A history of technical education in Ethiopia: The case of the Polytechnic Institute, 1963-2000

Fantahun Ayele (Ph.D)
Associate Professor, Department of History, Faculty of Social Science, Bahir Dar University

Abstract

This research aims at exploring and analyzing the history of the Polytechnic Institute from its establishment in 1963 to its transformation as the Faculty of Engineering in 2000. The study is mainly based on the consultation of priceless archival documents kept in the record office of the former Polytechnic Institute (now Bahir Dar Institute of Technology). In addition, attempts have been made to substantiate archival sources by gathering oral evidence from pertinent people including the first graduates of the Polytechnic Institute. The information gathered from archival documents (letters, reports, graduation bulletins, newspapers, etc.) and interviews has been carefully examined, cross-checked, interpreted, and analyzed to reconstruct the history of the institute. The findings of the study show that the Polytechnic Institute was the result of the Cold War rivalry between the two superpowers, the United States and the former Soviet Union. When the U.S. government turned down his request for increased military assistance, Emperor Haile Selassie paid an official visit to Moscow in 1959. Among other things, the Soviet government offered financial assistance that led to the establishment of the Bahir Dar Polytechnic Institute in 1963. The Soviet government also supported the institute by assigning technical advisers and instructors, whose number grew substantially after the 1974 revolution. The ideological solidarity between the two countries brought more scholarship opportunities to the students and instructors of the Institute. In 2000, the union of the Polytechnic Institute and Bahir Dar Teachers College gave rise to the birth of Bahir University. In the last sixty years, the Institute has produced world-class technologists.

ARTICLE HISTORY
Received: 10 June, 2023
Accepted: 09 December, 2023

KEYWORDS
Technical education, polytechnic institute, training, technology, graduates, Bahir Dar University.

Introduction

The first attempt to introduce technical education in Ethiopia was made by Emperor Tewodros II (1855-1868). He seems to have the conviction that young Ethiopians with technical skills could support European workmen who were engaged in the manufacture of mortars at the Gafat foundry. To that end, he established the first technical school at Gafat in the early 1860s (Bahru, 2002). The establishment of the technical school and the foundry were part and parcel of his modernization program. However, the turbulent political atmosphere that was prevailing at the time did not allow Tewodros to implement most of his reforms.

CONTACT Fantahun Ayele fantahun@gmail.com

DOI: https://dx.doi.org/10.4314/bdje.v24i1.7

It was only after Ethiopia's liberation from the Italian occupation that the government decided to introduce technical and vocational education. Accordingly, the first technical school in Ethiopia was established in 1942. It was named the Addis Ababa Technical school, better known as *Tegbare Ed*. Students who completed their junior secondary education were admitted to a four-year training program. The school was offering training in auto mechanics, carpentry, welding, and electricity. Likewise, the Asmara Vocational School came into existence in 1952. Like the Addis Ababa Technical School, it had a four-year training program. The training program included forging and welding, auto mechanics, carpentry, electricity, and machine shop (Young & Ross, 1965).

Because of the growing demand for trained manpower in the industrial sector, the Imperial Government of Ethiopia wanted to expand technical education. As a result, in addition to the existing technical schools in Addis Ababa and Asmara, the government decided to open another technical school in Bahir Dar.

Problem Statement

It is now sixty years since the establishment of the Bahir Dar Technical High School which was later renamed the Polytechnic Institute. In those sixty years, the institute has produced a great number of technologists in six fields of study. Some of its graduates have earned fame and glory by working in hi-tech companies like NASA, Boeing, and Airbus. The Institute has therefore contributed immensely to national and global development. Despite its remarkable achievement in producing highly qualified technologists, no comprehensive research has been done on the establishment and development of the Polytechnic Institute. This study thus attempts to fill this enormous research gap.

In the absence of any research undertakings on the history of the Polytechnic Institute, the current study is of immense importance. In the first place, the study will serve as a major reference for general readers who need to know about the inception, establishment, and development of the Polytechnic Institute from a historical perspective. Secondly, the study is believed to benefit education experts who want to examine curriculum revision and the changes in the training programs. Thirdly, since the Institute was the result of the support provided by the former Soviet Union, the study will help policy makers to explore the advantages of bilateral relations. Finally, the study will help the alumni themselves to know more about the historic journey of their Institute.

The current study tries to answer the following key questions: (1) How did the Polytechnic Institute evolve from a technical high school to a technical college, and then to a technology institute? (2) What factors led the institute to revise its training programs frequently? (3) What challenges did graduates face in getting employed? (4) What kind of staff recruitment and development activities were implemented? (5) What was the contribution of the institute to the overall development of the country?

Methods

The study employs a historical research methodology. It involves the gathering of vital information from primary sources mainly archival documents and interviews. The

researcher was fortunate to get access to the rich archival documents carefully kept at the record office of the former Polytechnic Institute, now the Bahir Dar Institute of Technology. The archival documents include letters (exchanged between the Institute and the Ministry of Education, Higher Education Commission as well other organizations), reports, statistical figures, graduation bulletins, etc. Among these enormous priceless documents, the researcher has selectively used 31 of them based on their relevance to the study such as recruitment of trainees, admission policy, training programs, attrition, curriculum revision, staff development and problem of unemployment.

In addition to the gathering of data from such priceless archival documents, attempts were made to identify and interview pertinent people who were the first employees and graduates of the Institute. The oral information obtained through interviews was used to substantiate the data gathered from archival documents. The interviewees were purposely selected because of the fact that they were the first graduates of the Polytechnic Institute residing in Bahir Dar. The rest were owners of the land where the Institute was established. One of them was the first employee of the Institute who could narrate the history of the Institute during its formative years.

Besides, published sources like graduation bulletins, yearbooks and newspapers were also consulted. Finally, the information gathered from primary and secondary sources were carefully examined, cross-checked, interpreted, and analyzed to reconstruct the history of the Institute. The data collected from archival documents, interviewees as well as published and unpublished sources were carefully examined to ensure the validity, authenticity and trustworthiness of the findings under discussion.

With regard to ethical considerations, all respondents have been informed about the purpose of the interview conducted with them and the researcher has managed to get their consent to use the information obtained from them for research purposes.

Results and Discussion

Inception, Construction, and Inauguration

The Bahir Dar Technical High School which was later renamed the Polytechnic Institute, can be best described as the fruit of Emperor Haile Selassie's capability in skillfully exploiting the rivalry between the two superpowers, (i.e., the United States, and the former Soviet Union) during the Cold War. In May 1953, the governments of Ethiopia and the United States signed a mutual defense agreement for a period of 25 years. The agreement allowed the United States to use Kagnew Station as communications base in Asmara, Eritrea, for defense communication, intelligence gathering, and submarine and satellite tracking purposes. In return, the U.S. government agreed to provide military assistance to Ethiopia (Lefebvre, 1998).

As the independence of Somalia became imminent, the Ethiopian government insisted that the United States should substantially increase its military assistance to Ethiopia. When Washington rejected Ethiopia's request, Emperor Haile Selassie warned that he would be forced to turn to the east to get the required arms. As Lefebvre (1998) rightly puts it, "the primary pawn in the Emperor's game of diplomatic blackmail was a vital communications

base," i.e., the Kagnew Station." Accordingly, between June 30 and July 13, 1959, Emperor Haile Selassie paid an official visit to Moscow and held discussions with the Soviet premier, Nikita Khrushchev (Boavida, 2010). Fortunately, the Emperor's visit to the Kremlin coincided with Khrushchev's decision to support developing countries of Africa to enhance Soviet strategic interests (Guan-Fu, 1983). During his fortnight stay, the emperor visited Moscow, Leningrad, Yalta, Sochi, and Stalingrad. In addition to the awards of an honorary degree and the highest military order, the Emperor received an IL-14 twin-engine plane bearing an imperial coat of arms and a flag of Ethiopia as a gift from the Soviet government. Most importantly, the Soviet government gave Ethiopia a long-term credit of 400 million rubles ($100 million) with low interest rates to support its industrial and agricultural development endeavors. In order to strengthen bilateral relations between the two countries, the Soviet government decided to build a technical school in the city of Bahir Dar as a gift to the government and people of Ethiopia (Yakobson, 2009).

The structural design prepared by the Soviet government was given to *Ato* Tsegaye Belayneh, an Ethiopian contractor selected to build the technical school. Accordingly, on April 29, 1961, a tripartite agreement was signed between Minmontazhspetzsstroy of the Russian Soviet Federative Socialist Republic (RSFSR), now the Russian Federation, the All-Union Export-Import Corporation Tiajpromexport (a construction company owned by the USSR government), and *Ato* Tsegaye Belayneh (Jan-Moscov Museum). Then, on December 30, 1961, the emperor laid the cornerstone for the establishment of the technical school (Interviewee 04). Since then, the emperor had become a regular visitor to the Polytechnic Institute, attending graduation ceremonies as a guest of honour. That shows the special importance given to technical training by the emperor.

Construction began in May 1962 in an area called Shum Abbo, located on the northeastern edge of the town of Bahir Dar and a stone's throw away from Lake Tana, the largest freshwater lake in Ethiopia. The construction site was originally open grassland bounded by Lake Tana in the west, a swampy area in the east, and scattered residential quarters in the north and south (Interviewee 02).

The construction of the technical school was completed in May 1963. On October 28, 1964, the counselor on economic affairs of the Embassy of the USSR gave a certificate to the contractor, *Ato* Tsegaye Belayneh, assuring him that the technical school was built in accordance with all technical and architectural standards set in the agreement (Interviewee 05).

Finally, on June 11, 1963, the emperor came back to Bahir Dar to inaugurate the Bahir Dar Technical School. Because of the heavy Soviet involvement in construction and training activities, the technical school was sometimes known as the "*Moscov Temhert Bet*" (Moscow School) by the local people (Interviewee 02). Despite the inauguration of the technical school, construction was still going on. Until the completion of the dormitory block, trainees were temporarily sheltered at Lake Tana High School. As a temporary measure, the large warehouse in the campus was converted into a dormitory to accommodate some of the students during the second academic year. By the end of 1964, the construction of the dormitory block was completed, and the institute began to accommodate all incoming students. A decade later, the Institute managed to provide on campus residential facilities to

the first entrants of the newly established Academy of Pedagogy which was under construction at a place called Tebabit (Interviewee 01).

Recruitment, Admission, and Training

At the time of its establishment, the technical high school had the objective of training highly skilled technicians in the fields of technology to meet the country's needs for skilled manpower and thereby close the gap between middle and higher technical personnel.

Initially, it was planned to admit the best students who had scored highest grades in the eighth-grade national examination and train them for four years in five fields of study: agro-mechanics, electrical technology, industrial chemistry, textile technology and wood technology. Accordingly, 232 top ranking students were carefully selected and admitted for a four-year training program. Their registration took place between September 28 and 29, 1963, and classes started immediately afterwards. Presumably because of the strong gender bias against women, all trainees were male students. It was highly unfortunate that female students were not given the chance to join the school in the first five years (Poly Archives 01).

When training began by the end of September 1963, there were 14 Soviet instructors to teach major area courses. In addition to Soviet instructors, 12 Ethiopian and 2 Indian teachers were employed to teach general academic subjects like Amharic, English, mathematics, physics, and history. Soon after the beginning of classes, it became abundantly clear that the courses designed by Soviet experts were too advanced for students who had just completed their junior secondary education (Poly Archives 19).

For instance, a student who joined the department of textile technology was expected to take nine courses (Amharic, mathematics, physics, general chemistry, English, ethics, engineering drawing, general metals, and general wood) during the first year. Then, in the second year, a trainee had to take eleven courses (Amharic, mathematics, English, history, ethics, engineering drawing, engineering mechanics, metal technology, textile fibers production, spinning production technology and equipment, and textile shop).

In the third year, a student in the same field of study had to take courses like mathematics, English, history, engineering mechanics, industrial electricity, spinning production technology and equipment, textile shop and weaving production technology and equipment. The courses offered in the fourth year included economics, fundamentals of thermotechnics and hydraulics, ventilation and air conditioning, fabrics finishing, weaving production technology and equipment, maintenance and repair of equipment, production planning and management, textile shop and diploma project. These courses were thus too tough and highly demanding for those students who had just completed their eighth grade (Poly Archives 27).

Not surprisingly, that resulted in high attrition rates. Among the 232 trainees, 65 students (about 28%) were academically dismissed from the school at the end of the first academic year. Of the remaining 167 students, 50 were promoted with probation. Those who managed to pass were given summer courses during the rainy season to compensate for the subjects given in grades nine and ten (Poly Archives 19).

In order to redress this serious problem, the school conducted an urgent study and revised its admission policy. It soon decided to admit students who successfully completed their tenth grade with high scores in English, chemistry, mathematics, and physics. For further screening, the school prepared an entrance examination. In September 1964, the school thus admitted a second entry of 351 students who completed their tenth grade and passed the entrance examination. Trainees of the second entry were expected to take general education courses during the first year. It was thought that, while taking such courses, they would get ample time to think over their area of interest so that they could choose their field of study by the end of the first year. Upon the admission of the second entry in 1964, the Technical School was renamed "the Polytechnic Institute" (PTI) (Poly Archives 01).

Though significantly reduced, there was still a considerable attrition rate among the second entry. Of the 351 students, 54 (15.38%) failed to pass to the second year. Those who completed the first-year general education courses were required to choose their field of specialization. The remaining three years were devoted to intensive specialized training in the five fields of study. In September 1966, the institute launched metal technology as its sixth field of study (Poly Archives 01).

On July 1, 1967, a colorful ceremony was held to mark the graduation of the first batch of 151 technologists in the presence of the emperor. In addition to Mr. Leonid Teplov, the Soviet ambassador in Ethiopia, the emperor was accompanied by Crown Prince Asfaw Wossen, *Leul Ras* Imru Haile Selassie, Prince Wossen Seged Mekonnen, Commander Iskinder Desta (Deputy commander of the Navy), *Lij* Kassa Wolde Maryam (President of Haile Selassie I University), Akaleworq Habtewold (Minister of Education and Fine Arts), Million Neqniq (Vice Minister of Education and Fine Arts), Ambassador Yilma Deressa (Minister of Finance), Dr. Haile Giorgis Worqneh (Vice Minister of Labor), and *Tsehafe Tizaz* Tefera-Worq Kidanewold (Minister of the Palace) (MoI, 1967).

While delivering his convocation speech, the emperor earnestly expressed his gratitude to the Soviet government not only for constructing majestic buildings but also for furnishing all the workshops with training equipment and machinery. Among other things, he underlined that the graduates should serve their country with the knowledge they acquired and join the government in its endeavor and aspiration to build the new Ethiopia. He also reminded them of their responsibility by saying: "As you are the first graduates of the Institute, you deserve to feel a special sense of esteem. However, esteem would not be obtained alone; it goes along with responsibility." Finally, he reminded them to be grateful to the instructors who rigorously trained them and to pay back to their country, which invested much in their training (MoI, 1967).

Abraham Belay, who was one of the first graduates, still vividly remembers the excitement and jubilation he felt while receiving his diploma from the hands of the emperor. He also recalls the fatherly advice of the emperor to all the graduates (Interviewee 01).

On his part, *Ato* Million Belete, Director of the Institute, advised the graduates to be ready for the challenges ahead. Part of his speech reads:

> We have not given you solutions to all the problems you will face, but we have given you principles and guidelines with which you can solve your problems. We have not answered all your questions, but we have shown you where and how you could get answers to them. … As you go into industries and other fields of employment, you

> will encounter something that you might not have seen before. You might be asked to operate or repair a machine that is new to you. Admit your position … and tackle the problem (Polytechnic Institute, 1967, p. 5).

Fortunately, twelve graduates who completed their training with great distinction from all departments were employed by the Institute as graduate assistants. A year later, they were granted scholarships to pursue their studies, mainly in the United States of America and some in the USSR (Interviewee 01). It is also worth noting that among the first graduates, three of them (Shibabaw Belay, Befekadu Mesfin, and Tesfaye Behri) later served as directors of the Institute (Polytechnic Institute, 1967).

Curriculum Revision and Job Opportunities

Soon after this historic ceremony, the Institute undertook a thorough curriculum revision and decided to phase out the four-year training program mainly to improve the employability of its graduates. A two-year college level training program was designed and launched in September 1968. Then, the Institute sent invigilators to all high schools throughout the country to administer an entrance examination to select interested applicants from among those who passed the Ethiopian School Leaving Certificate Examination (ESLCE). By September 1968, 585 students who passed the entrance examination were admitted to the institute. Until June 1971, however, the two training programs were run in parallel until students admitted to the four-year program could complete their studies (Poly Archives 01).

On August 15, 1970, Emperor Haile Selassie was back in Bahir Dar for the sixth time. Like the first batch, the 1970 graduates were fortunate to receive their diplomas from the hands of the emperor. In the commencement speech he delivered on the occasion, the emperor underlined the need for continued Soviet support, and the heavy responsibility of the graduates to play a leading role in the country's development. Above all, the emperor urged the graduates to play a key role in emulating the Japanese type of development by saying:

> The dramatic and admirable progress that Japan has been able to achieve in less than three decades, especially after World War II, enabled her to be among the ranks of the leading industrial nations of the world. There is a lot that we in Ethiopia can learn and adapt from the Japanese experience in this regard. This is why we have given great importance to our recent visit to Japan… If we, in Ethiopia, are set in the right direction, the question of accelerated development will no doubt be [a reality] … It is, therefore, essential that you, the graduating class, should think and work more for the benefit of your country and people in your future assignments than for your individual interests. Because of the importance we attach to this institute, we always watch your progress closely and with keen interest. We often come to this place not only to award diplomas but also to remind you of the heavy responsibilities and obligations that await you (Poly Archives 05, pp. 1-3).

Initially, the possibility of being unemployed was not an issue among graduates. When they saw some companies visiting the institute to recruit the best graduates, they felt

quite confident in their employability. On March 24, 1970, for instance, managers of the H.V.A. Ethiopia Share Company paid a visit to the Polytechnic Institute. During their visit, the managers promised that they would employ graduates from the departments of industrial chemistry and agro-mechanics as foremen and station them at Wonji, Shoa, or Metehara Sugar factories. The graduates would be paid a monthly salary of 300 birr for the first six months, and then their payment would be raised to 328 birr. They would be provided with free housing, medical care as well as water and electricity services. After interviewing and administering aptitude tests at the institute, the managers decided to offer jobs to 10 industrial chemistry and agro-mechanics prospective graduates given that they were medically fit for the job.

On August 13, 1971, however, the Managing Director of H.V.A. Ethiopia wrote a letter of regret to the Polytechnic Institute, informing the Director that the training program was not in conformity with the requirements of the company. Part of the letter reads:

> It is quite clear … that our industry's needs are not in complete agreement with the training being given at Bahir Dar. We do not insist on tailoring [your training] to our needs. We do, however, believe that a dialogue between those who plan the training and the industries who employ the students that are trained positively influences the imbalance that has been stated above (Poly Archives 02, p. 1).

That was a signal for the graduates about the hard times ahead. It was becoming gradually evident for the trainees that the problem of unemployment was just around the corner.

Measures Taken to Curb Problems of Unemployment

One serious and persistent challenge that the Polytechnic trainees faced in the wake of their graduation was the dreadful problem of unemployment. Gradually, it became quite clear that the job market could not absorb all the technologists trained by the Institute. As a result, many of the Polytechnic graduates were forced to seek jobs in areas unrelated to their fields of specialization. A significant number of them ended up in the teaching profession in junior and senior high schools. That was disheartening not only to the graduates but also to their instructors and the Institute's administration. For instance, in his letter to the General Manager of the Ethio Foam and Thermoplastic Industry, Hassabaleh Yehdego, head of the Textile Department, expressed his lamentation as follows:

> …We are constantly baffled with the painful fact that the majority of our graduates are roaming the streets of Addis Ababa until some of them, thanks to the expanding demand for teachers in the Ministry of Education are forced into the teaching profession as physics and math instructors in provincial high schools. We are convinced that such a state of affairs is a gross misallocation of the country's scarce trained manpower … (Poly Archives 24, p.1).

The other problem was that since the Soviet instructors had been teaching them, graduates were suspected of spreading communist ideas among workers in the organizations in which they would be employed (Interviewee 01).

Sometime before every graduation, the Institute used to ask potential employers if they had vacancies for the graduates of the Polytechnic Institute. Most companies, like Mosvold Ethiopia Ltd., St. George and Meta Abo Breweries, usually responded negatively.

In an attempt to alleviate the problem, the Institute took several concrete measures. One such measure was an aggressive campaign to create awareness among potential government and private employers. Once the institute identified as many potential employers as possible, it dispatched letters announcing the graduation of technologists in six fields of specialization. These letters carried graduate profiles of all the training programs. The identified employers included sugar, cement, cotton, and textile factories, breweries, as well as government and private business and industrial firms (Poly Archives 17).

Moreover, the Institute tried to find out the needs of potential employers by sending questionnaires. Through those occupational market surveys, the Institute attempted to know, among other things, the required level of training the different companies needed, the general and technical courses required for employment, the duration and type of on-the job training they had been offering, the kind of specialization and skills required, the number of vacancies available, as well as the minimum and maximum salaries of the employees.

Then the team paid personal visits to those possible employers. During such visits, the Institute's administration attempted to find out not only the training needs of the potential employers but also their evaluation of the Polytechnic graduates if they had already employed some of them. For instance, between January 8 and 16, 1974, a team of directors and department heads from the Institute visited potential employers like the Pasteur Institute, the Ethio Pharmaceutical Manufacturing Share Company, the Ministry of Mines, the HVA-Shoa Sugar Factory, the Addis Ababa Cement Factory, the Bottling Company of Ethiopia, and the St. George Brewery. Sometime earlier, the team had already dispatched letters to all those organizations so as to let them know the purpose of its visit.

The team received mixed responses from potential employers. While some of them showed their interest in employing the graduates of the Polytechnic Institute, others turned down the request for employment notifying that they had no vacancies (Poly Archives 17).

After a week-long visit to all those organizations, the team came up with the following recommendations:

- The Institute's curriculum could not be revised simply to meet the requirements of every industry in the country.
- There were some courses that might have extensive application and demand. For instance, courses like clinical chemistry and microbiology were in high demand in hospitals, food and beverage factories, nutrition, and research institutes, as well as pharmaceutical and manufacturing firms.
- Trainees should be acquainted with the analytical instruments used by many industrial firms ((Poly Archives 17).

Primarily because of the relentless efforts of the Institute's administration in dispatching letters and paying personal visits to potential employers, several companies began to show interest in employing graduates of the Institute (Poly Archives 17). On the contrary, a considerable number of factories kept on turning a deaf ear to the Institute's call

and made it clear that they had no vacancies whatsoever for the Polytechnic graduates. As a result, many graduates were still either unemployed or had to do other jobs unrelated to their training (Interviewee 01).

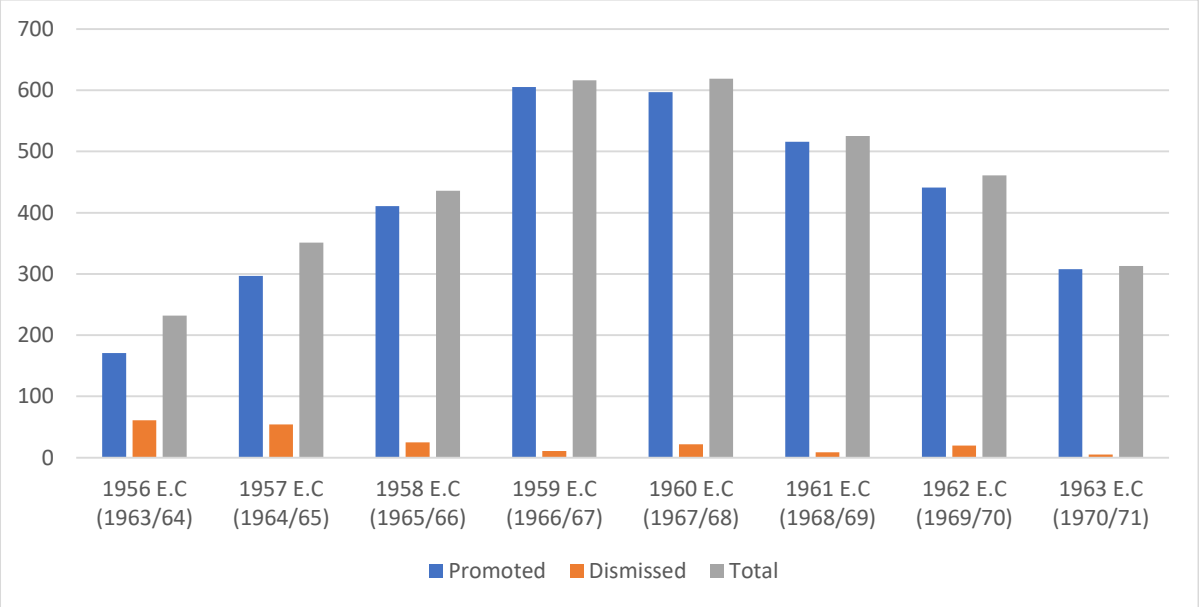
The other source of frustration was the fact that organizations like Ethiopian Airlines (EAL), the Imperial Board of Telecommunications of Ethiopia (IBTE), the Ethiopian Electric, Light, and Power Authority (EELPA), and the Municipality of Addis Ababa had already started to train their own technicians instead of employing the graduates of the Polytechnic Institute. Such training programs run by government organizations negatively affected the employment opportunities of the Poly graduates (Poly Archives 16).

Student Enrollment and Attrition

Although 1972 was a turbulent year as a result of violent student protest, the Institute managed to administer entrance examinations in 48 high schools located in all the 14 administrative regions to recruit trainees for the next academic year. The directors of secondary schools were expected to report the number of students who sat for the entrance examination to the Polytechnic Institute (Poly Archives 25, 26).

Figure 1

Student Enrollment (1963-1971)



Source. Poly Archives, Student Enrollment, 1963-1971.

Until the 1967-68 academic year, student enrollment was showing a steady increase. If we look at student admission in the first eight years, we can notice an almost normal distribution curve. Enrollment reached its peak when 616 and 619 students were admitted in the 1966-67 and 1967-68 academic years, respectively. Then, it declined to 313 in the 1970-71 academic year. Apparently, the problem of unemployment among the graduates might have discouraged students who had completed their secondary education from joining the Institute. In the meantime, attrition was continuously declining in those eight years.

In the 1980-81 academic year, there were 471 students and 44 instructors. Table 1 shows the distribution of students across the six departments:

Table 1

Student Enrollment (1980-1981)

No	Departments	Year I Students	Year II Students
1.	Agro-mechanics	70	33
2.	Ind. Chemistry	50	24
3.	Electrical Tech.	60	24
4.	Wood Tech.	30	12
5.	Textile Tech.	50	30
6.	Metal Tech.	60	28
7	Total	320	151
8	Grand Total	471	

Sourcee. Poly Archives 19, Study on the Possibilities for Maximum Student Enrollment, 1972 E.C.

Regarding the number of graduates, with the exception of 1970 and 1972, there was no marked rise or decline. Between 1967 and 1972, a total of 770 technologists graduated from the Institute. While the number of graduates rose to 182 in 1970, there was a sharp decline in 1972 to 30. The drastic decline in the number of graduates was primarily because of the disruption of classes and the expulsion of students because of the 1972 student protest. The table below shows the number of graduates between 1967 and 1972.

Table 2

Number of Graduates (1967 – 1972)

Academic Year	No of Graduates
1967	151
1968	121
1969	135
1970	182
1971	151
1972	30
Total	770

Source. Poly Archives 20, Study on the possibilities of the Polytechnic Institute for maximum student enrolment Graduates of the Institutes, 1972.

Following the outbreak of the 1974 revolution, the Institute began to admit a significant number of female students. As the number of students completing their secondary education dramatically increased during the revolutionary years, the few higher education institutions were urged to use their maximum capacity for student enrollment. Accordingly, the Higher Education Commission ordered the Polytechnic Institute to admit 500 - 600 students in the 1980-81 academic year (Poly Archives 09).

Staff Development

Right from the beginning, the Institute had a serious shortage of qualified Ethiopian instructors. Students complained that some of their instructors lacked professional knowledge and were found to be incapable of teaching. The critical shortage of qualified Ethiopians forced the Institute to employ Indian instructors. However, the Indians were not satisfactorily carrying out their teaching assignments. As a result, their mediocrity was usually one of the main sources of student dissatisfaction (Interviewee 01). The table below shows the shortage of highly trained instructors:

Table 3

Number of instructors across departments 1979 - 1981

Departments	Instructors (1979/80)		Additional Instructors (1980/81)	
	Lecturer	Diploma	Lecturer	Diploma
Agro-mechanics	3	-	1	3
Ind. Chemistry	4	-	2	2
Electrical Tech.	5	1	1	2
Wood Tech.	2	1	1	1
Textile Tech.	3	1	1	1
Metal Tech.	4	1	-	4
Total	21	4	6	13

Source. Poly Archives 19, Study on the Possibilities for Maximum Student Enrollment, 1972 E.C.

In order to solve the problem, the Institute began to employ graduates with outstanding results as technical assistants and instructors. After a one-year experience, they were granted scholarships by the Ministry of Education and Fine Arts to pursue their studies in the United States as well as in the Easter Bloc countries. In the 1971-72 academic year, there were 20 Ethiopian, 3 Indian, and 12 Soviet instructors (Poly Archives 18).

Following the outbreak of the Ethiopian Revolution in 1974, more scholarship opportunities were available for the academic staff because of Ethiopia's ideological alignment with the Eastern Bloc communist states. As a result, many instructors left for the former Soviet Union, the German Democratic Republic (GDR), Yugoslavia, Romania, Bulgaria, and Czechoslovakia to pursue their studies. Between 1979 and 1988, a total of 60 instructors were granted scholarships to pursue their studies. Among these, 53 went to various Eastern Bloc countries, and the rest went to Great Britain and India for further studies. Of these scholarship grantees, eight instructors left for PhD, 48 for MSc, and four for BSc studies.

Table 4

Staff Members on Study Leave (Abroad) - 1979/80

Country of Study	Desired Qualification		
	BSc	MSc/MA	PhD
Union of Soviet Socialist Republics (USSR)	-	15	6
German Democratic Republic (GDR)	-	21	-
Bulgaria	-	5	-
Yugoslavia	-	3	-
Rumania	-	1	-
Czechoslovakia	-	2	-
Great Britain	1	1	2
India	3	-	-
Total	4	48	8

Source. Poly Archives 09, Staff Members on Study Leave, 1979/80.

On the other hand, ideological solidarity helped the Institute to attract more instructors from the Soviet Union. However, the instructors from the Soviet Union were reported to be poor in English proficiency and that affected the classroom instruction. Despite that problem, the Ethiopian government continued to employ them. During the 1986-87 academic year, for instance, there were 31 Ethiopian and 19 Soviet instructors. Instructors from the Soviet Union continued to play key roles in offering major area courses in all the departments and serving as technical advisors. For instance, Dr. Yuri Bocharov was the first technical advisor of the institute. Since its establishment, a total of 250 instructors from the Soviet Union had been offering courses at the institute. In addition to their teaching assignments, Soviet experts also served as head of departments like industrial chemistry and textile technology. For instance, Mr. Nikolay Masepuro, who graduated from Leningrad Textile Institute was the head of the Department of Textile Technology in 1966 (Poly Archives 08).

The Revolution also brought some changes in the organization of ministries. The Ministry of Education and Fine Arts was, for example, renamed the Ministry of Education. Until 1976, it was the Ministry of Education that employed instructors for the Polytechnic Institute and allocated a budget annually. The Ministry of Education was also announcing scholarship opportunities to the academic staff whenever they became available. (Interviewee 01).

Between 1976 and 1985, two more administrative and curriculum changes were made. In early 1976, it was decided that the Ministry of Education should hand over the administration of the Polytechnic Institute and the Academy of Pedagogy to the Commission for Higher Education. Although the official handover ceremony was delayed for a couple of years, the Polytechnic Institute started to use the new governing body in its seal and letterhead immediately after the decision. Then the government issued a proclamation (109/1969) to legally bring the institutions under the Higher Education Commission. Both organizations agreed to jointly solve problems encountered during the transition period. On its part, the Commission agreed to properly administer the institutions and design short- and

long-term plans, including staff development, starting from the 1978-79 academic year (Poly Archives 06).

In addition to those administrative changes, the Institute once again revised its curriculum. In October 1985, therefore, the Institute raised its training program to three years and decided to award advanced diplomas to its graduates. Accordingly, in 1987, the first batch of 273 students graduated with advanced diploma. Until 1987, a total of 2,574 technologists were reported to have graduated from the Institute. Out of them, 100 were female graduates (Poly Archives 08).

Meanwhile, there was a growing demand from the residents of Bahir Dar and the surrounding areas for the opening of the evening program. Then, the Institute began to study the possibilities of launching the continuing education program at the advanced diploma program. Subsequently, on September 27, 1990, the Institute announced to all eligible applicants that it would start offering training in all the six fields of study starting from the second semester of the 1990-91 academic year. Applicants were required to score 2.4 points in the Ethiopian School Leaving Examination (ESLCE), and the result should not be older than three years. In addition, the Institute made it clear that applicants with "F" grades in English and mathematics could not be admitted to the evening program. The Institute also let the applicants know that successful students in the evening program would be awarded an advanced diploma after completing four and a half-year training (Poly Archives 15).

The Institute launched the evening program in January 1991. However, because of the ongoing civil war and the subsequent security problems, the Institute was forced to suspend classes on February 24, 1991. Following the change of government in May 1991, the Institute announced that evening classes would resume starting from August 7, 1991 (Poly Archives 03).

In the post-1991 period, the Institute continued to play a remarkable role in training technologists. Such marvelous success could not be imagined without capable leaders. The institute was led by able directors and deans who contributed a lot to its success. Although they were sometimes addressed as principals, the leaders of the Institute had the title of "director." Between 1963 and 2000, the Polytechnic Institute had 14 directors, some of whom are still alive. Below is a list of leaders who served as directors of the Institute between 1963 and 2000.

Table 5

Directors of the Polytechnic Institute (1963-2000)

No	Name	Term of Office
1.	Dr. Bekri Abdullahi	1963 - January 1964
2.	*Ato* Yifru Gebeyehu	January 1964 – 1965
3.	*Ato* Million Belete	1966 – 1968
4.	*Ato* Sileshi Mulatu	1968 – 1969
5.	*Ato* Beyene Bekele	1970 – 1974
6.	*Ato* Tibebu Kidane	May 1974 – December 1974
7.	*Ato* Tesfaye Behri	1975 – 1978
8.	*Ato* Shibabaw Belay	1979 – 1984

No	Name	Term of Office
9.	*Ato* Befekadu Mesfin (later Dr)	1984 – 1985
10.	*Ato* Gebeyehu Ayalew	1986 – 1990
11.	*Ato* Getachew Birru (later Dr)	1991- 1993
12.	Dr. Sileshi Zeleke	1994 -1996
13.	Dr. Gebray Asgedom	1996 – 1998
14.	*Ato* Gizachew Adugna	1998 – 2000

Source. Poly Archives 08, Brief Notes …, p. 5.

In its glorious past, the Institute has produced the best minds who won international fame. Some of the high-profile graduates of the Institute include the late Kitaw Ejigu, who worked as engineer for the Boeing Company in the United States, Professor Tesfaye Biftu, a prominent medicinal chemist with 95 registered patents, now living in the United States, Gebeyaw Embiale, a talented mechanical engineer working at Airbus, Daniel Mebratu, owner and manager of Dan Technocrat, (an Ethiopian company that produces traffic lights and elevators), Birhane Mewa, former president of the Ethiopian Chamber of Commerce, an entrepreneur and factory owner, Kiflu Tadesse, an author and former political leader, Engineer Gizachew Shiferaw, assistant professor at the Addis Ababa Institute of Technology, Wubishet Hailu, who is CEO of WATT International, the biggest engineering group in water and electro-mechanical works in the country, and Dr. Ing. Melak Mekonnen who is now working as NASA engineer (Interviewees 01 and 02).

On the other hand, the establishment of the Polytechnic Institute has been giving warmth and life to the growing resort city. Obviously, the institute has offered education and job opportunities to the residents of Bahir Dar.

Conclusion

The Polytechnic Institute was established in 1963 with the support of the Soviet government. It began an ambitious training program by admitting those students who had completed the grade eight national examinations with outstanding results. However, it soon began to face serious challenges. One of these was the high attrition rate of the trainees. As a result, the Institute had to make curriculum revision several times. Accordingly, the training programs were revised subsequently from 8 + 4 to 10 + 4, then to 12 + 3 and finally to 12 + 3.

The other daunting challenge for the Institute and its graduates was unemployment. Mainly because of the low level of industrial development in Ethiopia, the job market was unable to absorb all the graduates of the Institute. As a result, graduates were forced to either seek jobs unrelated to their area of training or create their own businesses. Especially for the latter, unemployment became a blessing in disguise. Some were able to create well-known companies and became affluent businessmen. A few of them managed to join international hi-tech companies like NASA, Boeing, and Airbus.

References

Published Sources

MoI. (1967). The first polytechnic graduates received diplomas. *Addis Zemen, Amharic daily newspaper*, 02/07/1967.

Bahru Zewde. (2002). *A history of modern Ethiopia 1866-1991*. James Currey.

Boavida, I. (2010). *The emperor of Ethiopia in Lusoland: Haile Selassie's state visit to Portugal in 1959 and the Birth of the OAU*. Centro de Estudos Africanos.

Fantahun Ayele. (2014). *The Ethiopian army: From victory to collapse 1977-1991*. Northwestern University press.

Guan-Fu, G. (1983). Soviet aid to the Third World: An analysis of its strategy. *Soviet Studies*, *35*(1), 71-89.

Lefebvre, A. Jeffrey. (1998). The United States, Ethiopia and the 1963 Somali-Soviet arms deal: Containment and the balance of power dilemma in the Horn of Africa. *The Journal of Modern African Studies, 36*(4), 611-643.

Polytechnic Institute. (1967). *1966-1967 Yearbook* [unpublished].

Yakobson, S. (2009). *The Soviet Union and Ethiopia: A case of traditional behavior.* Cambridge University Press.

Young, L.J & Ross, M. (1965). *Ethiopia: Vocational training and technical education*. UNESCO publication.

Archives

Poly Archives 01. (1964). *The historical development and the nature of the program offered at the Polytechnic Institute, mimeographed.*

Poly Archives 02. (1971). *A letter from managing director of HVA-Ethiopia to the Polytechnic Institute*. August 13, 1971.

Poly Archives 03. (1993). *A letter from the continuing education office to the director of the institute.* 15/07/91.

Poly Archives 04. (1972). *A letter to the Polytechnic Institute by an anonymous student*. 18/08/72.

Poly Archives 05. (1970). *Address of His Imperial Majesty on the occasion of 1970 graduation, Bahir Dar Polytechnic Institute.*

Poly Archives 06. (ND). *An agreement made between the Ministry of Education and Higher Education Commission.*

Poly Archives 07. (1986). *Annual Report*.

Poly Archives 08. (1986/1987). *Brief notes about the Polytechnic Institute.*

Poly Archives 09. (1979/1980). *Evaluation of department facilities for maximum student enrollment.*

Poly Archives 10. (ND). *Letter from head of the textile department to the general manager of the Ethio Foam and thermo plastic industry.*

Poly Archives 11. (1971/1972). *List of demands submitted by the Polytechnic Students*.

Poly Archives 12. (1971). *Minutes of a managerial meeting (27/12/72).*

Poly Archives 13. (1972). *Minutes of a managerial meeting (28/03/72).*

Poly Archives 14. (1972). *Minutes of a managerial meeting (03/03/72.*

Poly Archives 15. (1990). *Notice issued by the continuing education program (28/09/90).*

Poly Archives 16. (1979). *Ogbamikael Fissehaie, source of frustration.*

Poly Archives 17. (1974). *Report on Industrial tour*.

Poly Archives 18. (1971/72). *Staff profile.*

Poly Archives 19. (1979/80). *Study on the possibilities of maximum student enrollment.*

Poly Archives 20. (1972). *Study on the possibilities of the Polytechnic Institute for maximum student enrolment, mimeographed.*

Poly Archives 21. (ND). *The objectives of the library committee.*

Poly Archives 22. (ND). *The Polytechnic Institute library.*

Poly Archives 23. (ND). *The Polytechnic Institute.*

Poly Archives 24. A letter from head of the Textile Department to the General Manager of the Ethio Foam and Thermo Plastic Industry, ND.

Poly Archives 25. (1972). A letter from Emperor Yohannes Secondary School to the Polytechnic Institute, 17/04/72.

Poly Archives 26. (1972). A letter from Emperor Tewodros II Secondary School to the Polytechnic Institute, 02/0572.

Poly Archives 27. (1963). Course Breakdown.

Poly Archives 28. (1978). Ethiopian Electric, Light and Power Authority to Polytechnic Institute, 01/07/78.

Poly Archives 29. (1978). Textile Mills of Dire Dawar to Polytechnic Institute, 24/05/78.

Poly Archives 30. (1978). Bahir Dar Textile Mills to Polytechnic Institute, 07/01/78.

Poly Archives 31. (1978). Ambo Mineral Water to Polytechnic Institute, 08/06/78.

Interviewees

Interviewee 01. Wood technology first entry, interview by author, Bahir Dar, March 30, 2022.

Interviewee 02. Owner of Poly land, interview by author, Bahir Dar, April 19, 2022.

Interviewee 03. Electrical technology first entry, interview by author, Bahir Dar, April 18, 2022.

Interviewee 04. Employed in 1963, interview by author, Bahir Dar, March 21, 2022.

Interviewee 05. Phone interview with son of the first contractor. June 20, 2022.