

DEVELOPING A QUALITY ASSURANCE MODEL FOR SMALL MILITARY INSTITUTIONS

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Abstract

Bahrain Defence Force (BDF) has a limited manpower, land to manoeuvre and resources. This reason has led the researcher to investigate the effective dimensions of discovering a model for quality assurance in higher education within a military context in Bahrain to compensate for these limitations. The research seeks to assess, through a case study how newly established education institute such as Royal Command and Staff College (RCSC) adapt and assimilates quality assurance systems. Using action research techniques, this case study analyses continual conceptualisation, implementation and evaluation of quality assurance actions over time. The cyclical process through time involves development of a model of quality assurance systems, implementation and evaluation. The study covers the period of the training years 2005/ 2006 to 2006/ 2007. Owing to the nature of this research and study of the complexity of organizational behaviour and change with active intervention, a case study design is adopted. This research approach involves a triangulation of multiple research designs, methods and analysis, which comprise Action Research Group Process, Survey Instruments (questionnaires), and Focus Group Interviews. The study finds that a strategic model of quality implementation emerges as a response to the inputs from the dynamic environment, the aspects of which are particularly ascertained by the actions of committed instructors.

Keywords: *Quality assurance, Education and training, Higher education / further education, Information system.*

1 INTRODUCTION

Education and training programmes within Bahrain Defence Force (BDF) are a cardinal means of building and maintaining a high level of professionalism. In this regards "all members of the BDF shall be properly trained and educated in order to compensate for the limitation in population and the small size of the land available for their manoeuvrability"(BDF 2007). This statement had put a large presser on the BDF training and education institutions such as The Royal Command and Staff College (RCSC) which is responsible for the training and education of the high rank officers on how to guarantee the quality of its graduated officers. Many attempts have been done by different commanders to achieve the BDF mission, but still there is a need for solid solutions to be agreed on and guaranteed. Quality with the support of information system was one of the solutions which was implemented in general in some service units and departments, but it was not fully implemented in education and training in BDF institutions. For years these education and training institutions where run by decisions on the spot and not according to a proper set of processes to assure the quality. This situation forced every institution to apply its own way of quality assurance processes.

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Research has revealed that education and training have a significant role on the development and the enhancement of the products and services of the organisations (Galagan, 1990). This concept has led the researcher to develop, implement and evaluate a quality assurance system for the education and training in the RCSC as the highest military educational institution in BDF.

This research seeks to assess how a newly established training institute (RCSC) adapts and assimilates quality assurance systems into its training and education environments and to implement the systems to other BDF institutions in the later stage since, there are no similar studies has been done before in BDF or in other military institutions and that this study was initiated to explore the QA in the military and how effective it is for small military institutions. Therefore the aim of this paper is to develop a model for quality assurance in higher education within a military context in Bahrain. The research objective of this research is one of exploration with the purpose of model building after having statistically analysed quantitative and qualitative data. Here the researcher is entering the research environment with the purpose of extrapolating data for analyses that will support research questions of the study. In doing so building a novel model for quality assurance in HE within military context in Bahrain.

2 LITERATURE REVIEW

In improving the quality of education and training institutions, notions such as “competition”, “efficiency”, “effectiveness”, and “excellence” have been introduced. Likewise, different strategies such as internal audit, quality assurance, strategic management, and linking performance with outputs have been adopted in trying to improve the efficiency and effectiveness of the education and training institutions (Sankey, 1995; Pollitt, 1986; Aucoin, 1990).

Cheng et al (2000), argue that, training institutions, under certain conditions, can become much more vital than they currently are. To respond more effectively to an ever-changing social reality, it is crucial that their present orientation and focus are rethought and eventually restructured. The researcher has selected RCSC for conducting this research because RCSC provides training and education for high-ranking officers in the BDF (for Majors and Lieutenant Colonels). It pursues a policy of balancing excellence, linking theory to practice in training that is innovative, rigorous, flexible and relevant to the needs of the BDF main services (Army, Air force and Navy) and contributes to the enhancement of the BDF readiness. RCSC is attempting to develop a quality management system to assist the transformation and to ensure its survival in a highly competitive environment. A study of this approach to develop a model of quality assurance system processes will not only assist RCSC to evaluate its own current approach but also provides other training institutions in the BDF. The researcher found that no attempt has been done in this area before because; this type of research is restricted in military organisation and if there is one it is allowed only to be published with in the same military organisation.

Education is defined as: the act or process of acquiring knowledge, and occurs only during the formative years. Where Training is generally defined as a planned and systematic effort to modify or develop knowledge, skills and attitudes through learning experiences, to achieve effective performance in an activity or a range of activities (Garavan and McCracken, 1993; Harrison, 1993; Reid *et al.*, 1994). Training process is often not systematically identified, while the outputs of the process are often not systematically evaluated. Therefore, a great deal of money and effort may be going into programs that reflect a precarious and ineffective “Random in- Random Out,” approach to training. Careful needs assessment and systematic evaluation are needed to guide improvement in training (Garavan and McCracken, 1993), (Gattiker, 1992), (Ginzberg and Baroudi, 1988) and (Nelson, 1991).

Although business and industry were the first to introduce the concept of total quality improvement into their operation and management processes, education, in its attempts to enhance and control the quality of educational practices, has benefited tremendously from industry experience in this respect (Garbutt, 1996).

In the past decades, numerous initiatives have been conducted to pursue internal effectiveness and quality of education and training system in different parts of the world. Some focused on improvement of school management and classroom environment (Cheng, 1996); some on curriculum development and change (Cheng et al., 2000); some on teacher qualifications and competencies (Fidler and Atton, 1999); some improvement of teaching and learning processes (Morgan and Morris, 1999; Bubb, 2001); and some on evaluation and assessment (Macbeath, 1999, 2000; Leithwood et al., 1991; Sunstein and Lovell, 2000; Headington, 2000). Unfortunately, the results of these efforts were still limited and could not satisfy the increasing needs and expectations of the management.

Sallis (1993), defined quality as that which satisfies and exceeds customer's needs and wants. Karapetrovich and Willborn (1997) define quality as the ability of a product to satisfy stated or implied requirement. They also bring in the concept of zero-defect. They equate zero-defect product in education with a student knowing the fundamentals of discipline. In the past decades, research on organizational effectiveness and school effectiveness has brought forth fruitful results and has guided many of the improvement endeavors (Scheerens, 1992), yet relatively little research has been done on the topic of education quality (Cheng, 1995a).

Juran and Gryna (1993:31) say, "Employees in an organisation have opinions, beliefs, traditions and practices concerning quality. We will call this the company quality culture. Gaining an understanding of this culture should be a part of a company assessment of quality". It should be noted that Juran and Gryna advocate focus group discussions and questionnaires. They emphasise that both changes in technology and quality culture are essential for the introduction of quality. "Technology touches the head, culture touches the heart" (p. 159). Hart and Schoolbred (1993) argue that "Culture is the traditional way of doing things, which the members accept and new members must learn".

3 RESEARCH METHODOLOGY

The research approach adopted in this study involves a triangulation of multiple research designs, methods and analyses. Triangulation combines several research methodologies to study the same phenomenon (Denzin, 1970). The selected methods are deployed under the assumption that weaknesses inherent in one approach will be counterbalanced via strengths in another. The fundamental tenet of triangulation is the application of several method appropriate strategies for assessing the phenomenon. Thus, several different questions can be asked about the same phenomenon and the appropriate method used for each question. Often the purpose of triangulation in specific contexts is to obtain confirmation of findings through convergence of different perspectives. The point at which the perspectives converge is seen to represent reality.

The researcher has selected the following methods for this research:

- a) Action Research Groups Process, which plans and implements action steps.
- b) Survey Instruments (questionnaires), which generate the status of quality as perceived by the stakeholders.
- c) Focus Group Interviews, which generate data and new ideas on the relevant issues.

Triangulation essentially involves efforts to validate a finding from multiple perspectives and types of data. Although there are no, and cannot be, hard and fast rules of triangulation, it is a useful method of obtaining valid findings in contexts like organisational change. As Cunningham (1993:170) argues, "The goal is to achieve convergence where methods of data gathering and analysis complement each other...When the convergence is achieved and different methods illustrate the same results, the confidence level is higher". Bearing in mind the different stakeholders of the RCSC education and training systems, three separate questionnaires were drafted, one each for instructors, courses officers and management / units. The two focus group interviews played an important role in the construction of the questionnaires. The focus groups comprised convenience samples of those who are familiar with the quality assurance systems at RCSC, and these include members of the instructors (academic instructor and quality assurance

instructor). The Instructors questionnaire, Courses Officers questionnaire and Management / Units' questionnaire all contains closed-end questions and an open-end question at the end. Each question was phrased in a clear understandable form. The sampled stakeholders were requested to record the degree of their perception of each of the statements in the questionnaires. In total, 100 questionnaires were sent to the selected course officers and 86% answered back, 12 questionnaires were sent to the selected instructors and 80% answered back and 26 questionnaires were sent to the selected management / units and 83% answered back. In addition to the two focus groups to examine the development and the contents of the questionnaire, four focus groups (group A, B, C and D) of senior officers' instructors were formed to discuss the various aspects of the ongoing conceptualisation and implementation of the quality assurance processes.

This study uses three types of triangulation to reach the conclusions:

- 1) Methods triangulation: using various research methods to gather and validate qualitative and quantitative data,
- 2) Analysis triangulation: using different analysis methods, and
- 3) Data triangulation: collecting data from different sources.

The evaluation of the results of the series of actions and the conclusions derived from the focus groups interviews will consist of mainly qualitative data. In addition, the questionnaire for the courses officers, instructors and management / units generate quantitative data. The quantitative data generated by the survey will be analysed in terms of univariate tables.

The qualitative data derived from the focus groups interviews will be analysed by coding and establishing patterns: extent of awareness, extent of acceptance, extent of effectiveness, etc. The four focus group interviews will generate transcripts to analyse. The researcher will utilise a combination of qualitative analysis tools which are recommended by a number of research methodology writers. Some of these tools are: Typology (Patton, 2002); Constant Comparison (Strauss,1987); Analytic Induction (Katz,1983); Matrix Analysis (Miles and Huberman,1994); Domain Analysis (Spradely,1980); and Discourse Analysis(Gee,1992).

4 ACTION RESEARCH AND SURVEY DATA ANALYSIS

The Action Research Group initiated the process of developing an appropriate model of quality assurance at RCSC. It surveyed the stakeholders and received feedback from the focus groups. It evaluated the results of the actions and planned further actions. There were three main cycles of action research during the period from September 2004 to August 2007. The cycles blended into each other, as each subsequent cycle was a result of the outcomes of the preceding cycle. The first cycle was initiated by the researcher after briefing the Action Research Group. The period of each cycle was taken as one training year. Each training year was divided into four quarters and each quarter was dedicated to one plan, thus enabling each cycle to have four plans.

Table- 1 compares the Dimensions in terms of the evaluation by the instructors, course officers and management / units. Dimension 2, "Competitive Environment", received the most consistent assessment. The coefficients of variation range from 21.6 to 28.6 percent, a range of only 7.0 percent. Dimensions 3 and 4, i.e. "Internal cultural dynamics" and Implementation Performance and Emergent Systems" drew slightly less consistent support. The range of the coefficients of variation is 11.7 percent and 12.1 percent. Dimension 5, "Management Style" received most inconsistent evaluations. The coefficients of variation range from 12.7 percent (units) to 33.6 percent (course officers), a range of 20.9 percent. This means that all the stakeholders (instructors, course officers and management / units) – in almost equal degrees – recognised the significance of "Competitive Environment". But, when it came to the "Management Style" of quality assurance, the stakeholders' assessments diverged. Management Style requires a lot of effort in terms of evolving a consensus.

Stakeholders	Mean	Standard Deviation	Coefficient of Variation (%)
Dimension2 : Competitive Environment			
Management/ Units	3.75	0.81	21.6
Instructors	3.64	0.97	26.6
Course Officers	3.43	0.98	28.6
Dimension 3 : Internal Cultural Dynamics			
Management / Units	3.64	0.72	19.8
Instructors	3.51	1.03	29.3
Course officers	3.30	1.04	31.5
Dimension 4 : Implementation Performance and Emergent Systems			
Management / Units	3.48	0.68	19.5
Instructors	3.63	0.98	27.0
Course officers	3.29	1.04	31.6
Dimension 5 : Management Style			
Management / Units	3.57	0.71	12.7
Instructors	3.59	1.04	29.0
Course Officers	3.21	1.08	33.6

Table 1. Comparison of the stakeholders' evaluations

Table 2 seeks to summarise the relative rankings of the four dimensions in terms of the highest to lowest mean scores for each category of the stakeholders. The Dimension 2, "Competitive Environment" was ranked highest by all the categories of stakeholders. The categories of the stakeholders unanimously emphasised the catalytic role of the "competitive environment" in the quest for quality. They, however, differed in regard to the significance to the other dimensions.

Dimensions	Management /Units	Instructors	Course officers
2: Competitive Environment	1	1	1
3: Internal Cultural Dynamics	2	4	2
4: Implementation and Emergent Systems	4	2	3
5: Management Style	3	3	4

Table 2. Ranking of the four dimensions

Within Dimensions 2 and 3, i.e. "Competitive Environment" and "Internal Cultural Dynamics", the mean evaluations of the management / units, instructors and course officers occur in the descending order. In other words, the management / units evaluation was very high, and those of the instructors and course officers came next. The management / units were more sensitive to the competitive environment. It is clearly seen that the instructors' evaluation of the Dimension 3, "Internal Cultural Dynamics" was lower than their evaluations of the other three dimensions. The various aspects "Internal Cultural Dynamics", for example, organisational culture, understanding of and support for the quality system, etc. are yet to crystallise. But, in regard to Dimension 4, i.e. "Implementation Performance and Emergent Systems", the instructors' evaluation came first, that of the management / units and course officers second and third. The instructors' evaluation was slightly higher than that of the management / units. Again, the instructors were in a better position to judge managerial style.

It can be seen from the patterns of responses that quality assurance involved the cultural development of the individual officers as well as the organisation such as units. The participants displayed their awareness of the organisation-wide implication of participation. Senior officers from the top down to junior officers were responsible for quality. Collective responsibility for quality was repeatedly recognised. Various aspects of quality culture came to the surface.

A very sensitive aspect of evaluation of culture of quality found expression in the groups. They came to the conclusion that quality was professional pride. This is redolent of Deming (Evans and Lindsay, 1996 and Lomax, 1996). The important aspects of commitment and sharing of organisational values were forcefully voiced. The groups also identified frequently the crucial role the training departments could play.

Culture was seen to emerge in such statements as, "The culture of the training departments has a positive influence on quality, as it was seen to awaken people to fact that are different ways of doing things. Important to quality is a culture that encourages course officers' feedback. In some departments the culture is directed towards the practice of the profession, rather than towards theoretical work. While departments may have several cultures, it is the role of Chief instructor, coordination officer and Heads of Departments to align cultural issues in a certain direction".

5 FOCUS GROUP ANALYSES

The focus groups dwelt in detail on implementation performance of the quality systems. They were aware that the drive for the attainment of quality started at the top and percolated down. This essentially means, in the words of Deming, instituting leadership. Again, the groups emphasised the importance of team work in pursuit of quality. Quality should be a shared and systemic goal, and should not be identified with one person. The Groups' emphasis on cross-departmental efforts echoes the thinking of many quality gurus. With a good deal of intensity, the groups voiced the feeling that quality had to be addressed systematically. In words, the participants felt that quality assurance could not be achieved with erratic and ad hoc measures. Also they forcefully stressed the point that values of quality should permeate the RCSC system.

The view that quality could not be fully measured was frequently voiced. Above all, the participants strongly emphasised another aspect of transparency: the measures used for quality should be the same across the board.

The impact of quality assurance on the role of the management generated many sub-themes and a good deal of enthusiasm in the focus group interviews. While holding that leadership was important in the management of quality assurance, the participants felt that this leadership should be a shared one, and informed and inspired by collective values. Instructors should be responsible and involve themselves in quality issues. Their commitment and contribution are very crucial in promoting a positive quality culture". Several participants stated, "Management style has to support the quality system. We think that leaders who are not concerned or participating in quality system as the ones who want to isolate themselves". Also, it was mentioned often that many leaders were close to a situation, but, did not take a decision.

Some issues such as the management and units needed help, examples of good delivery, new ideas, timely feedback, etc. emerged from the focus group interviews. The question of feedback to the course officers cropped up repeatedly. It was recognised that the feedback was an important part of quality assurance. Evaluating the impact, the participants mentioned that the feedback was too slow to have an effect. The burden of documentation work came up for discussion.

The participants of the focus groups criticised the funding and budgeting process, which was not seen as enhancing quality, but more as an exercise in how much money you were going to lose every year. The groups desired that funding of educational and institutions in RCSC should be linked to a set of performance indicators. More resources should be allocated to the institutions that had the highest capability and put in more efforts to ensure quality. We would like to see more delegation, and more responsibility should be given to the experienced instructors. We accept the quality control system, but once we have a quality system then we should empower people to gain

their support". The groups on the whole favoured a more collegial type of management, leavened with good leadership. But, they underscored the need for discipline.

Generally, more than three-fourths of management / units' respondents appreciated the conceptual aspects of RCSC education and training, viz., programmes and curriculum being responsive to the training needs of the units; the learning objectives of training programmes meeting the needs of the units. But, a lesser extent of support, though substantial, was seen for the responsiveness of RCSC to the units' feedback. While RCSC training was relevant to the units, closer interaction with units was recommended.

The Action Research Group was pro-active in regard to the development of quality assurance system at RCSC. The RCSC management and instructors was aware that many HE / FE institutions all over the world were feeling the heat of the competitive environment.

The survey of the instructors also reveal a mixed response. Only about half of the instructors respondent supported the statements that RCSC had a culture of quality and participation, and that there was understanding of the quality system on the part of all, and professional working environment. The course officers also were less enthusiastic about access to learning resources, nature of feedback and nature of assessment.

The focus groups interviews of instructors further highlighted the fractured views of the internal culture dynamic of quality. The statements in the instructors' questionnaire, "RCSC has demonstrated its commitment to continuous quality assurance improvements" and " The instructors are involved in improving the processes under their control on continuous basis and take personal responsibility for their own quality assurance" drew positive responses from an overwhelming proportion of instructors.

The Action Research Group had come to the conclusion that all the critical groups had to be involved in the endeavour of development of a quality model. Through the instructors' surveys, the group realised their feelings, many of the instructors did not feel that the organisational culture was conducive and RCSC quality systems were not understood and supported by all. This made the Action Research Groups sit up and think.

The Action Research Group was concerned with revising and reviewing the plans of quality management. The analysis of the management / units' survey showed that out of 6 statements on implementation as many as 4 drew support from less than half of the respondents. The incidence of the percentage frequencies in the ' Not Sure' cells is unusually high, indicating that units were not apprised of the implementation aspects. This suggests an important step in the quality innovation, i.e. keep the units better informed of how the quality system is implemented in RCSC. The arrangements in RCSC for restructuring training programmes, continual review of procedures and similar statement drew less positive response. But, the 8 statements in the instructors' survey which sought to operationalise the dimension of implementation from the point of view of instructors drew generally positive responses from an overwhelming proportion of the instructors. Also, the incidence of percentage frequencies of ' Not Sure' is relatively low.

But, when we re-examine the tables of the course officers' survey pertaining to the dimension of implementation performance and emergent systems, the statements drew positive responses from less than half of the course officers' respondents. In other words there is a mismatch among the views of the management / units, instructors and course officers. The Action Research Group noticed this ground reality.

Against the background of the analyses of the instructors' survey, the following points emerged: instructors' appraisals were necessary. But, the instructors should be assured of fairness and there should not be any subjective criteria to assess their quality. Leadership in quality was different from concentration of power. When training and learning processes were planned effectively, quality was strengthened. Good classroom delivery was required. The state of the art training material and better training methods should be employed. The instructors should be given guidelines about good delivery. The implementation was reasonably good, but bureaucratic rigidity and avoidable paperwork should be eliminated. Above all, the instructors should be given honest feedback.

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One of the primary concerns of the Action Research group, particularly in the context of the review of literature, was to evolve a viable and suitable management style of sustaining a good quality system. Through conceptualisation of quality in the field of HE / FE and a study of raging controversies regarding what kind of managerial style would sustain quality in different and difficult circumstances, the Action Research Group came to address the question of appropriate ethos of quality at all levels. Because of their experience as instructors and trainers, the members of the Action Research Group were much uncomfortable with corporatist, or bureaucratic style of management.

The analyses of the focus group interviews yielded the following supplementary points, which could not be tapped by surveys. The instructors held that in regard to management of quality, there should be leadership, rather shared leadership with collective values. The role of the middle management was crucial. Decentralisation and co-ordination were critical. There should be a full and willing participation of all. Appropriate values, tradition and atmosphere should be fostered. Above all, management of quality should be such that it was viewed positively. The focus group interviews complemented the views of the Action Research Group, "Empower the instructors and involve them at every level; lead from the front, but inspire and energise the instructors".

6 INFORMATION SYSTEM AND QA

To enhance the developed quality model in RCSC, the adoption of information system is needed to:

1. Collect and use data gathered for assessment.
2. Provide RCSC with a common strategy of assessment and improvement.
3. Incorporate the quality assurance strategy into the RSCS program.
4. Devolves much responsibility for assessment because it generates considerable accessible information that can be easily extracted, formatted and used by the stakeholders.
5. A cost efficient method of generating and formatting information for accountability and quality improvement

The discovered model is an approach to implement quality assurance in RCSC to exploit the promise of information technology to small military institution. One of the fundamental achievement of the model is that it serves as a vehicle for an entire institution to develop and utilize data about its constituents to improve the quality in RSCS. A technology-based, enterprise-wide approach to quality provides institutions with a powerful lever to focus institutional attention on meeting primary strategic objectives, including the generation of information for quality assurance.

7 EMERGING MODEL

The major elements of the processes which led to the development of a QA systems model in RCSC through action research techniques are shown in Figure 1. The figure also highlights the salient features of the emergent system of QA. This system constitutes the strategic framework within which the detailed operations of quality can be planned. This particular model involving these processes would emerge was not evident at the beginning of Action Research Group Cycles.

The Focus Groups process receives the inputs from the Action Research Group process then conceptualise them through internal culture, competitive environment, and managerial style and implement them. The outcomes satisfy the instructors, course officers and management / units and are very vital input into the implementation and emergent system of QA. Figure 1 seeks to depict the dynamics of this process.

After an appropriate conceptualisation of quality in HE /FE, the Action Research Group took the steps to gauge the perceptions of competitiveness of the environment, the internal cultural dynamics encountered while implementing quality measures and the management style. RCSC was considered as a learning organisation. More importantly, the Action Research Group wanted neither to impose its views about these, nor to have preconceived and a priori notions. The opinions and

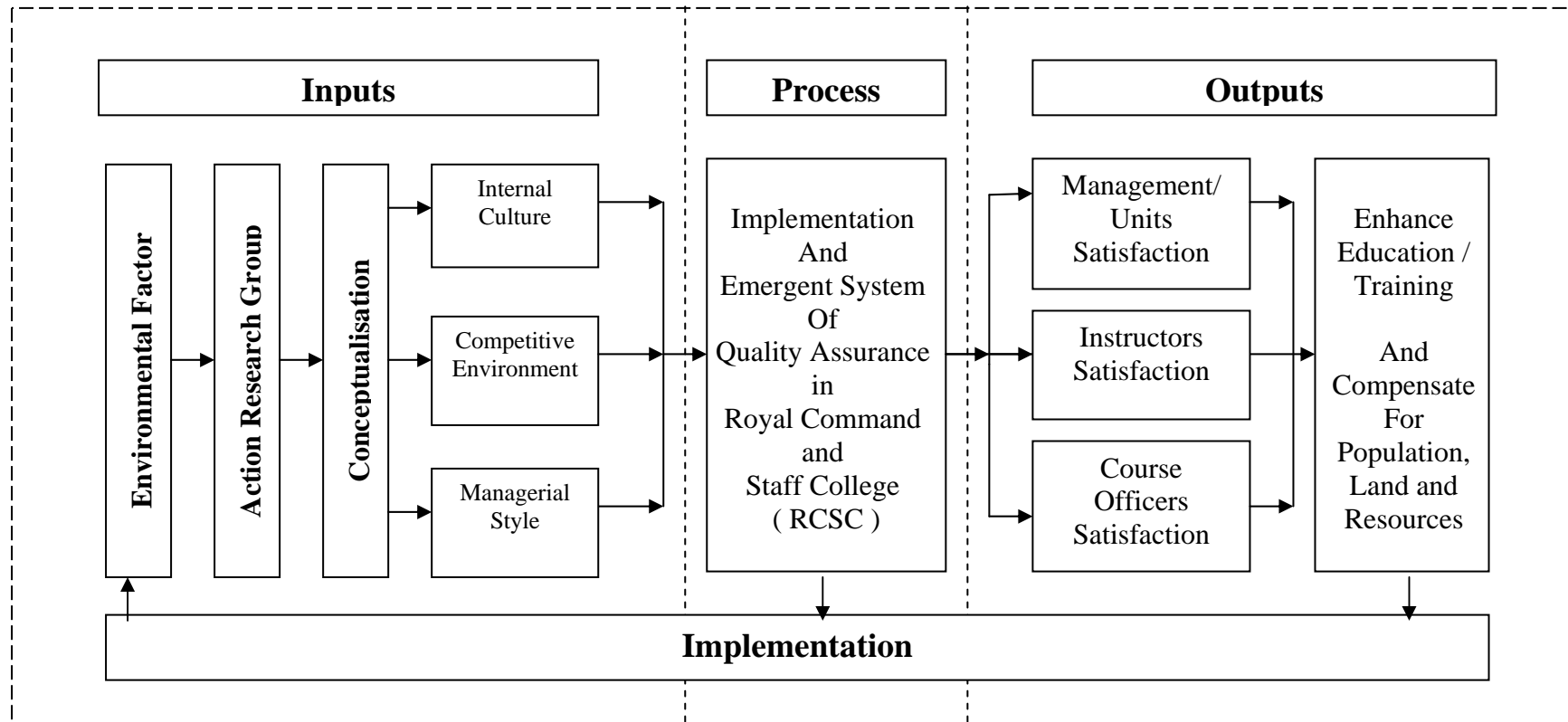


Figure 1. A model for Developing QA System in HE/ FE Institutions and Training Sector

evaluations of the major stakeholders, viz, the management / units, instructors and course officers were ascertained through surveys. The key issues of the findings were debated in the instructors' focus group interviews. Further conclusions were derived through triangulations. These conclusions constituted a crucial input which facilitated the implementations and the emergence of a quality model.

8 CONCLUSION

This paper represents a quest for a strategic military model of quality assurance systems in HE/FE and training sectors. Conventional wisdom as well as keen observation revealed that models of quality from other services and manufacturing cannot be automatically transplanted in military education and training, where profit is not the driving force. Thus the researcher has taken the responsibility to develop a suitable QA system relevant to the immediate needs of such an organisation. To develop such a model, the researcher has found that Action Research as the most suitable research methodology. The Action Research Group and the researcher evolved a model of quality assurance through iterative cycles of action research. This type of methodology, not only has given the researcher the required flexibility in handling the research, but has permitted the researcher and the Action Research Group to plan, implement, evaluate and adjust the research in accordance to the findings and outcomes.

The triangulation methods (methods triangulation, data triangulation and analysis triangulation) used in this research has proven success in fostering the reliability and the validity of this research.

The developed model is supported by a number of relevant QA drives some of which are competitiveness, clear and reliable QA indicators, relevant cultural aspects, appropriate managerial style, clear implementation and evaluation procedures and participation of all the stakeholders. An appropriate utilization of these drives will probably enable RCSC to provide quality education and training programmes that can graduate multi disciplined competent officers for BDF Units. Hence, this model will surely enable BDF to compensate their severe shortage of population, land and resources. The model makes novel contribution at three levels. Firstly, at the conceptual level, the model incorporates factors identified in previous chapters as influencing the QA in RCSC. Secondly, the concepts of the developed model can be used as a guide for other areas within small military institutions in BDF. Finally the developed model can be adopted by similar military educational institutions in the Gulf region – were resources are limited, also this model can be developed to suit Physical Training and Shooting Training in military institutions.

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