Sri Balaji Vidyapeeth, Pondy Cuddalore Road, Puducherry
[Accredited by NAAC with “A” Grade]
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Outline of SBVs SCORE for IGIDS

1. Sensitisation of the Programme to the CRRIs

2. CRRIs subjected to systematic teaching and training pertaining to the skill list of IGIDS.

3. Regular classes fortnightly by various departments individually or combined with case based, problem based learning approach addressing the skill list outlined by the institution.

4. The student can choose an elective [only if applicable in departments] and prepare a report at the end of the training.

5. Training will be focused on diagnostic aspects [to develop critical thinking and decision making skills].

6. All interns will be assessed periodically and also assessed at the end of posting for the various skills from the department.

7. All the assessment will be followed by feedback for improvement.

8. If found deficient in the acquirement of the skill, the student can ask for an extension and can obtain minimum competency level.

9. The entire programme is student centered. Choice of the student in pacing of the programme and electives are introduced to encourage student participation.

*The SBVs SCORE programme is tailor made for the institution using SPICES guidelines of Medical Curriculum and other contemporary best practices in teaching and learning to make the learning experience enjoyable*
Skill List

1. Ability to diagnose and plan treatment for common diseases and conditions of teeth and oral cavity, define the role of general dentist in handling such conditions and timely referral to specialist.

2. Ability to effectively motivate the public towards good oral hygiene practices, educate them to follow oral hygiene measures and to abstain from habits that could prove detrimental to the health of the dental and oral tissues.

3. Ability to diagnose early disease states or conditions that would require early recognition, like incipient carious lesions, premalignant lesions, developing malocclusions, growth and developmental disorders and to carry out preventive and interceptive measures by timely referral to the specialist.

4. Ability to diagnose pain in relation to head and neck arising due to odontogenic or non-odontogenic causes and outline the line of treatment for such conditions.

5. Ability to effectively use diagnostic adjuncts like biopsy, cytological examination, radiographs, blood investigations to arrive at a confirmative diagnosis and to correlate the results with clinical findings to arrive at a definitive diagnosis.

6. Ability to choose appropriate treatment from the available options for common oral conditions and to assist the patient in decision making by explaining the pros and cons of individual procedures.

7. Ability to prescribe the appropriate pain killers, antibiotics for common infections, diseases or conditions of the oral cavity.
8. Ability to correlate the impact of systemic health on the oral cavity and vice versa and to seek medical opinion through appropriate referrals.


10. Ability to recognize a child with special care needs, identify the limitations during treatment and realize the need for referral.

11. Ability to perform dental and oral procedures in a pediatric or geriatric patient and to involve the guardians or parents during treatment planning and management.

12. Ability to perform extractions and minor oral surgical procedures under local anesthesia.

13. Ability to perform early management of traumatic injuries to head and neck, carry out emergency procedures, to prescribe appropriate investigations and carry out emergency referrals.

14. Ability to identify common medical emergencies in dental office like bleeding, syncope, seizure, hypoglycemic episode, hyperventilation and anaphylaxis, to manage the same within the scope of a dental surgeon and also realize the need for early medical intervention.

15. Ability to assess vital signs, perform basic life support and administration of intra-muscular, intravenous and subcutaneous injections in appropriate situations.

16. Ability to carry out restorative procedures, endodontic treatment with regular as well as recently available materials and to assess the outcomes.

17. Ability to carry out replacement procedures for missing teeth with removable and fixed prosthetic options, to the satisfaction of the patient.

18. Appreciate the principles of esthetics as related to dental restorations and replacements and provide optimal results in restorations and replacements.

19. Ability to identify diseases of the periodontium and devise management protocols for the same.
20. Ability to carry out preventive procedures like oral prophylaxis using ultrasonic and hand instrumentation, pit and fissure sealants, fluoride application and early replacement of missing teeth.

21. Ability to realize the importance of laboratory support and be able to guide the technicians involved in fabrication of restoration and replacements.

22. Ability to perform comprehensive dental care, with an interdisciplinary case management strategy.

23. Ability to organize and execute public health programmes.

24. Ability to perform simple epidemiological research for assessment of demographical status, incidence or prevalence of a disease or condition.

25. Ability to identify the community needs in prevention of a dental or oral disease and to carry out an action plan for prevention or management of the same.

26. Ability to carry out community centered practice at a rural health set up and perform primary care services like scaling, restorations and simple extractions.

27. Ability to follow universal precautions, practice sterilization and asepsis during dental procedures and waste management.
Working Protocol of the Planned Training Programme for the CRRIs

SBVs SCOrE for CRRIs IN DENTISTRY

SBVs SYSTEMATIC COMPETENCY ORIENTED EDUCATION

Need Analysis and Development of the Curriculum: Was performed with the stakeholders, faculty and feedback obtained. A curriculum was designed by Dr. P. S. Manoharan under the guidance of the Vice Chancellor – Dr. K. R. Sethuraman, using SPICES guidelines by Harden. The curriculum was customized for the dental institution considering the national and global benchmarks. Operational definitions for each component of SPICES was given and the curriculum outline was planned for all the departments and templates were given to all the departments.

Sensitisation of the Faculty: All the faculty in the presence of the Dean and the guide Vice Chancellor were primed for the model internship training programme. Pitfalls and Lacunae were presented by the faculty and clarification done.

Proposal to the Board of Studies: Board of studies approval is mandatory to be adapted in the institution.

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<thead>
<tr>
<th>Activity by the trainers</th>
<th>Regular and Supplementary Students</th>
<th>Purpose of the outcome</th>
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</thead>
<tbody>
<tr>
<td>Sensitization of the Interns</td>
<td>At the start of the internship</td>
<td>Makes it student centered, to involve them in the programme.</td>
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<tr>
<td>Problem based Classes [Fortnightly] by all department faculty.</td>
<td>Fortnightly every Friday 11-1am Pretest post test administered and questions discussed for clarification.</td>
<td>Develop critical thinking skills and decision making skills</td>
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<tr>
<td>Periodic Review by the Curriculum Coordinator</td>
<td>Monthly review with the intern coordinator of the department</td>
<td>To notice the behavioral changes and remedial measures to be made by the curriculum planner</td>
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<tr>
<td>Formative assessment and remarks given periodically</td>
<td>Recording of Portfolio by the Interns and periodically checked by the coordinator</td>
<td>Reflection on learning by the candidates reinforces learning and make them accountable and responsible. Serves as a comprehensive record of the work of the students</td>
</tr>
<tr>
<td>Certification by the Head of Institution on the achievement of students</td>
<td>Receive the certificate based on the level of excellence in their training.</td>
<td>Incentive to work harder make them involved, interested, responsible and inspired. Presents a systematic referral record</td>
</tr>
</tbody>
</table>
Work done so far:

At Indira Gandhi Institute of Dental Sciences, the proposed curriculum was adapted and is in the pilot study mode to understand the pitfalls and common problems associated with implementation. A trial run was done by the head of the institution to capture working deficiencies. Later the programme was implemented to the regular batch of 2016-17 to study the acceptability, feasibility, working ease, cooperation by the faculty and students, adaptation to learning and involvement by the faculty. The programme was also implemented to the supplementary batch of 2017-18 to study the above mentioned features. Presently the characteristics would be observed, documented and remedial measures would be made before implementing to the first regular and supplementary batch of 2017-18 and 2018-19.

Summary of work:

1. Identification of the necessary skills required by an undergraduate of dentistry.
2. Development of Teaching learning activities – Non didactic – Case based /Problem based teaching in class room and discussions based on development of Critical thinking and decision making in clinical scenario.
4. Training modules for students to develop integrated approach in solving problems.
5. Systematic evaluation pattern which would lead to certification process.
6. Pilot study in process to identify pitfalls and lacunae in the existing programme. Narratives, questionnaire based feedbacks would be obtained to study the characteristics of the training programme.
Detail Description of SBVs SCORE

**Background:** Traditionally in the training of health professionals, the students and scholars receive instruction from practitioners to a large extent. The training is carried out with conventional approach and through sharing of personal and peer experiences. With the massive advent of educational science among the health professionals, the knowledge to deliver the instruction in a methodical and scientific approach was realized and efforts have been made by pioneering educationists to spread the philosophy and principles of education through various faculty development programmes. However, dynamic centers which have the wealth of equipped health professional educators are very minimal. There is a need for educationists and trained doctors to impart quality academic and skill training in the curriculum.

With the tremendous growth in the field of education amongst health professions, dental education lags much behind in innovations and introduction of scientific, time tested curricular models. There is still lack of impetus amongst the upcoming educationists to make the change. As a result there is an inherent lack of evidence in the field of dental education. The Dental Council of India has outlined guidelines which has tremendous scope for innovation when it comes to the curriculum. The evaluation aspects however may not have the scope for flexibility. It is high time to wake up to the fact that we are training the doctors of tomorrow with the dentists of today with the curriculum of yester years.

The Dental Curriculum has always followed the lines of medical curriculum in innovations. The teaching and training in Medicine and Dentistry have varied requirements of the undergraduate or the postgraduate. The Dental Undergraduate is expected to perform 75-80% of the procedures when the candidate exits the institution. The procedures are assessed during examination. Here the question crops up, whether it is justified to assess an undergraduate on a procedure which he
would have performed a few times before he reaches the competency level. The undergraduate is also unaware on the number of procedures he is confident to perform independently.

**Statement of the Problem:** During the internship, the training programme is also not taken seriously in many institutions. They are used to dispose out-patient consultation or overload of cases or perform official works of the department or the institution. There is no assessment performed by the trainers, nor a feed-back given on the improvement. In fact there are no separate curriculum designed for the interns during their period of stay in the institution. A plethora of work place assessment tools which has evolved. Such tools do not find their place in assessment of the trainee in their work place. As a result the assessment for learning never happens in the training period during internship in dentistry. Internship and Post graduation in Dentistry provides tremendous scope to use such tools to assess and enhance the competency levels in various aspects of dentistry.

In the global scenario, many dental schools which have realized such deficiencies are marching towards competency based curriculum. In other institutions, it is a serious wake-up call to all dental educators to think globally and act locally in their respective places.

The Dental Council of India has laid down policies as regulations and syllabus for content. It is the responsibility of the institution and the dental educators to chart a curriculum which should be tailored and made palatable for the stakeholders. Desirable changes would be to have directives globally from various councils and unions for a convergence for standards for dental education to provide globally competent dentists.

The following literature will guide the reader, to understand the need for a customized programme for dental graduate interns. It gives an outline of how to develop a robust, relevant [globally and locally], enjoyable training curricular module during the internship.
Evolution of Curricular Models for Health Professions Education: Educational evolution has driven the curriculum from a structureless mode to Gurukul mode and to the most recent elaborate network of activities based on sound scientific principles in education.

The technical/scientific model is based on logic reasoning and adapted from general educational philosophies and principles, whereas the non technical is more centered on the student, individualized, concentrate of the type of learning, subjective and personal. The Tyler and their kind of curriculum for the technical models whereas the Figg’s, Competency Driven, backward design

The remarkable breakthrough in the approach towards education is a shift from teacher centered to student centered. Some other educationists viz., Ornstein and Hunkins in 2009 and Sowell in 2005 came out with yet another design classification as subject centered, learner centered, society centered and discipline centered. Many dental schools follow the discipline centered curriculum for the sake of convenience and even have compartmentalized patient care and work in silos according to disciplines.

Neary in 2003 have mentioned two models in curriculum. The process model which emphasizes activities and effects and the product model which emphasizes intentions and plans. The product model could be seen as an adaptation from an earlier model by Tyler in 1949, which was a major influence on education in America. As early as 1938, Dewey has mentioned that the tailoring of curriculum is better and it is often a blend of the philosophical and psychological basis of learning a particular discipline.

Blended design concepts like the SPICES – acronym of Student Centered, Problem Based, Integrated, Community based, Electives, Systematic developed by Dr. R. M Harden has been accepted as one of the innovative, effective approach towards health professions education.
Competency and outcome based curricular design which have been suggested in a candid manner over the years and has emerged as a strong model in the past decade. Many educationists have suggested core competencies from a health professional point of view.

The ACGME – Accreditation Council of Graduate Medical education have proposed Medical knowledge, Practice based learning and improvement, Patient care, systems based practice, professionalism and interpersonal skills and communication as core competencies. Here we are able to appreciate that the interpersonal skills and communication skills forming a separate entity. It is no more linked with professionalism. The assessment of above listed competencies for all the skills the health care professional should be trained in should be carried out. The level of achievement should also be noted which should be used in the formative assessment for providing feedback and also to evaluate the trainee. Work place assessment tools like DOPS – Direct observation of Procedural Skills and mini- CEX [ Clinical Evaluation Exercise] for assessment of procedures and diagnostic skills should find its place in the modern curricular for the undergraduate or postgraduate dentist. All the assessment should be focused towards the competencies.

**Requirements for a Dental Curricular Model:** No curriculum which is designed today can be permanent. It is prone to amendments, revisions or major redesign. It should be understood that once designed even the best of the curriculum design cannot be shelved permanently. It should also be understood that the curriculum is not a universal recipe for all institutions. As the curriculum is a part of education system, it requires the characteristic of a good system which is flexible and open. A rigid curriculum with all details would reduce the curriculum designers to explore their creativity and try innovations in teaching learning and evaluation methods. The design of the curriculum in a health care system should also be appropriate for the culture, race and disease patterns native to the institution. Global relevance of the curriculum should be
imparted in the syllabus, mode of teaching and also evaluation. There are various models in vogue based on sound educational philosophies.

A progressive or a hybrid curriculum would be relevant to the current situation. Problem based learning curriculum approach had practical problems which prevent them from being incorporated to all learners. Integrated curricular approach which focuses on comprehensive problems with involvement of various disciplines in health care demands infrastructure, taskforce, elaborate planning and designing of each modules. SPICES model by RM harden in 1984 was proposed to develop the skills required by the health care professional in a systematic, student centered manner and also imparted training with problem based, integrated approach. Electives provided freedom and flexibility to choose the subject of choice for the student. Credit based evaluation in curriculum also have withstood criticisms world-wide, but is considered one of the best in evaluation and reporting in terms of uniform standards and flexibility.

A new curriculum could be designed with a thorough evaluation of the background, data from the stake holders, council regulations, community needs, global benchmarks. If the curriculum is a revision of the previously existing curriculum, then we should be double sure before implementing any change, for change for the sake of change would not enable enhancing quality of a desirable outcome. Hence, the situation analysis is mandatory to understand the pitfalls, advantages and disadvantages. Situation analysis should be carried out with thorough feedback from stakeholders of a particular program for which the curriculum would be designed.

The identity of a model curriculum in dentistry is still to be established. In the process of tailoring a curriculum, it has been found that a hybrid model will be the best to suit the needs and demands of a particular institution which would be based on many factors as listed above. Many curricular
models were proposed based on the existing knowledge, relevance to the institution of the authors and locale to the community where they live.

The Indian Dental Curricular guidelines in the Dental Council of India regulations have given enormous possibilities and scope to impart innovation and experiment with global trends in teaching learning and evaluation. For example Objectivification of practical examinations in OSCE format is mentioned, which many of us fail to recognize and conveniently ignore for various reasons.

With the concept of Transformative education, the future students in health care professions are supposed to be “change agents” with their unique and remarkable attributes needed for tomorrow’s doctors. Managerial skills, professionalism and communication skills are to be embedded in the curriculum of any health care profession.

Not all changes or revisions are desirable. Bringing about a desirable change is needed which involves active involvement of facilitators at all levels. Action research should be encouraged which could provide immediate results and correction and implementation at a small level to evaluate the outcomes.

With the assimilation of outcomes curriculum can be tailor-made to suit the institution. Many of the budding facilitators feel that curricular designing is beyond their realm and they are not empowered to contribute in the process. Freshness of ideas and wisdom from experiences should work together to create the curriculum which is customized for the requirements of the institution.

**Implementation and Evaluation:** The implementation of the new curriculum should start with the information of the educational objectives from Goals, Vision of the institution to specific learning
objectives to the implementers. Each activity in the design should have their focus set on these objectives.

During the implementation process, observe for untoward consequences and plan an immediate change in the direction or approach. Action research should be encouraged to detect errors, deviation or any undesirable interim outcomes for timely change in the planned action.

Any process which is implemented goes through evaluation of the Curriculum with the responses from various stakeholders. The desirable change, which the new curriculum intended for health care professions, would be reflected in quality patient care, teaching learning activity and research which would be the three pillars which contribute to growth and stability of an institution. The outcomes from these three areas should be compared with the educational objectives from institutional to specific learning objectives. The achievement gap should be identified and realistic objectives should be designed to minimize the achievement gap.

The pacing of the curriculum should also be evaluated for feasibility through feedbacks from teachers and students. Exit Questionnaires and Focus Group Discussions with appropriate stakeholders would enable us to evaluate the effectiveness in which the curriculum is delivered.

The outcomes which are observed and measured are the right kind of performance indicators of a system. After a thorough evaluation of the outcomes, improvements and suggestions could be imparted in the framing of new educational objectives, if the curriculum is subject to revision. In a dental curriculum as the objectives are framed towards skill based training approach, the evaluation of the effectiveness should be oriented towards evaluation of performances of the stakeholders in particular skills. This indicates that the training design should be made with a competency based approach. With the current scenario shifting towards Entrustable Professional Activity, evaluation should certify the undergraduate or post graduate student based on the same.
The Design and the Process:

An outline of the development of a curricular process is given in the Flowchart-1. The first step would be the list of Skills - Entrustable Professional Activity / Skills, which the undergraduate dentist should master, is made from the relevance, commonality, requirement, expectation of an undergraduate or postgraduate. [Table -1] The assessment of the skills in all six competencies mentioned in ACGME – American College of Graduate Medical Education guidelines, could be adapted for dentistry. The undergraduate should be able to perform independently the basic procedures which is ought to perform in his routine dental practice. This should be the goal of any training programme. The post graduate education could aim at a higher level of proficiency, where he would be able to teach and train a skill to another peer or a junior trainee.

Once the competencies and Entrustable Professional Activity /Skills are outlined, all the departments should be involved in the process of listing the procedures the undergraduate should be able to carry out independently. Procedures should address all the domains of learning. Formulate the objectives, mode of teaching learning method and assessment methods. checklists should be developed for each procedure, required level of achievement of each competency should be mentioned.

After the evaluation is complete from all the departments the head of the institution issues a Statement of Achievement of the Entrustable Professional Activities with a remark on their satisfactory performance.

The global benchmarks are used not only to set objectives but also to analyze the results of evaluation in comparison with them, so as to understand the current status. The visionaries, policy makers who head the institutions should have the caliber of an educationist to be an academic leader. Such a leader should be abreast with the latest happenings and trends in education and
necessary changes can be brought also with the top down approach. Action research with innovations and latest trends should be encouraged so that timely changes and responses could be observed time to time.
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<th>Sl No</th>
<th>Entrustable Professional Activity / Skills</th>
<th>MK</th>
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<td>9</td>
<td>Ability to perform behavioral management with applied principles of child psychology in children requiring dental treatment.</td>
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<td>12</td>
<td>Ability to perform extractions and minor oral surgical procedures under local anesthesia.</td>
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<td>Ability to perform early management of traumatic injuries to head and neck, carry out emergency procedures, to prescribe appropriate investigations and carry out emergency referrals.</td>
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<td>Ability to identify common medical emergencies in dental office like bleeding, syncope, seizure, hypoglycemic episode, hyperventilation and anaphylaxis, to manage the same within the scope of a dental surgeon and also realize the need for early medical intervention.</td>
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<td>Ability to carry out restorative procedures, endodontic treatment with regular as well as recently available materials and to assess the outcomes.</td>
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<td>Ability to carry out replacement procedures for missing teeth with removable and fixed prosthetic options, to the satisfaction of the patient.</td>
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<td>Appreciate the principles of esthetics as related to dental restorations and replacements and provide optimal results in restorations and replacements.</td>
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<td>Ability to carry out preventive procedures like oral prophylaxis using ultrasonic and hand instrumentation, pit and fissure sealants, fluoride application and early replacement of missing teeth</td>
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<td>Ability to realize the importance of laboratory support and be able to guide the technicians involved in fabrication of restoration and replacements.</td>
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<td>Ability to perform comprehensive dental care, with an interdisciplinary case management strategy.</td>
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<td>Ability to organize and execute public health programmes.</td>
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<td>Ability to perform simple epidemiological research for assessment of demographical status, incidence or prevalence of a disease or condition.</td>
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<td>Ability to carry out community centered practice at a rural health set up and perform primary care services like scaling, restorations and simple extractions.</td>
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<td>27</td>
<td>Ability to follow universal precautions, practice sterilization and asepsis during dental procedures and waste management.</td>
<td>**</td>
<td></td>
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</tr>
</tbody>
</table>

MK – Medical Knowledge; PC – Patient Care; PBLI– Practice based learning and Improvement; SBP – Systems based practice; P – Professionalism; ICS – Interpersonal and communication skills.

Milestones = Beyond par + 1; On par 1; Below par -1
### Example of oneSkill/EPA in the Department of Prosthodontics

<table>
<thead>
<tr>
<th>Activity</th>
<th>EPA no</th>
<th>Teaching Learning Method</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Theoretical:</strong> Impression making in edentulous arch</td>
<td>17,27</td>
<td>Didactic lecture, Q &amp; A test, MCQs</td>
<td>Didactic lecture, Q &amp; A test, MCQs,</td>
</tr>
<tr>
<td>Classificaiton of impression materials, trays, theories of impression making, water powder ratio, disinfection protocol Advantages &amp; disadvantages, Precautions &amp; management of compromised conditions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Procedural:</strong> Chair position, selection of tray, manipulation, disinfection and preservation of impression</td>
<td>17,27</td>
<td>Demonstration, Videos, Learning on models and Apprenticeship</td>
<td>OSCE/Conventional practical examination</td>
</tr>
<tr>
<td><strong>Behavioral:</strong> Care for neatness, explanation of procedure, gentleness in handling, patient comfort</td>
<td>17,27</td>
<td>Role play, demonstrations</td>
<td>OSCE</td>
</tr>
</tbody>
</table>
Flowchart -1 : Developing a Skill Based Model for Undergraduates

**Entrustable Professional Activities - Skills of an Undergraduate and Competency Grid** developed based on DCI guidelines, relevance, required level of proficiency and training Table -1

Department wise Training of Procedures, Theoretical knowledge and Behavioral [Include set of procedures, knowledge and attitude the student is expected to master – Procedures categorized Domain wise according to Blooms taxonomy]

All procedures should be mapped against an Entrustable Professional Activity listed in Table 1 [For ease of assessment]

Develop Specific Learning Objectives for the each activity

Adopt an apt Teaching Learning Strategy [Involve active and participatory learning and small group discussions]

Objective Evaluation

Portfolio method of self learning and assessment

Certification based on the skills achieved
What would SBV/IGIDS’s SCORe offer the Dental Fraternity?

1. A customized design for Indian Institutions which is relevant [globally and locally]
2. A certification which would be through systematic assessment after meticulous training in the relevant Professional activity and competency.
3. Impetus on development of communication skills and professionalism through the course.
4. Student centeredness of the curricular design which would involve the student to participate more in the learning and training activities.
5. More problem based/solving approach to develop critical thinking and decision making skills as a general dentist.
6. Incorporation of electives encourages student to develop their area of interest.
7. Making the training robust with assessment using contemporary work place based assessment tools.
8. Providing timely constructive structured feedback for scope of development of the skill and competency required.
9. A Statement of Achievement at the end which would be an incentive for the student to participate in training programme more actively.