

## The effects of trainers' competence on employability of government polytechnic college graduates in Dire Dawa City, east-central Ethiopia

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### Abstract

The need for competent and qualified trainers is of paramount importance for an effective technical training system that, in turn, helps to produce competent and employable graduates for the country's economy. The purpose of this study is to investigate the effects of trainers' competence on the employability of polytechnic college graduates in Dire Dawa. The study employed a descriptive-correlational-explanatory research design with a quantitative research method. The sample for quantitative data consisted of 351 randomly selected graduates, trainees, trainers, and administrators. Both descriptive and inferential statistics were used to analyse the data. The findings revealed that trainers' competence was positively correlated with graduates' employability. Specifically, predictors such as knowledge-related competence, assessment-related competence, skill-related competence, and managerial competence were found to have significant and positive effects on the employability of polytechnic college graduates in Dire Dawa. Therefore, the study recommends that the Dire Dawa city Labour Skill and Technology Development Bureau and Polytechnic colleges should give greater emphasis on improving trainers' competence, which in turn enhances the employability of graduates.

### Keywords

Trainers; graduates; competence; employability; polytechnic colleges

### Introduction

It is believed that the 21<sup>st</sup> century is going to be an era of knowledge and skills on the one hand, and information and communication on the other. Such global trends, the desire for up-to-date skills, and persistent changes in the world of work increase demand for technical training. According to Geressu (2017), the quality and relevance of technical training can be affected by inadequately trained or incompetent staff, a poor curriculum, poor training materials, inadequate supplies, inadequate financing, inadequate recruitment of suitable trainees, and the efficiency of management. Of all the different factors that influence the quality of training and its contribution to national development, the quality, competence, and attitude of teachers are the most significant (Arifin et al., 2018). Similarly, Fraser et al. (2019) pointed out that the quality and competencies of the teaching force are among the basic requirements in the quest for excellence in the education

sector in general and technical training colleges in particular. Put differently, the more competent trainers we have, the more competent graduates we produce, and consequently, the more employment prospects there are.

Scholars such as Giangrande et al. (2019) have identified different areas of a teacher's competence. According to the writers, the first area of a trainer's competence is related to the interpretations and transformations of subject matter knowledge in the context of facilitating student learning. In addition, teachers should have pedagogical knowledge that comprises the concepts and skills to be taught, how to organize and present the content in a meaningful sequence, and forms of presentation that are more appropriate to promote students understanding. Hence, among other things, technical and vocational trainers need to have the necessary knowledge and skills that enable them to understand human behaviour and logically teach and train trainees. Likewise, trainers need to assimilate the cognitive capabilities and motor skills inherent to an occupation (Tippelt and Amorós, 2003).

According to Ismail et al. (2018), the second area of a teacher's competence is technical competence, which is the ability and willingness to apply skills and knowledge acquired during training in such a way that technical tasks can be solved independently and competently, and the result can be assessed. Further, trainers in polytechnic colleges also require social competence. Social competence refers to the ability to communicate clearly, make skilful use of a variety of media, and interact successfully with students, both individually and collectively. Moreover, it entails a positive student approach, understanding students' training difficulties, acknowledging the individual student, and being someone the student can trust (Malm and Löfgren, 2006).

Furthermore, it is essential to emphasize teachers' competence to facilitate the process of adaptation to technology and innovation in the educational process. Principally, polytechnic teachers need to improve their competence to adapt to new technologies and global challenges. However, taking the experience and preliminary information of the researchers into consideration, there is difficulty on the trainers' side in terms of adopting solutions innovated elsewhere and lacking the capacity to adapt most of the technologies to the local context in Dire Dawa. Moreover, employers frequently claimed that they were having difficulty finding the right technical graduates to fit their needs. As far as the literature is concerned, the teachers' competence as general polytechnic trainers in particular and graduates' employability in the Ethiopian context have been less researched. These all call for further investigations to shed light on this particular area. Hence, based on the presuppositions explained, exploring the effects of a polytechnic college trainer's competence on the employability of polytechnic college graduates is timely and important. The findings of this research provide insights to curriculum developers, policymakers, responsible state ministerial offices and bureaus, and all practitioners and stakeholders on the appropriate interventions that need to be taken to improve the competence of polytechnic teachers and to match competency gained in the college to the labour market's needs. Moreover, scholars from different fields of study and research institutions may use the findings of this study as a springboard for further studies.

Overall, the major objective of the study is to assess the effect of teachers' competence on the employability of Polytechnic College graduates in Dire Dawa City. In order to attain the stated objectives, the study has attempted to answer the following two basic research questions:

- (1) what is the level of teachers' competence from the perspectives of students, graduates, administrators, and teachers themselves?
- (2) How does teacher's competence influence the employability of Polytechnic College graduates in Dire Dawa City?

## Review of related literature

### Graduate employability

The concept of employability first appeared in Britain in the early 20<sup>th</sup> century. The concept has developed and been extended with the increasing number of graduates from higher education and the diversification of career paths in the labour market. Employability is more than obtaining a job. According to Knight and Yorke (2003), employability is a set of achievements—skills, understandings, and personal attributes that make graduates more likely to gain employment and be successful in their chosen occupations, which benefits themselves, the workforce, the community, and the economy. It is a set of competencies, skills, knowledge, and attitudes that graduates must possess to maintain and secure employment, and to ensure that they keep on being effective in the real workplace. Likewise, employability has been defined as having a set of skills, knowledge, understanding, and personal attributes that make a person more likely to choose and secure occupations in which they can be satisfied and successful (Dacre Pool and Sewell, 2007).

Graduate employability can generally be defined as the compilation of a series of skills and competences that a graduate can obtain to achieve a desirable job and succeed in his or her career (Chen, 2017). Such skills and competencies enable the graduate to meet the desired requirements of employers and adapt to changes in the labour market (Hosain et al., 2021). The need for competent Technical and Vocational Education and Training (TVET) teachers is a must for the quality of trainees' education and training. According to Geressu (2017), competent TVET teachers are essential for simplifying the skill development of trainees and preparing quality graduates. They can also assist trainees to improve their knowledge, skills, and attitudes to meet the needs of the labour market as well as the socio-economic demands of the country. It is difficult to think of competent and employable graduates without competent teachers. Therefore, the competence of polytechnic teachers or trainers is supposed to take the lion's share in improving the competence and employability of graduates.

### Teachers' competence

The word competence was initially discussed and assessed by McClelland in the early 1970s as real features of individuals possessing skills, knowledge, and ability that could be measured (McClelland, 1973). Before defining teachers' competence, it is better to conceptualize the word first. Competence is described differently by different scholars. Boyatzis (2008) conceptualizes competence as the capability and ability of individual skills, knowledge, and behaviour to complete a given task. For Sulaiman et al. (2015), competence can be described as a worker's performance related to the organizational performance in doing a task or job that can be assessed or measured. Likewise, according to Koenen et al. (2015), competence can be conceptualized as the knowledge, skills, abilities, and attitudes that are measurable and could be attained by learners. For some authors, competence is defined as the ability to perform particular tasks and roles to the expected standards (Mulder et al., 2007).

Recently, the word competence has also been explained by Haddouchane et al. (2017) as having the ability needed for a particular task to be carried out in an effective manner or demonstrating expertise in a given subject area that can be measured. Similarly, Geressu (2017) defines competency as a learning outcome that enables graduates to engage in work-related activities using the right combination of knowledge, skills, and attitudes. These definitions view competence as functional, task-oriented, and industry-focused preparation with which individuals can apply the relevant skills, knowledge and attitudes in a required workplace environment. Competence can thus be concerned with the ability and capability of individuals to integrate and apply the knowledge, skills, and attitude or behaviours for the accomplishment of a given task that can be measured and assessed.

Some scholars describe teachers' competence as critical for the success of learners' education and training. Sern et al. (2018) define teachers' competence as skills, knowledge, and attitudes, values, tasks, and appreciations pertinent to teaching and training within the TVET's atmosphere. Others conceptualize teachers' competence from the point of view of the various dimensions or components that teachers' competence can be composed of. For example, Jafar et al. (2020) divided teacher competence into technical and non-technical competencies. The technical competencies consist of instructional preparation, execution, assessment, classroom administration, inspiring and facilitating students, student job growth, technology integration, and subject matter mastery; whereas the non-technical competencies comprise the ability to perform research, apply technological ingenuity, invention, and critical thinking, analytic ability to analyse and look for knowledge, teamwork, and communication ability, improve professional development, and leadership skills.

Ismail et al. (2018) distinguished three main components of teachers' competence in technical training institutions:

1. personal characteristics and professionalism, which are concerned with the polytechnic college's climate and the teacher's competencies in getting to know the organization and the underlying system;
2. teaching, learning, and training, which deal with the pedagogical, thematic, and methodological expertise and skills; and
3. technological and creative abilities, which consist of the specific occupational area of the technical college teacher.

Omar et al. (2020) studied the level of teachers' knowledge, skills, and attitudes in Malaysian TVET institutions. In their article, they pointed out that TVET teachers have a high level of competence in knowledge, skills, and attitudes. Further, they observed a positively significant relationship between the attributes of a TVET trainer's knowledge, skills, and attitudes and the level of the teacher's competency. They also found that knowledge was an important factor in explaining the competency of TVET teachers. The study suggested that TVET teachers must apply the attributes that can ultimately help trainees enhance their employment prospects or their chances of getting hired in local and global labour markets.

Abdullah et al. (2019) descriptively assessed the level of general competency of TVET teachers of construction technology civil engineering (CTCE) at a vocational college in Malaysia. They found that the entrepreneurship competency level of TVET CTCE vocational college trainers was moderate.

Similarly, Rofiq et al. (2018) identified the level of vocational teachers' competence in mechanical engineering. The study findings indicated that there is a good level of competence amongst candidates for vocational trainers with regard to mechanical engineering.

Wagiran et al. (2019) conceptualize technical college teachers' hard skills as encompassing three core competencies, including pedagogic knowledge, content knowledge, and educational technology. For Selvi (2010), teachers' competence can be explained in nine various dimensions of their professional competencies: field competencies, research competencies, curriculum competencies, lifelong learning competencies, social-cultural competencies, emotional competencies, communication competencies, information and communication technologies competencies (ICT), and environmental competencies. Given the various literatures on teachers' competence, this study identified five dimensions of teachers' competence in technical colleges with a total of 36 indicators to establish their effects on graduate employability in Dire Dawa City. These are: skill-related competence, knowledge-related competence, managerial competence, social competence, and assessment related competence.

### **Skill-related competence**

Skill-related competence is another facet of teachers' competence. It includes teachers' ability to translate knowledge into practice; ability to manipulate machines and tools; apply safety in workshops; maintain and repair machines; apply computer skills; develop teaching aids and new technologies; conduct impact assessments; and develop skills in cost, quality, and time optimization. Studies (i.e., Wagiran et al., 2019; Abdullah et al., 2019; Rofiq et al., 2018) argue that technical teachers need to develop skills, among others, including mastery of both theoretical and practical material, the ability to manipulate or operate technological equipment and machines, the ability to prepare and use learning tools, and the use of information and communication technology (ICT) to support teaching and learning. Based on the literature, this study considered skill-related competence as one component of teachers' competence influencing graduate employability.

H<sub>1</sub>: There is a significant and positive relationship between skill-related competence and graduate employability.

### **Knowledge-related competence**

Knowledge-related competences such as knowledge of the subject, knowledge of equipment and maintenance, knowledge of student's psychology, knowledge of TVET curriculum, pedagogical knowledge, and understanding of training contexts are key competencies of TVET teachers to prepare graduates that meet the needs of the labour market. TVET teachers should master their competencies comprehensively to present technical and vocational training that can facilitate the preparation of competent graduates for the current industrial demand (Wagiran et al., 2019). A number of knowledge competencies that technical and vocational teachers should develop, as identified by some studies, include mastery of the subject and pedagogical knowledge such as the use of appropriate pedagogical approaches and learning strategies to fit the current technology (Ally, 2019; Rofiq et al., 2018; Almerich et al., 2016); knowledge of TVET curriculum development, delivery, and evaluation (Wagiran et al., 2019; Ismail et al., 2019); teachers' competence for the psychology of students (Ismail et al., 2018); and learning context (Wagiran et al., 2019). With this point of view, the study assumes knowledge-related competence as an important element of teachers' competence and postulates the following hypothesis:

H<sub>2</sub>: There is a significant and positive relationship between knowledge-related competence and graduate employability.

### **Managerial competence**

Another domain of TVET teachers' competence is managerial competence. It can be measured by various indicators such as ability to maintain discipline in training, organize training equipment, supervise trainees, maintain shop hygiene, assign resources for training, and develop training time management skills. Previous studies asserted that TVET teachers must be competent in areas of managerial competencies. Studies have identified various components of managerial competencies for TVET teachers to become effective in the teaching and learning process. These include, among others, competencies related to managing workshops and classrooms (Wagiran et al., 2019; Ismail et al., 2019); designing and organizing learning equipment to align with outcomes (Ally, 2019; Wagiran et al., 2019; Rofiq et al., 2018); selecting and assigning learning resources to maximize learning (Ally, 2019; Wagiran et al., 2019); monitoring learners progress (Ally, 2019); and managing time and assessing students (Wagiran et al., 2019). Based on the above presuppositions, the study develops the following hypothesis:

H<sub>3</sub>: There is a significant and positive relationship between managerial competence and graduate employability.

## Social competence

TVET teachers need to have social competence. Social competence refers to the ability to communicate clearly, make skilful use of a variety of media, and interact successfully with students, both individually and collectively (Malm and Löfgren, 2006). Social competence involves communication skills, behaving in accordance with social norms, handling student's diversities, understanding student's difficulties, resolving conflict, and guiding and orienting students in their training. TVET teachers need to have communication skills to communicate at the level of the learner (Wagiran et al., 2019; Abdullah et al., 2019). They are responsible for motivating and facilitating student learning (Wagiran et al., 2019; Ally, 2019; Rofiq et al., 2018). TVET teachers also need the ability to manage and resolve conflicts (Wagiran et al., 2019; Abdullah et al., 2019). They also need to master their ability to facilitate social interaction between learners and solve student's problems (Ally, 2019). With the above background, the study includes social competence as one indicator influencing graduate employability.

H<sub>4</sub>: There is a significant and positive relationship between social competence and graduate employability.

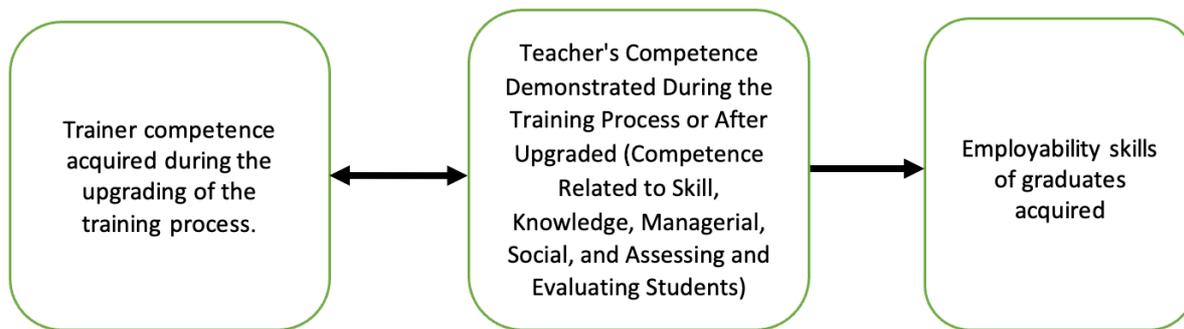
## Assessment-related competence

Assessment-related competence generally refers to teachers' skills in evaluating and assessing their students. It embraces the various assessment indicators, such as the ability to perform continuous assessment, recording as per the module, providing timely feedback, and using evaluation results for training improvements. Previous studies have indicated that teachers' abilities to assess students would facilitate learners' ability to perform well in the 21<sup>st</sup> century. A study conducted by Ally (2019) identified that teachers' assessment competence, including teachers' ability to select assessment strategies to match the learning outcomes, perform assessment strategies to measure learners' performance, use virtual assessment strategies to assess performance, provide feedback for learners, and interpret evaluation results to improve training and learners performance, would improve learners' performance and assist them to function in the globalized digital era. The use of assessment strategies should be genuine to alter students' performance and facilitate learning outcomes (Wagiran et al., 2019; Ismail et al., 2018; Conrad and Openo, 2018). In light of the above information, this study postulates the following hypothesis:

H<sub>5</sub>: There is a significant and positive relationship between assessment-related competence and graduate employability.

## Conceptual framework

A conceptual framework serves as a synthesis of theoretical frameworks and literature to explain the hypotheses the researcher intends to investigate. In quantitative research, a conceptual framework illustrates the relationships between the variables of the study. The following diagram depicts the conceptual framework of this study and describes the hypothesized relationship among study variables, defined from the theoretical framework and literature reviewed. The conceptual framework of this study (Figure 1 below) shows the relationship among all the study variables. To study the effect of trainers' competence on the employability of technical training graduates, the study identifies teachers' competence after upgrading as an independent variable and graduate employability as a dependent variable. The independent variable (teachers' competence after upgrading, also called trainers' competence) is divided into five dimensions: skill, knowledge, managerial, social, and assessment-related competencies. These dimensions of trainers' competence, along with their respective indicators, are identified based on literature. The indicators of the graduate employability construct were adopted from Hosain et al. (2021), with slight modifications to reflect the study context.



**Figure 1: The Conceptual Framework of the Study**

## Research methodology

To examine the effect of trainers' competences on the employability of graduates in Dire Dawa City, the study employed a correlational-explanatory research design with quantitative research methods. The researcher employed a questionnaire as the major data collection tool. The respondents for the questionnaire were college administrators, trainers, students, and graduates. The survey data were collected from November 21, 2022, to February 21, 2023. For manageability reasons, the scope of the study was limited only to the two government polytechnic colleges found in Dire Dawa city. The two selected polytechnic colleges are Dire Dawa and Ethio-Italy Polytechnic Colleges. The sampling frame for this study includes 193 current students, 157 graduates of 2018–2021, 161 trainers, and 51 administrators (polytechnic College Deans, Department Heads, Training Coordinators, Trainers who are not graduates of Ethiopian Technical University, and Experts working pertinent to the Trainer's Competence). The number of graduates in the sample frame was determined by considering graduates currently working in five industries, namely MOENCO, Redawa Motors, Shemu PLC, Dire Dawa Industrial Park, and National Cement Share Company. The required sample size is determined by using Kothari's (2004, p. 179) sample size determination formula equation.

$$n = \frac{Z^2 p * q * N}{e^2 (N - 1) + Z^2 * p * q}$$

Where n is the required sample size, Z = Z value (e.g., 1.96 for 95% confidence level); p = percentage picking a choice, expressed as a decimal (0.5 used for sample size needed); q = the percentage of not picking a choice (1-q); e = error margin, expressed as a decimal (e.g., 0.05 = 5); N=the sample frame. Once the sample frame was determined, a simple random sampling technique was performed to pick up individual elements from a list of each group. The sample sizes for students, graduates, and trainers are 128, 111, and 113, respectively, and all of the 51 administrators, being manageable in size, are included in the sample. Generally, a sample of 403 respondents participated in filling out the questionnaire.

## Validity and reliability of instruments

Research that has high validity produces results that correspond to real properties, characteristics, and variations in the physical world. To ensure validity in this research, the researcher chooses appropriate methods of measurement, ensuring that the method and measurement technique are of high quality and targeted to measure exactly what the researcher wants to know. This can be ensured by the use of appropriate sampling methods to select the subjects and produce valid, generalizable results by clearly defining the population that is researched. The questionnaire has an adequate sample size to make inferences about the population, and as a result, the study can generalize about the population based on the sample.

Reliability refers to how consistently a method measures something. To ensure reliability in this study, the researchers considered the methods throughout the data collection and applied them consistently. Prior to the actual data collection process, the authors conducted a pilot study at Harar Polytechnic College to test the effectiveness of the instrument. A total of twenty questionnaires were distributed to randomly selected participants. The participants in the pilot study are different from the ones used in the framework analysis. The instrument was found to be effective for actual data collection based on the results of the pilot study. The results of the pilot study also indicated that there was no problem completing the questionnaire, and no comments or improvement suggestions were drawn from the respondents. Hence, no further adjustments were needed. In addition, a reliability test was conducted to examine the internal consistency of the instruments. Accordingly, the Cronbach alphas for the study variables skill, knowledge, managerial competencies, social competencies, assessment-related competence, and graduate employability were 0.805, 0.837, 0.916, 0.946, 0.956, and 0.934, respectively. An overall Cronbach alpha value of 0.964 was obtained; implying that the instrument used to collect data was reliable and doable.

### Method of data analysis

Finally, quantitative data gathered in a survey were analyzed using different statistical forms, including descriptive statistics (such as frequency, percentage, mean, and standard deviation) to present the descriptive findings and inferential statistics (such as the Pearson Chi-square test, correlation, and regression) to capture the relationship between variables and test the level of significance. In the discussion of the results, the variable value was defined by utilizing the width of the class interval as follows: The interval width of each level is determined by dividing the range ( $5 - 1 = 4$ ) by the highest score (5), so the interval width of each level is ( $4 / 5 = 0.80$ ). Therefore, the result of the data analysis regarding each variable was defined using the following classification: (5) = 4.21–5.00; (4) = 3.41–4.20; (3) = 2.61–3.40; (2) = 1.81–2.60; (1) = 1.00–1.80. Data were coded, edited, and cleaned for further analysis, assisted by software packages such as SPSS (21.0) and STATA (14.0) interchangeably.

### Results and discussion

For the analysis of the study, questionnaires were distributed to a total of 403 sample respondents (current students (128), graduates (111), trainers (113), and administrators (51)). The response rate was 351 (87%), students (110), graduates (89), trainers (102), and administrators (50) and the remaining 52 (13% of the questionnaire) were not returned. Based on the responses, the demographic characteristics of the study groups were analysed in terms of age, gender, and educational qualification. Accordingly, the mean age for all respondents was 28 years. Out of 351 respondents, 76.4% were male and 23.6% were female. The educational qualification for administrators with a bachelor's degree was 31 (62%), and 19 (38%), with a master's degree. The qualification for trainers with a bachelor's degree was 71 (69.6%), and those with a master's degree were 31 (30.4%).

### Practices in recruiting trainers for pre-service upgrading

Technical trainers upgrading has taken place to promote C-level to B-level, and B-level to A-level as per the training demands of the colleges. In this regard, information collected from participants (administrators (50) and teachers (102)) to measure the level of polytechnic college's practices in recruiting trainers for upgrading was presented and analyzed. As indicated in Table 1, regarding the technical teacher recruitment, the majority of respondents agreed that the process was lengthy and newly recruited teachers did not arrive on time. Most of the respondents also agreed with the idea that technical teacher recruitment was not based on rules and regulations and that, as a result, favouritism might occur. The responses of the majority of respondents indicated that polytechnic colleges were not autonomous in recruiting teachers for their training programs. The Pearson Chi-

Square test results for all indicators of trainers' recruitment process show less than a 5% P-value, which is significant at a 95% level of confidence, implying that the opinions of respondents about the indicators of the recruitment process are not the same.

**Table 1: TVET Colleges' Practices in Recruiting Trainers' for Pre-service Upgrading**

No.	Items	Response								
			SD	D	MA	A	SA	Total	Mean	Sig.
1.	Technical teachers recruitment is a well-planned activity based on college's requirement	No.	5	30	52	56	9	152	3.22	.004
		%	3.3	19.7	34.2	36.8	5.9	100		
2.	Technical teachers recruitment is a lengthy process and newly recruited teachers do not arrive on time	No.	4	28	50	67	3	152	3.24	.004
		%	2.6	18.4	32.9	44.1	2.0	100		
3.	Efficient candidates are properly attracted and recruited	No.	6	49	63	27	7	152	2.87	.002
		%	3.9	32.2	41.4	17.8	4.6	100		
4.	Technical teachers recruitment is not based on rules and regulation and thus favouritism may occur	No.	12	42	75	17	6	152	2.76	.000
		%	7.9	27.6	49.3	11.2	3.9	100		
5.	Technical colleges are autonomous to recruit teachers for training program	No.	26	58	42	23	3	152	2.47	.001
		%	17.1	38.2	27.6	15.1	2.0	100		

Note: SD=Strongly Disagree, D=Disagree, MA=Moderately Agree, A=Agree, SA=Strongly Agree

### Competence acquired by technical trainers during the training process in a technical university

Respondents (particularly teachers (102) who graduated from Ethiopian Technical University) were requested to offer their views in relation to the level of competence they acquired while they were in the training process at the Technical University, as indicated in Table 2. The aggregate result indicated that teachers had a fair level of competence when they were in the training process before graduating from a technical university.

**Table 2: Competence Acquired by Technical Trainers During Upgrading**

No.	Items	Response							
			VL	L	F	H	VH	Total	Mean
1.	Practical training obtained	No.	1	28	41	32	-	102	3.02
		%	1.0	27.5	40.2	31.4	-	100	
2.	Academic knowledge gained	No.	1	17	69	15	-	102	2.96
		%	1.0	16.7	67.6	14.7	-	100	
3.	Skills obtained in manipulating, operating, maintaining, repairing, and controlling machines, equipment, tools	No.	-	7	57	28	10	102	3.40
		%	-	6.9	55.9	27.5	9.8	100	
4.	Skills obtained in manipulating machines	No.	-	7	53	36	6	102	3.40

		%	-	6.9	52.0	35.3	5.9	100	
5.	Skills obtained in operating machines	No.	-	9	48	42	3	102	3.38
		%	-	8.8	47.1	41.2	5.9	100	
6.	Skills obtained in repairing machines	No.	-	18	45	39	-	102	3.21
		%	-	17.6	44.1	38.2	-	100	
7.	Skills obtained in controlling machines, equipment, tools.	No.	-	7	40	55	-	102	3.47
		%	-	6.9	39.2	53.9	-	100	
8.	Workshop organisation skill	No.	-	7	64	19	12	102	3.35
		%	-	6.9	62.7	18.6	11.8	100	
9.	Problem- solving skill	No.	-	30	52	14	6	102	2.96
		%	-	29.4	51.0	13.7	5.9	100	
10.	Innovation capacity	No.	-	11	29	52	10	102	2.60
		%	-	10.8	28.4	51.0	9.8	100	
11.	Relevance of skill acquired to the labour market	No.	-	27	55	20	-	102	2.93
		%	-	26.5	53.9	19.6	-	100	
	<b>Aggregate Average</b>	<b>No</b>	<b>-</b>	<b>17</b>	<b>49</b>	<b>30</b>	<b>6</b>	<b>102</b>	<b>3.35</b>
		<b>%</b>	<b>-</b>	<b>16.7</b>	<b>48.0</b>	<b>29.4</b>	<b>5.9</b>	<b>100</b>	

Note: VL=Very Low, L= Low, F=Fair, H=High, VH=Very High

### Perceived level of polytechnic college trainers' competence

Evaluation of teachers' competence by relevant stakeholders is useful to improve the quality of education and training, particularly in the TVET system. In this scenario, the researcher was interested in collecting data about the level of teachers' competence, and the information was presented and analysed as follows:

**Table 3: Level of Trainers' Competence**

No.	Items	Response								
			VL	L	F	H	VH	Total	Mean	Sig.
1.	Skill-related Competencies	No.	9	61	214	65	2	351	2.99	.037
		%	2.6	17.4	61.0	18.5	0.6	100		
2.	Knowledge-related Competencies	No.	7	65	180	97	2	351	3.02	.000
		%	2.0	18.5	51.3	27.6	0.6	100		
3.	Managerial Competencies	No.	7	84	177	81	2	351	3.02	.003
		%	2.0	23.9	50.4	23.1	0.6	100		
4.	Social Competencies	No.	33	40	194	77	7	351	2.96	.000
		%	9.4	11.4	55.3	21.9	2.0	100		
5.	Assessment-related Competencies	No.	17	94	142	83	15	351	2.99	.000
		%	4.8	26.8	40.5	23.6	4.3	100		

Note: VL=Very Low, L= Low, F=Fair, H=High, VH=Very High

As can be seen in Table 3, the majority of respondents (students, graduates, teachers, and administrators) replied that the level of trainers' competence was fair in all dimensions of competence. The Pearson Chi-Square test results for all dimensions of trainers' competence indicate a P-value of less than 5%, which is significant at a 95% level of confidence. This implies that there is an opinion difference among the respondents regarding the indicators of teachers' competence.

The finding on the level of trainers' competence is corroborated by the findings of Abdullah et al. (2019) and Rofiq et al. (2018), who found that the levels of vocational and technical trainers were at a moderate and good level, respectively. However, the findings of the current study are contrary to those of Omar et al. (2020), who found that the level of TVET trainers was high.

### The effect of teachers' competence on employability of polytechnic college graduates

The study employed mean and standard deviation to analyse the effect of teachers' competence on the employability of polytechnic college graduates. The descriptive statistics result clearly indicated that there was a moderate-to-fair perceived effect of trainers' competence on graduates' employability. As can be seen from Table 4, the mean index of effect was 3.00, implying that the majority of respondents perceived that trainers' competence has an effect on graduates' employability. It could also be noted from the mean rank results that managerial competence and knowledge-related competence were the foremost variables of trainers' competence to impact the employability of polytechnic college graduates.

**Table 4: Descriptive Statistical Analysis**

List of competences	N	Mean	Std. Deviation	Mean Rank
Managerial Competence	351	3.0262	.63163	1
Knowledge-related Competence	351	3.0262	.54181	1
Skill-related Competence	351	2.9991	.51945	3
Assessment-related Competence	351	2.9957	.71613	4
Social Competence	351	2.9651	.71576	5
Grand Mean (Index)	351	3.0025	.53204	

## Inferential statistics

### Correlation between trainers' competence and employability of polytechnic graduates

The study sought to establish relationships between study variables. The Pearson Coefficient's result indicated that the correlation value for each variable was positive and ranged between (0.5079 and 0.7909). The association between the trainers' competences and graduate employability was significant, with their respective P-values less than 5%, meaning that all correlation values between variables were significant. Therefore, the correlation results revealed that the association between the trainers' competences (skill, knowledge, managerial, social, and other competencies) and graduates employability was positive and significant. This implies that an increase or improvement in any of the trainers' competences is associated with an increase or improvement in the employability of graduates.

**Table 5: Correlation Values between Variables**

Variables	Employability	Skill	Knowledge	Managerial	Social	Assessment
Employability	1.00					
Skill	0.5185**	1.00				
Knowledge	0.6280**	0.5481**	1.00			
Managerial	0.6113**	0.5642**	0.6461**	1.00		
Social	0.5905**	0.5673**	0.6580**	0.7909**	1.00	
Assessment	0.6434**	0.5079**	0.6622**	0.7333**	0.7469**	1.00

\*\*Correlation is significant at the 0.01 level (2-tailed)

### Multiple linear regressions (MLR)

MLR was the econometric model used in this study to examine the effect of trainers’ competence on the employability of graduates. The adjusted R<sup>2</sup> (0.509) indicated that about 51% of the variation in employability of polytechnic graduates was attributed to trainers’ competence. This is true because the F(5, 345) = 73.46 is found statistically significant at p-value of less than 1% (p = 0.000), which shows the significance of the model in predicting how trainers’ competence influences the employability of polytechnic graduates in Dire Dawa. The MLR results indicated that there is a positive and significant effect of competencies related to skill, knowledge, managerial, and assessing and evaluating students on employability of polytechnic college graduates in the Dire Dawa administration. Based on the result of inferential statistical analysis, the study found that trainers’ competence (such as skill, knowledge, managerial competencies, and assessment-related competencies) has a significant effect on the employability of graduates.

**Table 6: Multiple Linear Regression Results**

Model Summary		Sum of Squares	df	Mean Square	F ( 5, 345)	=	73.459	
Model		75.387	5	15.077	Prob > F	=	0.000	
Residual		70.810	345	.205	R-squared	=	0.516	
Total		146.197	350	15. 282	Adj R-squared	=	0.509	
Coefficients								
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	.427	.160		2.661	.008	.111	.742
	Skill	.179	.060	.144	2.984	.003	.061	.296
	Knowledge	.311	.066	.260	4.726	.000	.181	.440
	Managerial	.149	.069	.146	2.174	.030	.014	.285
	Social	.010	.062	.011	.161	.872	-.112	.133
	Assessment	.255	.056	.283	4.519	.000	.144	.366
a. Dependent Variable: Employability								
b. Predictors: (Constant), Skill, Knowledge, Managerial, Social, Assessment								

As can be seen from the estimates of regression coefficients in Table 6, positive and significant relationships were found for the independent variables: skill-related competence ( $B = .179$ ,  $p = .003$ ), knowledge-related competence ( $B = .311$ ,  $p = .000$ ), managerial competence ( $B = .149$ ,  $p = .030$ ), and assessment-related competence ( $B = .255$ ,  $p = .000$ ). An independent variable with a higher beta value ( $B$ ) has a stronger effect on the dependent variable, thus knowledge-related competence is the best predictor of Polytechnic graduates employability, followed by assessment-related competence, skill-related competence, and managerial competence. Therefore, improvement or change in these variables of trainers' competence will significantly increase the employability of polytechnic college graduates in Dire Dawa. The results of the relationship between the various indicators of trainers' competence and graduate employability are consistent with previous studies reviewed in the literature part.

## Conclusions and recommendations

### Conclusions

The far-reaching purpose of this research was to examine the effect of trainers' competence on the employability of graduates in government polytechnic colleges under the Dire Dawa administration. Based on the analysis of the study, the following conclusions were worth drawn: From the results of the descriptive statistics, it was noted that the technical teacher recruitment process was lengthy and newly recruited teachers did not arrive on time. Besides, most respondents perceived that the recruitment was not based on rules and regulations, and as a result, favouritism might occur. It was also reported that polytechnic colleges were not autonomous in recruiting teachers for their training programs. The results of the analysis indicated that teachers had a fair level of competence when they were in the training process before graduating from a technical university. The results of the descriptive statistics also indicated that the perceived level of competence of polytechnic college teachers was fair. The correlation analysis revealed that there is a significantly positive association between trainers' competence and graduates employability. Based on the regression analysis, it was noted that predictors such as knowledge-related competence, assessment-related competence, skill-related competence, and managerial competence had significant and positive effects on the employability of polytechnic college graduates in Dire Dawa. Among these, knowledge-related competence was the foremost predictor of graduate employability. These findings are consistent with previous literature discussed so far in the literature review part. Social competence was not a significant variable that predicted the variation in graduate employability.

### Recommendations

The study concluded that the academic staff (trainers and administrators) of the polytechnic colleges perceived a lengthy recruitment process in which newly recruited teachers did not arrive on time, the recruitment process was not ruled and regulations-based and subject to nepotism, and there was a lack of autonomy in recruitment. Hence, the trainers' recruitment process for pre-service upgrading needs to be revisited. Moreover, mechanisms should be devised in order to enhance the level of trainers' competence, as it has a positive impact on the employability of graduates. Specifically, the development of knowledge-related competence, assessment-related competence, skill-related competence, and managerial competence should be considered for polytechnic teachers to be competent enough to produce competent graduates who are capable of meeting the current requirements of the labour market and industries. More importantly, this research recommends that technical colleges and universities that are producing technical and vocational teachers integrate these competencies into their curricula for teacher education.

## Study Limitations and Areas for Future Research

Though the findings of this study contribute to the existing body of knowledge and literature, further studies are required to deal with topics that this particular research did not cover, such as studying teachers' competence from the perspectives of employers, labour market situations, and government policies. Further, a limited number of variables were included in the study, and hence future studies should consider other variables, such as personal and contextual, that were not considered in this study model. The sample for this research is restricted to administrators, trainers, students, and graduates of government polytechnic colleges in Dire Dawa, and the results cannot be generalized to private and other training institutions in Dire Dawa. Moreover, the sample is limited to the few polytechnic colleges in Dire Dawa city, and the effects of the trainer's competence on graduate employability might vary from city to city. Hence, a comparative analysis among polytechnic graduates and students of different cities in the country is advisable. The research methodology of this study is limited to a quantitative survey method with a cross-sectional design. Methodologically, a mixed-research design is recommended for future studies to have a broad and comprehensive analysis of the subject.

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