

# Journal of Science, Computing and Engineering Research (JSCER) Volume-8, Issue-6, June 2025.

DOI: https://doi.org/10.46379/jscer.2025.080606

# TQM IN EDUCATION- INFLUENCE OF COMPETENCY GAP BRIDGING EXERCISE

## Prahmjot jagga

Assistant Professor, College of Sciene and Arts, Kerala

#### **Article Information**

Received : 11 June 2025
Revised : 13 June 2025
Accepted : 14 June 2025
Published : 17 June 2025

Corresponding Author:

Prahmjot jagga

Abstract— This Total Quality Management is an innovative concept not only suitable in profitable or profit focused corporate but also essential in service sectors like educational institution. The quality of education absolutely lies with the quality of institution. The quality of institution lies on not infrastructure but the process or culture. This cultural transformation essential to bring pout the child to a new heights as the motto of education learning to live together in the society. The educational institution focus mainly on results and curriculum transactions and evaluation rather than empowering the students through empowerment of teachers. There is a need of wellness for both teachers and students in the form of spiritually, socially, physically, culturally and emotionally. A system should be developed called TQM. The concepts of TQM as said the process reformation need the assessment of competency gap bridging exercise which will give a clear understanding on what, how we can develop a suitable TQM strategy for the institution by energetising the most important components of Total Quality Management say Teachers and other human resources of the institution. This paper focus on giving a broad idea on what is education, what is TOM, why TOM and most importantly how TQM through competency gap bridging exercise training and development to elevate the educational institution to accomplish its social responsibility

Copyright © 2025: Prahmjot jagga, This is an open access distribution, and reproduction in any medium, provided Access article distributed under the Creative Commons Attribution License the original work is properly cited License, which permits unrestricted use.

Citation: Prahmjot jagga, "TQM IN EDUCATION- INFLUENCE OF COMPETENCY GAP BRIDGING EXERCISE", Journal of Science, Computing and Engineering Research, 8(04), April 2025.

### I. INTRODUCTION

Body of Paper Total Quality Management popularly known as TQM is the most confusing word used by different organization in different perspectives or different interpretations. There are many views on TQM, that is some people and organizations think that it is for getting certification from ISO,NABET etc or constructing beautiful building. Somebody think charging huge donations and preparing hard rule is TQM. Somebody think attractive gardens, or allowing the children to speak English only etc. What is actually total quality? According to Crozby, the father of modern management TQM is not a theory or principle nor a

rule or formula; it is the rational, pragmatic view on how to manage a situation. That is why I told you TQM is unique, which is not common; it aligned with the socio cultural environment. We cannot adopt a system of UK or Germany or Japan here in Karnataka or Kerala because the entire culture and both external and internal environment is different. At the same time the outcome will be same. The purpose of education is almost same as TQM. Education means EDU plus CO, which means bring out. We have to bring out all the qualities of children or all the potentials of children for living them happily in the society. UN said the

motto of education is learning to live together in the society. i have seen a school near in Kerala- Tamilnadu border a school run by a person for tribal children with his own child. I surprised how beautifully the children are using different languages and present their ideas without any building, rules and style. What is the name of the methodology of teaching children? Peadegogy, what is the meaning of pedagogy? Pead means child, gogo means to lead, where to lead, from darkness to brightness, from pessimism to optimism, from inferiority to self confidence, from dependency to independency from fear to courage. Whether we can produce these type of children through our education system is the most crucial and disturbing question. Who is responsible? We can't show any one. Everybody is responsible. Do we need a change? Otherwise I am sure our democracy will be going to mobo crazy, where no one can save us. Even now look the crime rates, cases of atrocities, rate of comfortable death; it is increasing alarmingly from educated world. At the same time we have world class schools and colleges, the number of universities is increasing, by 2030 India would be the youngest nation in the world where nearly sixty percent of people will be below 40 years. Without considering them if we follow the same system of education what will be the result? There lies the importance of TQM. Education and TQM goes hand in

hand. The result is same that is excellence. How we can create excellence? Through Transformation. Swamy Chinmayanda in his book Transforming Indians to transform India, quote that transformation means VISION PLUS ACTION, VISION MINUS ACTION IS IMAGINATION AND ACTION MINUS VISION IS CONFUSHION. IN Mahabharata war Kaurava has action but no vision and Pandava has vision but no action Lord Krishna with his vision and action lead the war, transform Arjuna and saved the world. The same way DonBosco developed Selesian preventive system, a system of education rather than punishment. When you look the transformation of John Bosco to Don Bosco you can experience it. Transformation is not an easy task. It requires self realization. Reception, transaction and transformation are the three steps for excellence. On the other hand let us explain like this. How many of you are satisfied on your institution and it total performance? How many of you are delighted? There is a gap between satisfactions to delight. These gaps to be filled, automatically TOM evolved. How it is possible. In an organization there are three components viz, input, process and output. Which is so important? Than input and output Process is important. So, proc

orientation is called transformation, which is called TQM. Process creates system, system maintains culture. Men may come and go, the institution exists for ever, provided the culture or system is strong. Process involves infrastructure, human resources etc. Carl Marx said in an organization where land, labour, capital are the important factors of production, labour is the most precious one, he quote it as perishable commodity. Therefore in TQM we have to focus more on human resources. In the early lines I mentioned the role of education in molding delightful, responsible and value oriented human resources. The child has to live happily in the world with a suitable career. They have to enjoy freedom, confidence, optimism and excellence throughout their life. A mere information mongering is not the concept of education. Learner should get experience. They should get chances to think critically and creatively. They should feel emotional disequilibrium in their thoughts. They will be able to take ethical decision at last. We have to assess whether our education system satisfy the above. Our children are not getting experience, not getting time for observation. Without incorporating the cognitive, affective and psychomotor domain, as Benchemin Blooms said how the learning will be effective. There should be rethinking on the curriculum transaction and evaluation. There was a time where we needed information through memorization and evaluation to solve the problems and decision making. But in this behavioral and data mining era, and the entire information is available on the tip of our fingers following the same style of curriculum transaction and evaluation is a big blunder and also a crime where our children will be useless without competing with artificial intelligence. We

need experience sharing, we need multi skills, we need tinkering labs for creative learning. We have to change mind set of education in to entrepreneurship. The fourth industrial revolution will be tsunami, an era of disruption which will throw out millions of job. The super AI, robotics, block chain technology Iot etc of course a reality now. Sometime we have to change education by teaching and training robots. Competency gap bridging analysis- a way to reach TQM As the most important part of any organization in bringing the institution in to total quality human resources of the organization should be empowered through training and development. Training not only impart the knowledge, but also improving and updating the knowledge, skills and attitude of people working there to fill the performance gap of employees which in turn molding them to reach to the total quality. Before the training and development the competency of each human resources within the organization should be scientifically analyzed based on the present and future needs. Competency gap bridging analysis helps the organization to prepare a detailed training need analysis and plan on empowering employees personally and professionally. Role of personal and professional excellence in Governance As told previously, the human resource as important in process orientation we have to concentrate more on

them for bringing TQM. Being the part of developing quality we have to understand the existence/purpose of our life. Understanding oneself is very important for transformation. Without knowing our self how we can transact and transform others. Therefore the first and foremost step in creating excellence is Reception. We have to be personally reached to the level of self actualization. The moment we reach into the level of self actualization excellence will come within us. Reaching to this step is not an easy task. Lord Buddha took 11 years, it does not mean taking long years, but grow the level of realization. In Hindu Veda it is called Swayam Dharma, which is the only way to reach in to Sanadana Dharma. What does it mean? The answer is very simple, .consider others, and reaches to fairness. When you are fair it leads to truthfulness, truthfulness leads to sincerity, which leads to ethics, ethics leads to values, values leads to contribution. contribution leads to achievement, achievement leads to peak performance, peak performance is called professionalism, which leads to Total Quality and the result is excellence. Reaching to excellence is not an easy task; it is a long journey from fairness to delight. As Abraham Maslow, the psychologist and Ramana Maharshi said, we have to overcome from the self esteem to reach the stage of realization. It does not mean escaping from the routine life it is the stage of living together with family friends and society happily. The second stage is called transaction. Transaction involves considering, understanding, accommodating and adjusting others. Unlike other countries in India we are running the schools not for the children but for satisfying the egos and expectations of parents. The teacher can understand the students only when she will be free from all the clutches of her external and internal environment. The darkness can be removed only by creating urge among children. All urges are vein save it with knowledge. All knowledge is swallowing save it with work. All work is foam save it love. Understand the students, their background the collegues and others. In the theory developmental psychology Erik Erikson described beautifully the stages of a person and how it influences him/her in their life. In the child hood children need trust, then recognition, then motivation, then participation, then equity otherwise they will have behavioral disorders like mistrust, inferiority, identity crisis, fear and depression. Human beings have several different ways of processing information and these ways are relatively independent of one another. As Howard Gardner, the Developmental psychologist outlined in his famous book the Frames of Mindset-The theory of Multiple Intelligence (1983), the nine intelligence like, logical or mathematical, Musical, interpersonal, intrapersonal, linguistic, spatial, naturalistic body kinetic the children may be different in thinking and learning. The teacher should observe the intelligence level of each child like a councilor in formal or informal way before leaving primary level for a better career and successful life. Likewise the behavior of parents and colleques should be understood. What is the strong motivational force influence them to be understood. According to David Meccland in his motivational drive theory categorize human beings in to four drives

like achievement, affiliation power and competence drive. People having achievement drive will be more adamant and strict in decision. Affiliation drive people are influenced by love and affection. Power drive needs a support only, competence drived people need motivation and encouragement. The last stage is transformation. When you go through the above two steps like reception and transaction you can be easily reach to the transformation stage. Transformation is the stage where we could bring any body in to excellence and happiness. Stages of implementation of TOM in schools 1. Develop a vision 2. Prepare a SWOT analysis on what is now and what to do 3. Identify the major areas of intervention like environment, health, hygiene, systems, curriculum transaction, evaluation, training, co curricular extracurricular, certification rehabilitation e, spiritual etc 4. Consolidate areas 5. Identify the activities of each area present, within one year two years three years etc (items, current level, future 1 to 5 years) 6. Assigning Quality control circle in charge 7. Prepare a blue print on TQM (like back ground, vision, mission, structure, objectives service provided, in charge, expected outcome etc 8. Provide training to each one involving the organization 9. MONITORING AND EVALUATION 10. PDCA Total Quality Management is a continuous process that involves

the whole organization and is customer driven. This process is aimed at creating a culture of excellence in any organization. That is enabling organizations into total quality in all its operational aspects. Hence quality does not only mean the production of quality products and services but also encompasses all operations and activities pertaining to an organization. Principles of TQM Support of Top management Implementation of strategic quality plan Customer focus Training and recognition Team work Performance measurement Quality assurance management support includes formulation of quality policy, setting up of quality management structure, getting total involvement of employees, disseminating information of quality, managing the change process and organizing a quality day. Principle of strategic quality planning involves external and internal environmental analysis, formulation of vision, formulation of quality

objectives and identification of improvement activities Customer focus includes identify the customers; their requirements translate their requirements into quality standers, establishing process involved in producing output and implementation of process. Training include training plan, committee, structure, training needs, materials training programes and implementation and monitoring, evaluation, review of effectiveness and recognition. Principle of team work include team leader, grouping, regular meeting etc Performance measurement include determining the quality stds/activity, establishing a mechanism for measurement, establishing performance information net work. Finally the principle of quality assurance involves quality inspection and output planning and training of workers Conclusion Since the culture is different, the external and internal environment is different, human resource and input arte different we cannot develop a uniform methodology and system for TQM. It requires competency gap bridging exercise, process orientation and identification through rationale and pragmatic way.

#### REFERENCES

- [1]. P. Nirmala, T. Manimegalai, J. R. Arunkumar, S. Vimala, G. Vinoth Rajkumar, Raja Raju, "A Mechanism for Detecting the Intruder in the Network through a Stacking Dilated CNN Model", Wireless Communications and Mobile Computing, vol. 2022, Article ID 1955009, 13 pages, 2022. https://doi.org/10.1155/2022/1955009.
- [2]. D. Sathyanarayanan, T. S. Reddy, A. Sathish, P. Geetha, J. R. Arunkumar and S. P. K. Deepak, "American Sign Language Recognition System for Numerical and Alphabets," 2023 International Conference on Research Methodologies in Knowledge Management, Artificial Intelligence and Telecommunication Engineering (RMKMATE), Chennai, India, 2023, pp. 1-6, doi: 10.1109/RMKMATE59243.2023.10369455.
- [3]. J. R. Arunkumar, Tagele berihun Mengist, 2020" Developing Ethiopian Yirgacheffe Coffee Grading Model using a Deep

- Learning Classifier" International Journal of Innovative Technology and Exploring Engineering (IJITEE) ISSN: 2278-3075, Volume-9 Issue-4, February 2020. DOI: 10.35940/ijitee.D1823.029420.
- [4]. Ashwini, S., Arunkumar, J.R., Prabu, R.T. et al. Diagnosis and multi-classification of lung diseases in CXR images using optimized deep convolutional neural network. Soft Comput (2023). https://doi.org/10.1007/s00500-023-09480-3
- [5]. J.R.Arunkumar, Dr.E.Muthukumar," A Novel Method to Improve AODV Protocol for WSN" in Journal of Engineering Sciences" ISSN NO: 0377-9254Volume 3, Issue 1, Jul 2012.
- [6]. R. K, A. Shameem, P. Biswas, B. T. Geetha, J. R. Arunkumar and P. K. Lakineni, "Supply Chain Management Using Blockchain: Opportunities, Challenges, and Future Directions," 2023 Second International Conference on Informatics (ICI), Noida, India, 2023, pp. 1-6, doi: 10.1109/ICI60088.2023.10421633.
- [7]. Arunkumar, J. R. "Study Analysis of Cloud Security Chanllenges and Issues in Cloud Computing Technologies." Journal of Science, Computing and Engineering Research 6.8 (2023): 06-10.
- [8]. J. R. Arunkumar, R. Raman, S. Sivakumar and R. Pavithra, "Wearable Devices for Patient Monitoring System using IoT," 2023 8th International Conference on Communication and Electronics Systems (ICCES), Coimbatore, India, 2023, pp. 381-385, doi: 10.1109/ICCES57224.2023.10192741.
- [9]. S. Sugumaran, C. Geetha, S. S, P. C. Bharath Kumar, T. D. Subha and J. R. Arunkumar, "Energy Efficient Routing Algorithm with Mobile Sink Assistance in Wireless Sensor Networks," 2023 International Conference on Advances in Computing, Communication and Applied Informatics (ACCAI), Chennai, India, 2023, pp. 1-7, doi: 10.1109/ACCAI58221.2023.10201142.
- [10].R. S. Vignesh, V. Chinnammal, Gururaj.D, A. K. Kumar, K. V. Karthikeyan and J. R. Arunkumar, "Secured Data Access and Control Abilities Management over Cloud Environment using Novel Cryptographic Principles," 2023 International Conference on Advances in Computing, Communication and Applied Informatics (ACCAI), Chennai, India, 2023, pp. 1-8, doi: 10.1109/ACCAI58221.2023.10199616.
- [11].Syamala, M., Anusuya, R., Sonkar, S.K. et al. Big data analytics for dynamic network slicing in 5G and beyond with dynamic user preferences. Opt Quant Electron 56, 61 (2024). https://doi.org/10.1007/s11082-023-05663-2
- [12] Krishna Veni, S. R., and R. Anusuya. "Design and Study Analysis Automated Recognition system of Fake Currency Notes." Journal of Science, Computing and Engineering Research 6.6 (2023): 16-20.
- [13]. V. RamKumar, S. Shanthi, K. S. Kumar, S. Kanageswari, S. Mahalakshmi and R. Anusuya, "Internet of Things Assisted Remote Health and Safety Monitoring Scheme Using Intelligent Sensors," 2023 International Conference on Advances in Computing, Communication and Applied Informatics (ACCAI), Chennai, India, 2023, pp. 1-8, doi: 10.1109/ACCAI58221.2023.10199766.
- [14] R. S. Vignesh, R. Sankar, A. Balaji, K. S. Kumar, V. Sharmila Bhargavi and R. Anusuya, "IoT Assisted Drunk and Drive People Identification to Avoid Accidents and Ensure Road Safety Measures," 2023 International Conference on

- Advances in Computing, Communication and Applied Informatics (ACCAI), Chennai, India, 2023, pp. 1-7, doi: 10.1109/ACCAI58221.2023.10200809.
- [15].I. Chandra, G. Sowmiya, G. Charulatha, S. D, S. Gomathi and R. Anusuya, "An efficient Intelligent Systems for Low-Power Consumption Zigbee-Based Wearable Device for Voice Data Transmission," 2023 International Conference on Artificial Intelligence and Knowledge Discovery in Concurrent Engineering (ICECONF), Chennai, India, 2023, pp. 1-7, doi: 10.1109/ICECONF57129.2023.10083856.
- [16].G. Karthikeyan, D. T. G, R. Anusuya, K. K. G, J. T and R. T. Prabu, "Real-Time Sidewalk Crack Identification and Classification based on Convolutional Neural Network using Thermal Images," 2022 International Conference on Automation, Computing and Renewable Systems (ICACRS), Pudukkottai, India, 2022, pp. 1266-1274, doi: 10.1109/ICACRS55517.2022.10029202.
- [17].R. Meena, T. Kavitha, A. K. S, D. M. Mathew, R. Anusuya and G. Karthik, "Extracting Behavioral Characteristics of College Students Using Data Mining on Big Data," 2023 International Conference on Artificial Intelligence and Knowledge Discovery Concurrent in Engineering (ICECONF), Chennai, India, 2023, pp. 1-7, 10.1109/ICECONF57129.2023.10084276.
- [18].S. Bharathi, A. Balaji, D. Irene. J, C. Kalaivanan and R. Anusuya, "An Efficient Liver Disease Prediction based on Deep Convolutional Neural Network using Biopsy Images," 2022 3rd International Conference on Smart Electronics and Communication (ICOSEC), Trichy, India, 2022, pp. 1141-1147, doi: 10.1109/ICOSEC54921.2022.9951870.
- [19].I. Chandra, G. Sowmiya, G. Charulatha, S. D, S. Gomathi and R. Anusuya, "An efficient Intelligent Systems for Low-Power Consumption Zigbee-Based Wearable Device for Voice Data Transmission," 2023 International Conference on Artificial Intelligence and Knowledge Discovery in Concurrent Engineering (ICECONF), Chennai, India, 2023, pp. 1-7, doi: 10.1109/ICECONF57129.2023.10083856. I. Chandra, K. V. Karthikeyan, R. V, S. K, M. Tamilselvi and J. R. Arunkumar, "A Robust and Efficient Computational Offloading and Task Scheduling Model in Mobile Cloud Computing," 2023 International Conference on Artificial Intelligence and Knowledge Discovery in Concurrent Engineering (ICECONF), Chennai, India, 2023, pp. 1-8, 10.1109/ICECONF57129.2023.10084293.
- [20].Revathi, S., et al. "Developing an Infant Monitoring System using IoT (INMOS)." International Scientific Journal of Contemporary Research in Engineering Science and Management 6.1 (2021): 111-115.
- [21].R. K, A. Shameem, P. Biswas, B. T. Geetha, J. R. Arunkumar and P. K. Lakineni, "Supply Chain Management Using Blockchain: Opportunities, Challenges, and Future Directions," 2023 Second International Conference on Informatics (ICI), Noida, India, 2023, pp. 1-6, doi: 10.1109/ICI60088.2023.10421633.
- [22].J.R.Arunkumar. "Comprehensice Analysis of Security Issues in Cloud Computing Technologies", Journal of Science, Computing and Engineering Research, 6(5), 06-10, June 2023.
- [23].S. Sugumaran, C. Geetha, S. S, P. C. Bharath Kumar, T. D. Subha and J. R. Arunkumar, "Energy Efficient Routing

- Algorithm with Mobile Sink Assistance in Wireless Sensor Networks," 2023 International Conference on Advances in Computing, Communication and Applied Informatics (ACCAI), Chennai, India, 2023, pp. 1-7, doi: 10.1109/ACCAI58221.2023.10201142.
- [24] I. Chandra, K. V. Karthikeyan, R. V, S. K, M. Tamilselvi and J. R. Arunkumar, "A Robust and Efficient Computational Offloading and Task Scheduling Model in Mobile Cloud Computing," 2023 International Conference on Artificial Intelligence and Knowledge Discovery in Concurrent Engineering (ICECONF), Chennai, India, 2023, pp. 1-8, doi: 10.1109/ICECONF57129.2023.10084293.
- [25].R. S. Vignesh, A. Kumar S, T. M. Amirthalakshmi, P. Delphy, J. R. Arunkumar and S. Kamatchi, "An Efficient and Intelligent Systems for Internet of Things Based Health Observance System for Covid 19 Patients," 2023 International Conference on Artificial Intelligence and Knowledge Discovery in Concurrent Engineering (ICECONF), Chennai, India, 2023, pp. 1-8, doi: 10.1109/ICECONF57129.2023.10084066.
- [26].DC Jullie Josephine, J Sudhakar, T Helan Vidhya, R Anusuya, G Ramkumar, "An Improved Multi class Breast cancer classification and Abnormality Detection based on Modified Deep Learning Neural Network Principles", Deep Learning in Biomedical Signal and Medical Imaging, CRC Press, Taylor and Francis, 2024.
- [27].R. Anusuya, Pragya Vashishtha, "Real Automatic Number Plate Image Detection With Yolo Algorithms", Journal of Science, Computing and Engineering Research, 7(7), July 2024.
- [28].K. Shetty, S. Tyagi, A. Jha, D. N. M. K. Rao, J. R. Arunkumar and L. R, "Natural Language Processing in Strategic Planning Analysis," 2024 Second International Conference Computational and Characterization Techniques in Engineering & Sciences (IC3TES), Lucknow, India, 2024, pp. 1-5, doi: 10.1109/IC3TES62412.2024.10877514.
- [29].S. Sugumaran, C. Geetha, S. S, P. C. Bharath Kumar, T. D. Subha and J. R. Arunkumar, "Energy Efficient Routing Algorithm with Mobile Sink Assistance in Wireless Sensor Networks," 2023 International Conference on Advances in Computing, Communication and Applied Informatics (ACCAI), Chennai, India, 2023, pp. 1-7, doi: 10.1109/ACCAI58221.2023.10201142.
- [30].R. S. Vignesh, A. Kumar S, T. M. Amirthalakshmi, P. Delphy, J. R. Arunkumar and S. Kamatchi, "An Efficient and Intelligent Systems for Internet of Things Based Health Observance System for Covid 19 Patients," 2023 International Conference on Artificial Intelligence and Knowledge Discovery in Concurrent Engineering (ICECONF), Chennai, India, 2023, pp. 1-8, doi: 10.1109/ICECONF57129.2023.10084066.
- [31].Jullie Josephine DC, Sudhakar J, Helan Vidhya T, Anusuya R, Ramkumar G. 15 An Improved Multi. Deep Learning in Biomedical Signal and Medical Imaging. 2024 Sep 30:237.
- [32]. Arunkumar, J.R., Anusuya, R., Chilukuri, P., Ramkumar Prabhu, M. (2024). Secure Data Transfer and Deletion Using Secure Encryption Algorithm in Cloud Computing. In: Singh, N., Bashir, A.K., Kadry, S., Hu, YC. (eds) Proceedings of the 1st International Conference on Intelligent Healthcare and Computational Neural Modelling. ICIHCNN 2022. Advanced

- Technologies and Societal Change. Springer, Singapore. https://doi.org/10.1007/978-981-99-2832-3 84
- [33].G. Manoharan, P. D. Sawant, J. Vanitha, M. Lourens, R. Anusuya and I. Bhati, "Cognitive Computing for HR Decision-Making," 2024 Second International Conference Computational and Characterization Techniques in Engineering & Sciences (IC3TES), Lucknow, India, 2024, pp. 1-5, doi: 10.1109/IC3TES62412.2024.10877480.
- [34].S. Sivakumar, R. Anusuya, V. Nagaraju, L. P. Narendruni and R. Thamizhamuthu, "QoS Based Efficient Link and Consistent Routing in Wireless Sensor Network," 2023 International Conference on Intelligent and Innovative Technologies in Computing, Electrical and Electronics (IITCEE), Bengaluru, India, 2023, pp. 1241-1246, doi: 10.1109/IITCEE57236.2023.10091080.

