### CHAPTER – III
### RESEARCH DESIGN

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3.01. INTRODUCTION

In this chapter, the researcher presents the methodology of the research investigation. After formulating the hypotheses for the study, suitable research strategy is planned. Further, the construction and validation of research tools used in this investigation and the procedure adopted in the collection of data are also dealt with. This study intends to collect data from the selected samples on the occurrence of events and the availability and its utility of human as well as physical resources required to be available in Higher Education Institutions.

In practice, the survey of the educational process is one of the most commonly used approaches. Hence, in this study, survey method is employed to assess the present status. The researcher also focuses on the performance rating with already assessed institutions by other statutory assessment agencies. Based on the hypotheses framed, the objectives are specified and tested. A valid tool is framed and empirical evidences are collected from the Universities concerned.

3.02. STATEMENT OF THE PROBLEM

The latest developments in the field of business, communication and technology demand a thorough, in-depth knowledge in the subjects concerned. Hence quality education is the basis for achieving the above target. Naturally, responsibility of providing quality education lies with Higher Education Institutions. Assessment in educational institutions is mainly concerned with ensuring quality assurance in curriculum, teaching, research and overall contribution by the institution through its introspection and performance analysis. An assessment of the infrastructure facilities by an external agency is the proof that the institution could offer quality education.
Besides this assessment, educational institutions volunteer to go for accreditation of their programmes or Institution. In general, accreditation process has to facilitate the institutions to show their accountability to stakeholders, demonstrate effectiveness to justify their existence. This process would also help and guide the institution and increase the stakeholders' participation in managing the Higher Education Institutions. The assessment and accreditation of an institution or programme has dual purposes, namely, quality assessment as well as quality improvement and should take into account the input, process and outcome. Though the quality of education is assessed by various National agencies in India, the parameters of quality are so subjective that they are not dependable. The following weaknesses are also observed in this assessment process:

- Institutions are sensitive to grade awarded by the external agency
- Inter team variation in awarding grade
- Mismatch between the Peer team report and grade
- Effective presentation and professional management masks their weakness
- There are more chances for subjectivity in assessment

It is inferred from the problems highlighted above, there arises confusion on the meeting of the existing benchmarks and measurement criteria and the scoring pattern followed at present by various external agencies. These are some of the moot issues that crave for further research in this field.

In the process of evading the grievances on scoring pattern and fine-tuning the assessment indicators, the researcher intends to identify some of the relevant criterion, key aspects and operational indicators providing
no rooms for subjectivity on assessing their results. With the revisit on identified key aspects and indicators, a new assessment model would be evolved to assess the institutions and grade their status more objectively.

With this background, the title of research study is formulated thus: “QUALITY ASSESSMENT AND ACCREDITATION OF HIGHER EDUCATION INSTITUTIONS – AN EMPIRICAL MODEL”.

3.03. SIGNIFICANCE OF THE STUDY

In India, the National Assessment and Accreditation Council (NAAC) has been assigned to undertake assessment of Higher education institutions. During the past ten years, NAAC has given accreditation to 3492 colleges and 148 universities. Further, it is revealed from the experiences of NAAC in their thirteen years service on assessment and accreditation process that quality gap is noted in the approaches to curriculum development, teaching learning, research and consultancy, infrastructure and learning resources, Students Support Services and organization and management.

Though NAAC has pointed out the insufficiencies and suggested rectifications, it has reported that the insights and experiences gained through the exercise has been very rewarding for the accrediting agency in terms of being able to trigger quality initiatives in institutions and to strengthen its own evaluative process. Similarly the reported impact on institutions has been largely positive. However, one issue that has remained in the arena of debate all through is the ‘grade’ given to the institutions. The institutions, which have undergone the assessment process, expressed their displeasure over the grading for two reasons, viz.
i) the text of the Peer Team report is highly positive vis a vis the scoring

ii) the comparison of facilities, faculties, infrastructure with other colleges which is rated high.

To overcome the concerns and comments, academicians emphasize the significance of unambiguous assessment parameters for objective assessment. Hence the researcher ventured a study in this direction.

3.04. OPERATIONAL DEFINITIONS

HIGHER EDUCATION INSTITUTIONS

In this study, Higher Education Institutions refer to the Arts and Science affiliating Universities, those that have been accredited by National Assessment and Accreditation Council (NAAC) within the last five years.

QUALITY ASSESSMENT

Quality Assessment is an evaluation of overall performance of an institution using operational indicators to assess the occurrences of events, availability and utility of physical as well as human resources within the specified period of time (usually immediate past three years from the date of assessment).

ACCREDITATION

In this research study, accreditation refers to the process of assessing and enhancing academic and educational quality through voluntary peer review. Quality Assessment and Accreditation are functioning in tandem. So, the accreditation is an in-built mechanism of assessment.
EMPIRICAL MODEL

Empirical model refers to a model developed and incorporating all the dimensions of quality. The model includes occurrence of events, availability and utility of human and physical resources. This newly framed model is validated and confirmed to be a reliable tool for assessment of higher education institutions.

OCCURRENCES OF EVENTS

In this research study, occurrence of events means the responses received in the form of 'YES' or 'NO' against the operational indicators representing the total number of programmes, Meetings, Availability of infrastructure facilities, Faculty improvement, Students Service Activities, Co-curricular, Extra curricular activities, Participation in National and International conferences, Seminars, Workshops organized within the specified period (one / three years as prescribed by NAAC).

DIMENSION

It refers to different components in the Quality Assessment pattern used in Higher Education Institutions.

KEY ASPECTS

It refers to sub element in each dimension, which is helpful to group the relevant operational indicators.

OPERATIONAL INDICATORS

It refers to the basic assessment unit.
3.05. RESEARCH QUESTIONS

Following questions are raised in this research study:

i) How can an institution produce a quality-enriched product and how is the quality set by an institution assessed?

ii) To what extent is the effectiveness of performance incurred under greater diversity correlated with its appropriate objectives?

iii) Why is the external quality assessment insisted upon for ensuring rationale of standards?

iv) Does the existing benchmarks and criteria adopted by External agencies address the requirement of Higher Education provider?

v) Does the existing criteria and scoring pattern effectively assess the Higher Education Institutions under all circumstances?

vi) Does it give appropriate weightage to each criterion on different educational institutions at different situations?

vii) Does it require evolving a New Assessment Model, which ensures objectivity and simplified scoring pattern?

3.06. DELIMITATION OF THE STUDY

- This study is confined only to State affiliating Universities in Tamilnadu.
- This study is confined to State Affiliating Universities, which got accreditation within last five years.
- This study is limited only to Arts and Science affiliating Universities.
- The operational indicators in the study invite only the definite and
objective responses in the form of occurrence of events.

- This study deals only with Universities but not to Affiliated or Autonomous colleges.
- Relational effect among the dimensions has not been considered.
- The data relating to occurrences of events, availability and utility are pertaining only to the period of self-study report prepared for NAAC.

3.07. OBJECTIVES

The review of literature throws more light on the need for making an empirical research on quality assessment and accreditation of higher education institutions. The present study attempts to identify imperative tools on assessment of higher education institutions. Against this background, the following specific objectives have been developed for the present study:

- To identify and study the assessment criteria and scoring guidelines followed by various National and International Quality Assessment Agencies / council on Higher Education.
- To revisit the assessment criteria and scoring pattern practiced on assessment by the Accrediting agencies in India.
- To conceptualize and develop a comprehensive model of assessment and accreditation of Higher Education Institution.
- To implement the comprehensive model with already accredited higher education institutions in Tamilnadu.
- To examine the convergence and divergence of assessment indicators with existing assessment instrument.
- To find out the suitability of the proposed assessment model in the process of quality assessment and accreditation of Higher Education Institutions.
3.08. ASSUMPTIONS

- In the process of assessing performance of Higher Education Institutions, assessment indicators play a pivotal role.

- Operational Indicators evolved under different dimensions should be suitable to present Higher Education scenario.

- Different assessment indicators under various dimensions are being adopted by National and International assessment agencies.

- Assessment criteria and scoring pattern followed by NAAC demand fine tuning of its indicators and objective scoring pattern.

- Assessment indicators evolved under the New Assessment Model has many convergence and some divergence with the NAAC’s model.

- Dimension-wise scorings under the New Assessment Model are almost similar (or) there is negligible difference when compared to the NAAC model.

- There will be scoring agreement in overall scoring under the New Assessment Model under different weightages.

3.09. HYPOTHESES

- There are variations in the assessment criteria and scoring pattern prescribed by the existing National and International External assessment agencies of Higher Education Institutions.
• There are variations in the assessment criteria formulated in NAAC's model and the New Assessment Model.

• There is variation between NAAC's pattern of scoring and the New Assessment Model's pattern of scoring.

• The objectivity in dimension-wise scoring pattern of the New Assessment Model is ensured either by following in its own scoring weightage or NAAC's weightage distribution or by both score distribution.

• The objectivity in overall scoring pattern of the New Assessment Model is ensured either by following in its own scoring weightage or NAAC's weightage distribution or by both score distribution.

3.10. SAMPLE

• Location: The affiliating State Universities of Tamilnadu form the sample of the study.

• Selection of Sample: Out of Fourteen affiliating State Universities in Tamilnadu, the Universities, which were accredited, by National Assessment and Accreditation Council (NAAC), Bangalore, during the last Five years period (2002 – 2007) were selected for this study.

3.11. CONSTRUCTION OF THE TOOL

The following flow-chart reveals the steps involved in the process of tool construction:
ASSESSMENT TOOL

Review of Related Literature

Criteria for Quality Assessment

National Agencies

International Agencies

Item Pooling

Items Identification

Quality Framework

Dimensions

Key Aspects

Operational Indicators

Academia

Experts Opinion

Administrators

Selection of Indicators

Availability of Resources

Occurrence of Events

Extent of Utility

GRADING ON ASSESSMENT
The repeated concerns and comments made from different Higher Education Institutions about the grading on assessment and accreditation and also the number of suits filed and appeals made to the Appeal Committee against scoring pattern adopted by the National Assessment agencies have motivated the researcher to take up the study in order to identify suitable and workable criteria applicable to Higher Education Institutions in the present scenario, leaving no room for subjectivity in scoring.

JUSTIFICATION FOR IDENTIFICATION AND VALIDATION OF ASSESSMENT DIMENSIONS

In the process of assessment and accreditation, the criteria and key aspects play a pivotal role. Different standards and criteria are being adopted by each External Assessment Agency suitable to their convenience. In order to understand the importance and necessity of criteria and key aspects instituted by various External Assessment Agencies, detailed studies were conducted on the criteria and scoring pattern adhered by various National and International Agencies. Besides, need for assessment and accreditation and the imperative necessity for revisiting the assessment criteria were also reviewed.

In addition to the criteria practiced by the National Assessment agencies in India, the criteria of assessing the Higher Education Institutions in the International arena were also taken for consideration. The following are such agencies considered for review:

2. European Quality Improvement system, Europe - 2003
3. Middle East Commission on Higher Education, USA - 2002
4. National Institution for Academic degrees and University Evaluation, Japan - 2005
5. Balridge National Quality Programme, USA - 2005
6. University Quality Model, Pakistan - 2005
7. National Board of Accreditation (NBA), India - 2003
8. National Assessment and Accreditation Council (NAAC) India - 1994

The criteria and key aspects for assessing the Higher Education Institutions practiced by the above Assessment Agencies and other factors imperative on assessing the institutions are pooled to cull out the relevant and eliminate unimportant, subjective and repeated items.

CRITERIA FOR SELECTION OF KEY ASPECTS AND OPERATIONAL INDICATORS

Once the items from various agencies were gathered, they were subjected to screening. Overlapping items are eliminated. Further, based on the suggestions, the following criteria were laid by experts for the inclusion and exclusion of Key aspects:

- Selecting the indicators which are believed to cover entire range of our concept
- Eliminating the overlapping indicators under appropriate dimension
- Avoiding indicators which are irrelevant to our local academic environment conditions
- Making the statement in the questionnaire simple, clear and direct
ITEM IDENTIFICATION

The Dimensions and Key aspects collected from different assessment agencies were tabulated and repeated dimensions were eliminated. In addition to the Key aspects collated from this exercise, some related indicators were identified for quality assessment. As a result, eleven dimensions with 52 Key aspects were formulated. The pre-finalized tool evolved for the purpose of assessing the Higher Education Institutions is appended in Appendix – I.

Followed by the identification of key aspects, the operational indicators pertinent to key aspects were formulated. Due care has been taken to select the indicators based on operational feasibility, providing no room for subjectivity.

In view of eliciting unbiased and accurate response based on the actual performances of the institutions, the measuring frequency for operational indicators was formulated under three different categories. For getting response from the subjects, ‘YES’ or ‘NO’ type of questions were framed. Further, for ensuring the occurrences and availability ‘Numerical type’ questions were raised. To find out the extent of utility of resources, responses in percentage were asked in the questionnaire formulated. All these three types of scoring would eliminate the chances of ambiguity or discretionary assessment; and ensuring easy and transparent assessment.

The following are the short-listed Dimensions and Key Aspects identified in this study:

Dimension – 1: VISION AND MISSION

Key Aspects:
- Vision and Mission Statement
- Realization of spirit of Mission
• Dissemination of Mission
• Long term and Short term Planning
• Organizational Chart
• Achievement of Plan
• Incentives for attainment of objectives
• Motivational Programmes
• Rewards for attainment
• Monitoring Mechanisms

Dimension - II : GOVERNANCE

Key Aspects:
• Constitution of Governing Council
• Number of Meetings
• Implementation of Resolutions
• Internal Co ordination
• Periodical meeting with Staff
• Internal Quality Assurance
• Manpower Assessment
• Recruitment of Staff
• Upgradation training
• Motivational programmes on using Teaching aids
• Reservation Policy
• Internal Resource Generation
• Resources through consultancy
• Budget allocation
• Utilization of Grants
• Internal / External financial audit
• Financial Assistance to students
• Examination Reforms

Dimensions - III : CURRICULAR ASPECTS

Key Aspects:
• Regular courses
• Evening / Week end courses
• Summer Sequential Programmes
• Self Supportive Programmes
• Conversion of Programmes
• Regular Programmes
• Innovative Programmes
• Inter-disciplinary Courses
• Programmes for International students
• Local specific programmes
• Demand rate for each programmes
• Inclusion of recent development
• Expertise of Industrial professionals
• In plant training to students
• Consideration of feedback of alumni
• Thrust on ICT in syllabus
• Innovative practices

Dimensions - IV: TEACHING AND LEARNING

Key aspects:
• Number of working days
• Number of Teaching days
• Adoption and follow up of academic calendar
• Remedial coaching
• Assessment of the improvement after coaching
• Bridge courses
• Teaching Plan
• Teaching Aids
• Usage of instructional packages
• Orientation on usage of Audio / visual aids
• Internet facilities
• Evaluation of teachers
• Self-appraisal
• Peer Evaluation
• Uniformity in evaluation
• Regular feedback
• Academic audit
• Special training
• Collaborative arrangements

Dimension - V: TEACHER AND LEARNER

Key aspects:
• Sanctioned Posts
• Posts filled
• Part time / Guest faculty
• Workload of Faculty
• Teacher – student ratio
• Qualifications
• Guest faculty from Industry
• Assignment of administrative works
• Average experience of faculty
• Industrial experience
• Ph.D. qualification
• Faculty gone abroad for Higher studies
• Staff Training Programmes
• Incentive for best academic performance
• Redressal of grievances
• Students admission
• Industry-sponsored students
• Overseas students
• Students pass rate
• Placement profile
• Higher studies survey

Dimension - VI: RESEARCH AND CONSULTANCY

Key aspects:

• Scholars profile
• Research under FIP
• Award of financial assistance
• Major and Minor research projects
• Projects outlay
• Department supported research grants
• Seminar / workshops organized
• Best research results
• Average number of research papers
• Average citation index
• National and International research publications
• Citation Index and Impact factors
• Number of text books
• Presentation of papers by invitation
• Industry consultancy services
• Industry linkages for hands-on training
• Collaborative agreements
• Financial assistance
Dimension - VII : UTILIZATION OF INFRASTRUCTURE FACILITIES

Key aspects:

- Master Plan indicating existing and proposed Plan
- Display of Main entry
- Constructed area
- Availability of basic amenities
- Availability of Learning resources
- Availability of Central facilities
- Hostel facilities
- Computer and Net facilities
- Medical and Transport facilities
- Extra-curricular facilities
- Insurance coverage
- Power backup facilities
- Reprographic facilities
- Bank and Post office facilities
- Special provision to physically challenged persons
- Budget provision
- Utilization of budget provision

Dimension - VIII : ACCESS TO LEARNING RESOURCES

Key aspects:

- Working hours
- Availability of books
- Subscription of journals / magazines
- Average user per day
- Separate book bank
- Reading room
- Department Library
- Availability of instructional materials
- e-journal searching
- Instructional packages
- Availability of laboratories
- Preparedness before use
- Centralized instrumentation facility
- Computer student ratio
• Availability of supportive staff
• Language laboratory
• Budget allotment for books purchase
• Maintenance of computers and laboratory equipments

Dimension - IX : STUDENTS SUPPORT SERVICES

Key aspects:

• Publication of Prospectus and Handbooks
• Information about available resources
• Special coaching to socially underprivileged / Gifted students
• Special Facilities
• Students participation in sports activities
• Recognition in cultural winning
• Personality development programmes
• Arrangement of Placement opportunities
• Motivational training to students
• Company feedback for pruning skills-set
• Students counseling
• Academic and Personal counseling
• Complaints and Grievances
• Role of alumni in developmental activities
• Feedback from alumni
• Feedback from parents & students

Taking into consideration the Key aspects under each of the dimensions, the statements were formulated with much care for getting concrete information. For the purpose of making it convenient for classification and scoring pattern, the important aspects relating to particular operation were grouped together as Key aspects. Under each Key aspect, pertinent and related indicators were added and in view of the respondents' convenience the indicators were described as statement to formulate the questionnaire.
EXPERTS' OPINION

The dimensions together with respective indicators were presented to a few eminent Professors for perusal and opinion. In the first phase of discussion, it was decided to frame some Key aspects in each dimension. The Nine dimensions showed to them were fine-tuned and the following key aspects emerged from discussion with them:

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<th>Sl. No.</th>
<th>Dimension</th>
<th>Sl. No.</th>
<th>Key Aspects</th>
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<td>2.</td>
<td>Long Term and Short term Planning</td>
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<td>3.</td>
<td>Monitoring Mechanism</td>
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<td>2.</td>
<td>Governance</td>
<td>1.</td>
<td>Organizational Structure</td>
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<td></td>
<td></td>
<td>2.</td>
<td>Manpower Development</td>
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<td>3.</td>
<td>Resource Mobilization and Management</td>
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<td>3.</td>
<td>Curricular Aspects</td>
<td>1.</td>
<td>Academic Flexibility</td>
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<td>2.</td>
<td>Programme Options</td>
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<td>3.</td>
<td>Restructuring and Revision of curriculum</td>
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<td>4.</td>
<td>Hands-on Training</td>
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<td>5.</td>
<td>Innovative Practices</td>
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<td>4.</td>
<td>Teaching and Learning</td>
<td>1.</td>
<td>Academic Calendar</td>
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<td>2.</td>
<td>Remedial / Special coaching</td>
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<td>3.</td>
<td>Effective use of teaching aids</td>
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<td>4.</td>
<td>Adoption of evaluation procedures</td>
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<td>5.</td>
<td>Follow up and feedback from students</td>
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<td>5.</td>
<td>Teacher and Learner</td>
<td>1.</td>
<td>Status of faculty position</td>
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<td></td>
<td></td>
<td>2.</td>
<td>Competency assessment</td>
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<td>Staff development facilities</td>
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<td>Students admission</td>
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<td>5.</td>
<td>Students Target profile</td>
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Again, the Dimensions, Key aspects along with relevant Operational Indicators and the statements underpinning the indicators were framed. These were presented to few academia and Administrators, who were the Steering Committee members during the Assessment and Accreditation process at the National level for their perusal and comments on the objectivity, reliability and suitability for implementation. The experts' opinion was obtained on identifying the Key aspects and Operational indicators. The experts made re-shaping and fine tuning of statements to the most appropriate and suitable for practical implementation. Based on their opinion and suggestion, ambiguous questions / items were eliminated from the tool.
SELECTED OF INDICATORS

In addition to analyzing the current practices followed by various External Assessment Agencies in India and in other countries, the constructive guidance received from the eminent Professors were incorporated and the questionnaire was framed. The Dimensions, Key aspects and Operational indicators framed were tabulated to find out the confluence and congruence with criteria followed by Assessment agencies are taken for consideration. The following table shows the extent to which the Key aspects identified in this study synchronizes with the existing Assessment Models:
# NEW ASSESSMENT MODEL – DIMENSION AND KEY ASPECTS

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<td>Vision and Mission:</td>
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<td>1.1. Dissemination of Vision</td>
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<td></td>
<td>and Mission</td>
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<td>1.2. Long term and short term Planning</td>
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<td>1.3. Rewards for attainment</td>
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<td>1.4. Monitoring Mechanism</td>
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<td>2.</td>
<td>Governance:</td>
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<td>2.1. Organizational Structure</td>
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<td>2.2. Manpower Recruitment and Development</td>
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<td>3.</td>
<td>Curricular Aspects:</td>
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<td>3.1. Academic Flexibility</td>
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<td>3.2. Programme Options</td>
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<td>3.3. Restructuring and Revision of curriculum</td>
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<td>3.4. Hands on Training</td>
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<td>Teaching and Learning:</td>
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<td>4.1. Academic calendar</td>
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<td>4.3. Effective use of teaching aids</td>
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<td>4.5. Evaluation and follow up students</td>
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<td>5.</td>
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<td></td>
<td>5.1. Status of faculty</td>
<td>9.1</td>
</tr>
<tr>
<td></td>
<td>5.2. Faculty profile</td>
<td>9.3</td>
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<tr>
<td>5.3. Staff development facilities</td>
<td>9.2</td>
<td>4.1</td>
</tr>
<tr>
<td>5.4. Students admission</td>
<td>10.1</td>
<td>2.2</td>
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<tr>
<td>5.5. Students target profile</td>
<td>1.2</td>
<td>6.3</td>
</tr>
<tr>
<td>6. Research and Consultancy</td>
<td>7.1</td>
<td>–</td>
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<tr>
<td>6.1. Research scholars and supervisors</td>
<td>7.2</td>
<td>–</td>
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<tr>
<td>6.2. Sanction of Research projects</td>
<td>–</td>
<td>–</td>
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<tr>
<td>6.3. Participation in Research activities</td>
<td>–</td>
<td>5.1</td>
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<tr>
<td>6.4. Publication on research results</td>
<td>–</td>
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<tr>
<td>6.5. Consultancy works</td>
<td>–</td>
<td>–</td>
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<tr>
<td>7. Utilization of Infrastructure facilities</td>
<td>–</td>
<td>–</td>
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<tr>
<td>7.1. Availability of Master Plan</td>
<td>–</td>
<td>–</td>
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<tr>
<td>7.2. Basic infrastructure facilities</td>
<td>–</td>
<td>–</td>
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<td>7.3. Residential facilities</td>
<td>–</td>
<td>–</td>
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<tr>
<td>7.4. Special facilities</td>
<td>–</td>
<td>–</td>
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<tr>
<td>7.5. Budget provision for maintenance</td>
<td>–</td>
<td>–</td>
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<tr>
<td>8. Access to Learning Resources</td>
<td>5.2</td>
<td>8.3</td>
</tr>
<tr>
<td>8.1. Access to library resources</td>
<td>8.2</td>
<td>8.4</td>
</tr>
<tr>
<td>8.2. Instructional Material</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>8.3. Laboratories for Learning purposes</td>
<td>–</td>
<td>8.2</td>
</tr>
<tr>
<td>8.4. Budget provision and maintenance</td>
<td>–</td>
<td>–</td>
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<tr>
<td>9. Students Support Services</td>
<td>–</td>
<td>2.3</td>
</tr>
<tr>
<td>9.1. Remedial / Special coaching</td>
<td>–</td>
<td>6.3</td>
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<tr>
<td>9.2. Co-curricular and Extra curricular activities</td>
<td>–</td>
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<tr>
<td>9.3. Placement Cell</td>
<td>–</td>
<td>–</td>
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<tr>
<td>9.4. Career guidance and counseling</td>
<td>10.2</td>
<td>2.4</td>
</tr>
<tr>
<td>9.5. Alumni Association</td>
<td>–</td>
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</tr>
</tbody>
</table>

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**Existing External Assessment Agencies taken for consideration**

II. European Quality Improvement system Accreditation Model-Europe  
III. Middle State Commission on Higher Education, USA  
IV. National Institution for Academic Degrees and University Evaluation, Japan  
V. Balridge National Quality Programme, USA  
VI. University Quality Model, Pakistan  
VII. National Board of Accreditation, NBA, India  
VIII. National Assessment and Accreditation Council – INDIA

**RESEARCH TOOLS**  
The assessment instrument consisted of nine dimensions of criteria and 41 Key aspects with 314 operational indicators designed for getting specific quantitative information about the institution relating to its performance requirements. There are 140 statements which were expected to elicit ‘YES’ or ‘NO’ type of responses ensuring the occurrence of events and 150 statements expected to elicit ‘Numerical value’ type of responses, ensuring the availability of resources and number of occurrences and 14 statements to get responses in percentage to ensure the extent of availability or utility of resources in the respective institution.

The score earned in each indicator under the respective key aspect is considered for arriving at the value of each dimension. Summated value of key aspects in each dimension would be averaged to arrive at the total score for determining overall rating.
RELIABILITY OF THE TOOL

Reliability is the consistency with which a tool measures, what it measures (Garrelet, 1973). The reliability of a tool can be established by using any one of the following four methods: test-retest method, parallel form method, split – half method and rational equivalence method or otherwise known as Internal consistency method. In this study, the internal consistency method was used.

In the present study, the assessment tools were administered among the Administrators and Professors. The reliability co-efficient among each dimensions were obtained as 0.86 to 0.89, which is significant to ascertain the reliability of the tool. Thus the tools are confirmed to be reliable.

VALIDITY OF THE TOOL

According to Nunnally (1970) systematic plan and procedure of the construction of tool would ensure the validity of total rather than testing the validity of measures after they are constructed. Nunnally (1970) stated that to ensure content validity, the following two important standards are necessary:

i) a representative collection of items

ii) a sensible method of test constructions

In this research study, nine dimensions and appropriate Key aspects related to each dimension were collated from the agencies' practices in India and abroad. The operational indicators relating to such Key aspects and dimensions were also identified as most appropriate and pertinent to the practical operations.
On the basis of the suggestions offered by them, the redundant indicators have been eliminated and only the factors actually influencing key role on quality assessment were short-listed.

Accordingly, the research tool evolved were modified, re-worded and properly re-structured. Final version of indicators was validated again by experts ensuring objectivity in assessment. As systematic methodology is adopted in developing this tool, it can be firmly stated that the assessment tool possesses sufficient content-validity.

3.12. SCORING PROCEDURES

In the new assessment model, the scores earned in each key factor under every dimension are added for determining the scores on each dimension. The summated scores of all nine dimensions would be the total score of an assessed institution. In this research study, for the purpose of making comparison with NAAC's scoring, the scores earned under nine dimensions in the New Assessment Model are condensed to six dimensions / criteria as prescribed by NAAC. In this regard, the scores earned in the criteria ‘Innovative practices' by the sample universities are spread over to other six dimensions as shown in Table No.4.20.

3.13. DATA COLLECTION

For the purpose of collection of data, all the six affiliating universities in the state of Tamilnadu, which got accreditation by NAAC within the last five years, were contacted. In spite of personal contact and repeated reminders, the researcher could be able to obtain duly filled in questionnaire only from four universities out of six.
In view of getting internal consistency on the data furnished, at least three questionnaires have been given to the administrators as well as academic staff members, who were involved in the Assessment process, in each university. Data were requested from all the accredited institutions, but only 67% of universities have responded.

3.14. SCHEME OF DATA ANALYSIS

The researcher used the following statistical treatment for the main study:

i) Descriptive Analysis (Arithmetic Mean and Percentage)
ii) Relational Analysis (chi – square test)
iii) Associational Analysis (co-efficient of concordance ‘w’)