Besides, in FGD one of the participant coded NATT2 said that,

I am teaching my own course in the faculty of agriculture as a trainer what I have seen in what I am training is there is an independent topic written in TTLM about indigenous knowledge on soil and water conservation issues. For example, soil and water conservation. For example, if we say we will do soil and water conservation our farmer already has indigenous knowledge and we will relate that indigenous knowledge to what our farmer has and we will train him down. Our training will strengthen the skill gap. Contrary to this idea, the skills offered in TVET in FGD participant coded NATT7 explores'…. The curriculum delivered in TVET was copied and pasted and there are many things we can work on in our country but it is not formulated in the curriculum. The

professionals or trainers are trained by foreign copied curriculum, and the people we are going to help have their native knowledge, and this is a problem with us not to focus on indigenous knowledge.

Therefore, this finding shows that both trainers and trainees view most methods favorably, with Inviting Indigenous Knowledge Experts, using local examples, and community involvement ranking highest. There seems to be a higher preference among trainers for visiting businesses and utilizing trainee experiences. A blended learning approach received a neutral overall rating, suggesting a need for further exploration of how to effectively integrate it.

Table 5: Challenges of integrating IK and skills into TVET training

No	Statements	Experience group	Number	mean	Std Deviation	t-test for Equality of Means	
						T	Sig.
1	Lack of indigenous knowledge and skills training	students	311	3.35	1.200	-1.463	.067
		Teacher	90	3.53	1.019		
		Total	**401**	**3.44**	**1.109**		
2	Lack of awareness on the advantages of indigenous knowledge and skills	Students	311	3.33	1.203	-1.818	.794
		Teacher	90	3.59	1.198		
		Total	**401**	**3.46**	**1.200**		
3	Lack of experience to train trainees	students	311	3.39	1.262	-.962	.162
		teachers	90	3.52	1.124		
		Total	**401**	**3.45**	**1.193**		
4	Lack of documented indigenous knowledge and skills materials for training	students	311	3.50	1.212	-.519	.488
		teachers	90	3.57	1.132		
		Total	**401**	**3.53**	**1.172**		
5	Absence of conducive environment to apply indigenous knowledge and skills	students	311	3.59	1.251	1.380	.035
		teachers	90	3.41	1.069		
		Total	**401**	**3.50**	**1.160**		
6	Lack of proper technical support from stakeholders	students	311	3.61	1.236	-1.164	.132
		teachers	90	3.77	1.082		
		Total	**401**	**3.69**	**1.159**		
7	Lack of collaboration with each other's	students	311	3.77	1.234	-.453	.043
		teachers	90	3.82	.990		

From 1-2.60 disagree, 2.60-3.40 medium, 3.41 – 5 agree

Concerning item 1 in Table 5, the total mean value response (M=3.85) and an independent p-value=0.67($p > 0.05$) this shows, that statistically there was no significant difference between the

two groups regarding two this item. This confirms that respondents have similar understanding on lack of indigenous knowledge and skill training is a challenge of integrating IK and skills into TVET training.

Item 2 of Table 5, reveals the perception of respondents concerning Lack of awareness on the advantages of indigenous knowledge and skills. Accordingly, the response mean score (M=3.83) and (p= 0.794) (p > 0.05 this indicates that there was no statistically significance deference between the group respondents.

In item number 3 of the same table, average mean scores (M=3.72) and (p=0.162) p>0.05 indicated that there was no statistically significant difference between the two groups.

Regarding item 4 of the same table, the mean value response of the respondents (M=4.02) and p=0.488, p >0.05) this shows that there is no significant mean difference between the opinion of trainees and trainers.

Coming to item 5 the same table, the respondents were asked their opinion whether the absence of conducive environment to apply indigenous knowledge and skills was a challenge of integrating IK and skills into TVET training. The mean value result (M=3.86) and (p=0.035) p<0.05.significant levels shows that there is statistically significant difference concerning the absence of conducive environment to apply indigenous knowledge and skills. This confirms that respondent groups have different degree of understanding status on the absence of conducive environment to apply indigenous knowledge and skills.

In item number 6 of the same table respondents asked whether lack of proper technical support from stakeholders as a challenge of integrating IK and skills into TVET training. In this case, average mean scores (M= 3.93, SD=1.031),p=0.132 p >0.05) indicated that there was no statistically significant difference between the two groups. This shows that lack of proper technical support from stakeholders affected to integrate IK and skills into TVET curriculum and training.

Concerning item 7 in Table 5 reveals the perception of respondents concerning Lack of collaboration with each other's Accordingly, the response of average mean score (M=3.86 SD=0.995) and p= 0.43) (p > (0.05) this indicates that there was no statistically significance deference between the group respondents. This indicates that respondent groups are on the same level of understanding regarding that the issue of Lack of collaboration with each other's is a problem to integrating IK and skills into TVET training.

As to Subhita & Sapna (2020) confirmed that, the TVET system is struggling with multiple laws, certificates, and curricula: The job market's demand-supply imbalance and ongoing lack of adequate training for open positions, Poor view and public opinion that parents want their kids to work as office assistants or administrative workers, Government agencies and regulatory bodies' lack of coordination a poor academic-industry connection as a result of the low employment rates that job providers are looking for, lacking a current curriculum that meets the demands of the sector, lack of trained educators, Lack of contemporary machinery, raw resources, and adequate infrastructure is a barrier to learning during training. a lack of independence, a lack of financial and administrative autonomy, and responsible behavior

In addition to the above, the FGD and interview from different colleges stated as follows;

> As FGD coded as GTT1 indicated, Lack of budget, skill man power/skill gaps, shortage of machineries, frequent change of industry package/curriculum/coc education, lack of appropriate training materials Trainers yearly took COC evaluation. If he/she fails he/she leave. The teacher focuses on his own existence rather than preparing for his trainers education, occupational standard is frequently changing, trainers may not know the changed occupational standard. These are the great challenges associated with the program.

Besides in interview session with HTD1 said that;

> *We may not know the skills in a complete way. There is skill gap which the government should be able to fill the skills gap. It may be difficult to arrange training materials and venues according to the characteristics of the subject. Furthermore, if this training is understood and widely given through the government and colleges, it will be possible to make our society professional in a short period of time. The temporary problem is how you see the knowledge-related one and there is special problem of material related. Other than this if the above problem solved it can easily understand and achieved.*

In another FGD session with HTT

> *There is a problem of understanding, people do this skill naturally and there is a lack of*

understanding. To solve this problem, the authorities at all levels from trainers to professionals should work on the lack of awareness. For example, Industry is needed in this so-called hut. The problem may be a lack of equipment, or knowledge. The other is the lack of recognition of one's natural abilities (Indigenous knowledge) and, the fear of living with family.

In FGD session with ATT

The trainers have to be trained on indigenous knowledge. Otherwise, the trainers may face great challenge to train indigenous knowledge and skills in to TVET programs. Future research must be conducted to publicize this hidden IK and skills. The government also needs to give emphasis on these issues. The curriculum integrate IK and TOT is given to trainer the trainer may not face problem. This has to be considered.

Table 6: Fields of training in sample TVET training Institutions

No	Fields of TVET Training	Name of TVET giving the training						Remark
		Goro	Agarfa	Asassa	Negelle	Shalla	Dello	
1	Construction	**X**	**X**	**X**	**X**		**X**	
2	Garment	**X**		**X**		**X**		
3	Furniture	**X**	**X**				**X**	
4	Crop production		**X**	**X**	**X**		**X**	
5	Animal health				**X**	**X**		
6	Animal production				**X**		**X**	
7	Structural construction			**X**				
9	Wood work technology				**X**			
10	Mechanics	**X**		**X**	**X**	**X**	**X**	
11	Fruit and vegetable processing				**X**			
12	Dairy products processing				**X**			
13	Cereal processing				**X**			
14	IT	**X**						
15	Road Construction and Maintenance				**X**			
16	Hardware and networking		**X**	**X**	**X**	**X**		
17	Automotive Electrical and Electronics				**X**			
18	Automotive Mechanics				**X**			
19	Food And Beverage Service				**X**			
20	Finishing Construction Work				**X**			
21	Building Electrical Installation		**X**	**X**	**X**		**X**	
22	Plumbing installation			**X**	**X**		**X**	
23	Electronics						**X**	
24	Welding					**X**		
25	Computer science						**X**	
26	IEECS			**X**				

Table six is about fields of training delivered by the sample TVET institutions. In the six TVET institutions 26 training programs are delivered from level I to level IV. Negele Arsi TVET is the well- experienced and well organized TVET that deliver training on 17 different fields of training. As it is presented in the table, from 26 training programs about nine fields are relevant for integration of indigenous knowledge and skill. The Construction training can share knowledge and skill from traditional carpentry and masonry; Garment can share indigenous knowledge and skill from weaving; furniture can share indigenous knowledge and skill from traditional wood and metal works; crop production, animal health, animal production can widely share rich knowledge and skills from agricultural practices of the local communities; mechanics to some extent can share knowledge and skill from traditional blacksmith. On the other hand, the majority of training fields listed in the table (form N^{O} 11 -26) are training programs related to ICT, mechanical and electrical technologies which do not invite the inclusion of IKS to some extent.

According to Yacoub (1998), the relevant fields of IK and skill includes but not limited to: Agriculture, knowledge related to crop selection and planting times, Animal's husbandry and veterinary medicine, animal breeding and production; Use and management of natural resources, such as soil fertility management and management of wild species, Health care, knowledge of plant properties for medicinal purposes, Community development that share knowledge and links between community members and generations; Poverty elevation (knowledge of survival strategies based on local resources), irrigation and traditional water-management, Plants: as a source of wild food, building material, household tools, personal uses, Worldview: views of the universe and humanity`s place within it, relationship between humans and nature, myths, beliefs, customs.

In regard to the inclusion of indigenous knowledge and skill in TVET curriculum and training, the researchers conducted content analysis of sample curriculum documents; such as crop production, animal production, wood working technology, mechanics and others. During the content analysis, we have found that no chapter, no sub-topics or paragraph are devoted to indigenous knowledge and skill in the training area.

The curriculum document on its preface clearly indicated that,

> *The reformed TVET-System is an outcome-based system. It utilizes the needs of the labor market and occupational requirements from the world of work as the benchmark and standard for TVET delivery. The requirements from the world of work are analyzed and documented – taking into account international benchmarking – as occupational standards (OS).*

This shows there is no need of integrating IK and skill into the curriculum, because the primary goal of the training is to satisfy needs of the labor market and occupational requirements from the world of work. The curriculum development is also not included the participation of the local communities and traditional IK and Skill professionals. This is verified in the curriculum document preface stating '*the curriculum has been developed by a group of professional experts from different Regional TVET Bureaus, colleges, Industries, Institutes and universities based on the occupational standard of different fields of training*.'

In addition, FGD and interview conducted with TVET trainers indicated the following reality,

> TVET trainer coded as TVT1 clearly indicated '……*Integrating IK and skills in to TVET is important to transmit the knowledge and skill to the current and coming generations in a well-documented manner.* ***ATT6.*** *Generally, the current TVET curriculum is designed based on the modern technical and vocational skills and do not incorporates the traditional knowledge and skill.* **ATT6**. This verifies the above stated in the curriculum document.

Another trainer also further stated. *The TVET graduates are also expected to serve or to be employed in the modern industries. So, the curriculum is basically industry-based curriculum.* **ATT6**

To summarize the table from 26 areas of fields of training in the sample TVETs, fields such as Construction, Garment, Furniture, Crop production, Animal health, Animal production, Structural construction and Wood work technology are areas of training that are conducive for integration of Indigenous knowledge and skill. Out of these training areas no field has integrated the Indigenous knowledge and skill into its curriculum. The TVET training curriculum is developed based on the reformed TVET-System and is an outcome-based system. It utilizes the needs of the labor market and occupational requirements from the world of work as the benchmark and standard for TVET delivery. The TVET curriculum is designed based on the modern technical and vocational skills, because the TVET graduates are also expected to be employed in the modern industries.

Chapter Five

5. Summary of Major Findings, Conclusion and Recommendation

5.1 Summary of Major Finding

The major objective of this study is to assess the inclusion of Indigenous Knowledge and skills in to Technical and Vocational Education and Training curriculum of Bale and West Arsi Zones. To achieve this objective the researchers employed mixed methods with concurrent triangulation research design. In doing so, both qualitative and quantitative data were used to answer the following research questions;

- To what extent TVET trainers and trainees perceived the importance of integrating Indigenous Knowledge and skill in to TVET College curriculum?
- How do TVET trainers integrate Indigenous Knowledge and skill in to TVET?
- What are the challenges that TVET trainers face while integrating IK and skills into TVET?
- What are the challenges that experts of TVET face while integrating IK and skills into TVET curriculum?

To come up with answers to those basic research questions, questionnaires and semi-structured, interviews, FGDs and document analysis were used as data collection instruments. The data collected were also organized and analyzed using both quantitative and qualitative data analyzing techniques. Accordingly, based on the analysis made under chapter four the following major findings were organized under each research question.

Major finding related to importance of integrating Indigenous Knowledge and skill in to TVET College curriculum.

- Integrating IK and skills in to TVET is important to transmit the knowledge and skill to the current and coming generations in a well-documented manner.
- If Indigenous knowledge and skill is integrated with TVET curriculum it is very important for trainees' development as the professionals easily avail in the local community.
- If this indigenous knowledge is researched very well it can benefit individuals as wells as the community and the society as a whole. But our country has not yet reached with innovation.

- If Indigenous knowledge and skill is integrated with TVET curriculum and training materials, individuals learn from their experience and from others before formal education and scientific knowledge. Because, it is home grown knowledge and skill which is more appropriate to trainees and communities rather than adopted train skills.
- It helps to publicize the forgotten and hatted knowledge and skill and help to be accepted and respected by the community.

Major finding related to methods of integrating Indigenous Knowledge and skill in to TVET College curriculum.

The top Methods/ strategies that help to integrate IK into TVET curriculum includes; -

- community involvement in curriculum design and implementation
- Employing local resources and examples in training
- Inviting Indigenous peoples and experts
- Facilitating internship programs for trainees to visit IK peoples and their works

Major finding related to challenges of integrating IK and skills into TVET curriculum

- Lack of experience to train trainees
- lack of awareness on the advantages of indigenous knowledge and skills
- lack of documented indigenous knowledge and skills materials for training
- lack of proper technical support from stakeholders
- lack of budget
- lack of skill man power/skill gaps
- shortage of machineries
- frequently changed of industry package/curriculum/COC education,
- Lack of recognition of one's natural abilities (knowledge). Were challenges that encountered in integrating IK and skills into TVET training in the study areas.

Major finding related to integration of IK and skills into TVET curriculum

- Among 26 areas of fields of training in the sample TVETs, nine fields such as Construction, Garment, Furniture, Crop production, Animal health, Animal production, Structural construction and Wood work technology are areas of training that are conducive for integration of Indigenous knowledge and skill.
- Out of these training areas there is no field that has integrated the Indigenous knowledge

and skill into its curriculum.

- The TVET training curriculum is an outcome-based system and utilizes the needs of the labor market and occupational requirements from the world of work as the benchmark and standard for TVET delivery.
- Because the TVET graduates are expected to be employed in the modern industries, the TVET curriculum is designed based on the modern occupational standard and requirements of the labor market.

5.2. Conclusion

Based on the analysis of the qualitative and qualitative data and the summary of major findings the following conclusions were drawn.

Indigenous knowledge and skills are empirically tested epistemological wealth of local communities accumulated through generation. Integrating IK and skill in to TVET is important to transmit the knowledge and skill to the current and coming generations in a well-documented manner. Indigenous knowledge and skills are a starting point to scientific development and if it is integrated with IK, it can produce locally relevant to development solution by using local knowledge and resources. But, because of the intense dislike of indigenous knowledge some Ik and skills are lost. For example, in the area of traditional medicine very important portion of medications that cure serious diseases are lost because of the stereotyping of individuals giving the traditional medications. Such potentials of IK and Skill are overlooked by TVET institutions in the sample area.

In this regard, if IK and skill is integrated in to TVET curriculum, it can help to preserve the endangered IK and skills and enhance productivity of the practitioners of IK. Besides, it helps to publicize the forgotten, hatted knowledge and skill to be accepted and respected by the community. In some TVET colleges there are attempts to integrate IK and skill in to their course by inviting trainees to visit nearby companies and using trainee experience. But, lack of documented indigenous knowledge and skills materials for training, lack of proper technical support from stakeholders and lack of skill man power/skill gaps are the major challenges that hinder the trainers to fully integrate IK and skills in their course.

5.3. Recommendations

Based on the study, the following recommendations are forwarded.

- ✓ It is better if TVET institution has to work in bringing hidden indigenous knowledge craftsmen to public to get the society benefited out of it by improving it with new technology
- ✓ The government and others stake holders including university have to support them with new technologies to make use of it.
- ✓ Conducting research and enhancing communities understanding on the importance of indigenous knowledge is very interesting.
- ✓ If it is supported by research and recorded and documented the endangered indigenous knowledge and skill will be preserved and transmitted to the coming generations. So, everybody have to give attention for the issues.
- ✓ It is suggested if the curriculum is clearly demarcated and prescribed the scope of indigenous knowledge as courses.
- ✓ Regional, zonal and woreda education office have to prepare training on indigenous knowledge and skills.
- ✓ Future research must be conducted to publicize this hidden IK and skills.
- ✓ TVET colleges have to integrate IK and skill specifically in to Construction, Garment, Furniture, Crop production, Animal health, Animal production, Structural construction and Wood work technology courses.

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Appendix A

Madda Walabu University

Academic Research and Community Engagement and Technology Transfer Vise President Office

Questioner to be filled by TVET students and teachers

Introduction and Consent

Dear Respondents

We are lecturers at College of Education and Behavioral Studies Department of Adult Education and Community Development at the University of Madda Walabu. We are undertaking a' research on "The inclusion of Indigenous Knowledge and skills in Technical Vocational Education and Training colleges of Bale and West Arsi Zones Oromia Regional state, Ethiopia". So, you are kindly requested to respond this survey questionnaire, comprising as honestly as possible. No foreseeable risks are associated with the completion of the questionnaire which is for research purposes only. Therefore, all information obtained from this questionnaire will remain ***confidential***. Your participation in this survey is voluntary and you have the right to omit any question if so desired or to withdraw from answering this survey without penalty at any stage.

Directions: - Dear participant please read carefully the instructions below before start to fill the questionnaires.

1. Do not write your name
2. Put a"√" mark in the box for part one information and encircle the number of your choice for part two and three.
3. In answering the open-ended questions, please be as brief as possible. In case you have additional comments, use the backside of the question paper by clearly indicating the number.

Thank you in advance for your Participation!

Part one: Personal Information /Background of respondents

1. Sex *Male* = ☐ *Female*=☐

2. What is the highest level of Education you attended?

1=level 1 2=level II 3=Level III ☐ *4=Level IV* ☐

5=Diploma ☐ *6=Degree* ☐ *7=Masters* ☐ *8=Above* ☐

3. Age 1=21-25 years ☐ 2=26-30 ☐ 3=31-35 ☐

4=36-40 ☐ 5=41 and above ☐

4. Occupation

1=student ☐ 2=Teacher ☐ 3=coordinators ☐

4= Experts ☐ 5= other

Part Two: issues related with the extent TVET teachers perceived the importance of integrating Indigenous Knowledge and skill in TVET

The following items believed to be the extent TVET teachers understand the importance of indigenous knowledge and skills integration into TVET., After reading each item carefully, please indicate your level of opinion against each item by selecting a number from the options **1 (strongly disagree) 2 (disagree), 3 (Medium), 4 (Agree) And 5 (strongly dis agree).**

Please Encircle Your Choice as Indicated Here➔ 1 2 ③ 4 5

No	Statements	Responses				
		5	4	3	2	1
1.	Indigenous knowledge and skill helps to relate VET with the local needs and experiences of the students	5	4	3	2	1
2.	Indigenous knowledge and skill helps to invites students to share their previous IK	5	4	3	2	1
3.	Indigenous knowledge and skill helps to use the local materials as training resource	5	4	3	2	1
4.	Indigenous knowledge and skill helps to increase sense of ownership of the training	5	4	3	2	1
5.	Indigenous knowledge and skill helps to capacitate local community experience	5	4	3	2	1

6.	Indigenous knowledge and skill helps to develop culturally acceptable local development solutions for problems	**5**	**4**	**3**	**2**	**1**
7.	Indigenous knowledge and skill helps to capacitate local community experience	**5**	**4**	**3**	**2**	**1**

Please write, if there is any other importance of integrating Indigenous Knowledge and skill in TVET.

_____

_____

_____

_____

Part IV. Issues related with the methods of integrating indigenous knowledge and skills into technical and vocational education and training and skill.

The following items believed to be the extent do the TVET students understand the importance of indigenous knowledge integration into technical and vocational skill training., please indicate your level of idea against each item by selecting a number from the options **(strongly disagree) 2 (disagree), 3 (Medium), 4 (Agree) And 5 (strongly dis agree).**

Please Encircle Your Choice as Indicated Here➔ 1 2 ③ 4 5

No	**Statements**	**RESPONSES**				
		5	**4**	**3**	**2**	**1**
1	By inviting indigenous knowledge and skill professional	**5**	**4**	**3**	**2**	**1**
2	By visiting Indigenous knowledge cottage industries	**5**	**4**	**3**	**2**	**1**
3	By using practical example of locally available indigenous knowledge and skills	**5**	**4**	**3**	**2**	**1**
4	By applying Blended learning	**5**	**4**	**3**	**2**	**1**
5	By using the prior experiences of students as an input for training	**5**	**4**	**3**	**2**	**1**
6	By involving local community in curriculum development	**5**	**4**	**3**	**2**	**1**

Please write, if there is any other importance of integrating indigenous knowledge and skills into TVET.

_____

_____

_____

Part V. Issues related with challenges of integrating indigenous knowledge and skills into TVET?

	Responses				
	5	**4**	**3**	**2**	**1**
Lack of indigenous knowledge and skills training	**5**	**4**	**3**	**2**	**1**
Lack of awareness on the advantages of indigenous knowledge and skills	**5**	**4**	**3**	**2**	**1**
Lack of experience to train trainees	**5**	**4**	**3**	**2**	**1**
Lack of documented indigenous knowledge and skills materials for training	**5**	**4**	**3**	**2**	**1**
Absence of conducive environment to apply indigenous knowledge and skills	**5**	**4**	**3**	**2**	**1**
Lack of proper technical support from stakeholders	**5**	**4**	**3**	**2**	**1**
Lack of collaboration with each other's	**5**	**4**		**3**	**2**

1. What do you thing other challenges that TVET teachers may face while integrating indigenous knowledge and skills in to TVET curriculum?

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Appendix B

Madda Walabu University

Academic Research and Community Engagement and Technology Transfer Vise President Office

FGD guide for TVET teachers

The ultimate purpose of this FGD is to gather information for how Indigenous Knowledge are incorporated into Technical Vocational Education and Training in colleges of Bale and West Arsi Zone. In doing so, participants /TVET college teachers/ of this study are expected to share their thoughts, experiences and feelings about the preparedness of teachers on integrating Indigenous Knowledge into Technical Vocational Education and Training during the focused group discussion.

Ground rules for FGD

1. Participation is compulsory for every member of the FGD
2. Participants must respond according to the questions read by the facilitator
3. There is no wrong or right answer (All perceptions must be shared)
4. If you have a cell phone please switch it off.
5. The whole discussion will not take more than 2hrs.

Date_____ Time_____ Place of meeting_____

Background information

Name/ Code_____Sex:_____No of participants_____

Experience as a TVET teacher_____

1. What is indigenous knowledge and skill mean for you?
2. How do you see the inclusiveness of Indigenous Knowledge and skill into TVET?
3. Do you think it is important to integrate indigenous knowledge and skill with TVET college courses? If you say **"yes"** please explain the reason why?

4. How do you perceive the value of incorporating indigenous knowledge in to TVET?
5. Do you consider the indigenous knowledge and skills of your students while teaching them?
6. What are the importances of integrating indigenous knowledge and skills in to TVET College curriculum have for students as well as for the community as whole?
7. Are you ready to incorporate indigenous knowledge and skills in to your college's Curriculum?
8. If you say "Yes" for the above question, how do you incorporate indigenous knowledge and skills in to your colleges' curriculum?
9. What is your role as a teacher in integrating indigenous knowledge in to TVET?
10. If indigenous knowledge is integrated to TVET College' curriculum, what it can contribute for the learners as well as for the college community as a whole?
11. What are the challenges of integrating indigenous knowledge and skill in to TVET?
12. What are the mechanisms you suggest to address the challenges?

Appendix C

Madda Walabu University

Academic Research and Community Engagement and Technology Transfer Vise President Office

Interview guide for TVET coordinators and deans

The ultimate purpose of this interview is to gather information for how Indigenous Knowledge are incorporated into Technical Vocational Education and Training in colleges of Bale and West Arsi Zone. In doing so, TVET coordinators and experts of this study are expected to share their thoughts, experiences and feelings about the preparedness of teachers on integrating Indigenous Knowledge into Technical Vocational Education and Training during the focused group discussion.

Name_____

Qualification_____

Position _____

1. What is indigenous knowledge and skill mean for you?
2. Are there any contents in the TVET colleges' curriculum that help learners to do by using their IK and skills?
3. Do you believe that incorporating IK and skill in to TVET curriculum is important?
4. If you say **"yes"** for question number 2, have you inculcating indigenous knowledge in to your college curriculum before? If not why?
5. Who are responsible bodies to incorporate IK and skills in TVET colleges' curriculum?
6. What is expected from you as an expert in order to incorporate IK in to TVET curriculum?
7. If IK and skills are incorporated in to TVET, what is the contribution for the students as well as for the college communities as a whole?
8. Does the teachers are well aware about indigenous knowledge and skills and benefits of its integration with TVET?
9. What does participation of TVET teachers look like in trying to incorporate IK and skills in to TVET?

10. Is there conducive environment to foster incorporating indigenous knowledge and skill into TVET curriculum?
11. What are the challenges you face during incorporating IK and skills in to TVET college courses?
12. What are the mechanisms you suggest to address the challenges?