One of the challenges facing Technical Vocational Education and Training (TVET) especially in public training institutions is the provision of adequate and relevant technical skills that are responsive to the labour market. Just like other organizations that are concerned with the quality of their products and services, the purpose of the study was to evaluate the effectiveness of Technical Education and Technical Training Programmes in Kenya. The study wanted to establish the state of the training infrastructure in the public technical institutions and the cooperation between the institutions and the industry. The study was also investigating whether there are any forms of industrial attachment and staff training and development programmes for technical teachers and the value the teachers attached to these programmes. Five (5) Technical Training Institutions, thirty two (32) lecturers and twenty four (24) final year engineering students were selected for the study. Also targeted for the study were five (5) line managers in private industry. The lecturers, students and line managers, were selected using stratified random sampling. The information from the technical teachers, students and line managers from the industry was obtained by use of a questionnaire and interview guide. The information received was analysed descriptively and simple descriptive statistics involving percentages were employed. The data was then presented in a descriptive form. The study revealed that the government together with the Technical Training Institutions had not provided adequate staff training and development courses to Technical Teachers as expected. Only 28% of the teachers had been sponsored for staff training and development courses while the majority who had not sought self sponsorship remained with their college grades with no value addition. Over 70% of the teachers reported that the state of training tools and equipment was either deteriorating or constantly poor. The study also revealed that industry participation in curriculum development meetings especially at K.LE. and at college level was minimal. This led to a situation where most of the Technical Training Programmes did not benefit from the direct inputs of technical managers, engineers, technicians and other professionals. The study revealed that only 42% of the trainees were attached to industries through their liaison officers and the rest were left to fend for themselves. 38% of those who got attachment places were not visited at all by their supervisors. This showed lack of seriousness in conducting industrial attachment programmes by training institutions. The study concluded that, Technical Teachers need to attend regular in-service and staff development courses to be able to impart to trainees adequate and relevant technical skills. The study also concluded that obsolete and warn out tools and equipment in training institutions need to be replaced. It was also concluded that collaboration between training institutions and the industry needs to be strengthened. The researcher suggests that T.I.V.E.T.A. should be made a body corporate to coordinate Technical Education and Training Programmes for all cadres of Technical Teachers and Technical Officers. T.I.V.E.T.A. should be mandated to operate so as to be in a position to co-ordinate, monitor and evaluate Technical Education and Technical Training Programmes being offered in both public and private technical training institutions. Further research should be carried out to cover a wider area and a larger sample in order to determine to what extent the constraints facing technical teachers affect the quality of Technical Education and Training Programmes in Kenya. A study on needs analysis of Kenya technical trainees vis-a-vis industry needs should be carried out to establish what relevant technical skills should be imparted to trainees in training institutions.