ENVIRONMENTAL AWARENESS TRAINING MANUAL (EATM)

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(NEST) IBADAN.

EDITOR: *Enoch E. Okpara*

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MODULE 8: METHODS

In this module, the various methods that can be used effectively in raising and inculcating environmental awareness among learners, are outlined. At the end of the module, you should be able to define each method, as well as identify its major characteristics. You should also be able to understand the merits and demerits of the various methods. In this respect we shall go through the following, which are not mutually exclusive but can be used to complement one another:

* Audio-Visual (A-V) methods;
* Discussion methods;
* Entereducate methods;
* Expository methods;
* Inquiry methods;
* Peer teaching methods;
* Practical methods;
* Problem-solving methods;
* The Project methods;
* Values clarification methods.

(i) Audio-Visual (A-V) Method

- This is an instructional process whereby some equipment and materials that appeal to both senses of hearing and seeing at the same time, are used to bring about desired changes in the behaviour of the learner. The method demands the combination of sound-sight-producing equipment and materials at the same time without relying completely on either.

- Audio-Visual equipment and materials could be in three categories:
  (a) Electronic, such as sound-motion films, the television and the video;
  (b) The modified electronic/electrical, such as the audio-cassette charts, pictures, diagrams, realia, overhead projection, filmstrips and slides.
  (c) Non-electronic, such as the teacher's unmediated voice, when used along with relevant visuals, can also be an acceptable audio-visual method.

- Audio-visual methods can be very effective in raising learners' awareness on such environmental issues as soil erosion; waste disposal; bush burning; recycling process; overgrazing; alley cropping; game poaching; deforestation; efficient land management; population-environment relationship; flood control measures; ozone layer depletion, oil spillage; etc.

- Among the numerous merits of the A-V methods is the fact that they can be highly structured, visually and aurally more organized and generally more stimulating than most other methods.

- One major demerit among others, is that they cannot be used without electricity. Additionally, they are very costly and required expert handling, thorough planning and sophisticated skills.

(ii) **Discussion Method**

- This is an instructional process which enables learners to examine with the guidance of a moderator, some controversial issues or topics in detail and thus contribute some information, facts and data to facilitate the decision making process, such as how best urban waste disposal can be handled.

- Discussion methods can take various forms, among which the following are particularly important:

(a) Round-table (R-T), or an informal type of discussion in a relaxed and threat-free environment in which up to ten discussants express their views on the issue tabled for discussion. Participants sit round a table and discussion is moderated or facilitated by the teacher or a class member. Topic for R-T discussions could range from local to global environmental concerns, such as the threat to biological diversity; the significance of climate change; conflicts over water rights; the problems of desertification; species extinction; hints on the eradication of guinea warm; the benefits and demerits of fertilizer application.

(b) Panel discussion, which being more formal, usually requires more serious preparation than the R-T. Both moderator and discussants sit, facing the audience (e.g. the class) with each speaker limited to a specified length of time (e.g., five minutes) to express his/her views on the subject, after the moderator has introduced the members (numbering about five) as well as the topic. The moderator leads the discussion by asking the discussants relevant questions. In a classroom situation, members of the class can also ask any of the panel members questions for clarification of issues.

A summary of the discussion is usually given at the end of the panel discussion by the moderator.

(c) Debate, which is used as the best alternative when discussions break down. In a formal debate, two teams argue in alternate order for, or against an issue, a debatable problem or question, such as whether government should or should not enact and enforce more stringent laws against oil pollution.

A panel of "impartial" judges and a moderator keep time and record, and assess the arguments and the impact they have made

on the audience. In an informal or balloon debate, each of the four to six presenters advocate for different topics which other participants help to elaborate critically.

After the team presentation, members of the audience may be given opportunities to present their views. At the end of it all, the judges' score sheets could be used to decide which team had more effectively and convincingly presented its arguments than the other.

(d) Brain storming is a technique of storming a talkable issue or problem intensively with the brainwaves within an informal and free setting, devoid of constraints and criticism. The basic purpose is to "milk" the group dry of creative, workable ideas that can solve the problem at hand. Usually, it is ideal to work in small groups of between five and eight persons before coming together as a whole class (or group) to discuss group findings and to take appropriate decisions for implementation. Brain storming requires careful handling to avoid being too noisy or to degenerate into a debate.

In Discussion Methods, the teacher's role is to:

(a) plan the discussion well ahead of time;
(b) specify rules, conditions and maximum time allowed;
(c) clarify the environmental problems or issue and popularize it among the learners;
(d) evaluate the learning experience.

In Discussion Methods, participants could sometimes play positive roles which include leader, encourager, facilitator, consultant, harmonizer, organizer, etc. Negative roles may include aggressor, recognition seeker, dominator, self confessor, clown, non-participant, etc.

The merits of Discussion Methods include that they facilitate self confidence, initiative, critical thinking, tolerance, attentiveness, team spirit, as well as inducing learners to think of alternatives for problem solving. A major demerit is that they could become emotional and unbalanced and hence degenerate into pandemonium, if not properly handled and prepared for.

Entereducate Method

Entereducate is a generic term which highlights some methods of active learner participation, involving education through entertainment. Based on the psychology of motivation, it is a popular persuasive and profitable teaching method which can enliven, easily educate and inform, while entertaining the class.

Some entereducate techniques include:

(a) dramatization (e.g. of community attitude towards health and environmental sanitation)

(b) cartoons, consisting of drawings which comment, with or without words (e.g., drawing of children dumping refuse in a place with the sign DO NOT DUMP REFUSE HERE).

(c) role - playing, made up of a spontaneously organized activity game in which participants pretend to be others. Devoid of prepared scripts, rehearsals nor memorization, participants just assume roles which they are inspired to act on the spot to show specific behaviours or situations which are later discussed by the whole class (e.g., the daily routine of a rural woman as she interacts with the environment-looking after the home, then moving to, and working in the farm, collecting and carrying home fuel wood and thence going to the stream to fetch water).

(d) puppetry - Puppets are small figures that can be manipulated by props, or suspended on strings behind a lighted curtained stage before the audience. The puppeters may or may not provide the speech components which could also be audio-recorded to synchronize with the movement of the puppets.

(e) simulation - to simulate means to feign, assume false appearance, pretend or mimic as a method of initiating the real-life situations, processes or behaviours. Participants can simulate community mobilization for the purpose of tackling a local environmental problem such as checking erosion, clearing debris from the stream bed, and indiscriminate felling of trees. The end product is joint problem solving and decision-making.

(f) simulation games - These combine the characteristics of role playing and reality modelling with game attributes such as entertainment, specific rules, elements of luck and competition. When these are designed for learning new skills, values or information beyond the simulated situation, they are accepted as instructional simulations, instructional games and instructional simulation games.

(g) monologues and dialogues - These are short speeches made by a person or two, respectively. They could be rehearsed, spontaneous or impromptu, verbal or written. The related topics, ranging from "how to prevent erosion in the school compound or local government headquarters" to "government"; "politics"; "laws and regulations relevant to environmental protection and resource conservation".

Entereducate can be used when there is need to:

(a) prepare learners for various roles related to the environment;

(b) develop among the learners sharp imagination, creative skills and positive attitude towards the environment;

(c) encourage self-expression, public speaking, ability to assume roles, etc.

(d) create environmental awareness, reinforce social values and improve quality of life.

Merits of entereducate include that they are flexible, motivating entertaining and retentive. They make it possible for shy learners to gradually overcome their shyness. A major demerit is that they can be expensive, time consuming and require special skills and expertise to use them effectively.

iv) Expository Methods

They are systematic verbal explanations which involve bringing to light, the underlying facts, principles and relationships.

The most common ones include the following:

(a) the lecture, which is a teacher-centred instructional technique designed to present information and ideas by verbal communication e.g. on "The dangers of bush burning". An effective lecture on this will consist of three parts, namely, introduction, detailed information and summary.

(b) story-telling. This is one of the oldest methods of value transmission. In environmental education, fictitious or factual stories, myths and fables related to creation, nature, the atmosphere, water, the earth, forests, animals, and the gods, can help to express the values a society holds about the environment and its relationship to humans and nature.

(c) speeches - A speech is a formal talk. It can be prepared or unprepared (impromptu). Prepared speeches are better organized, more logically presented and more factually loaded. An example of a speech that is designed to enhance environmental awareness may be titled, "The role of the youth in environmental protection", or "Women as custodians of environmental knowledge".

(d) illustrated talk - This occurs where ordinary speeches are supplemented with visuals and, or audio illustrations, electronic or ordinary flat visuals including maps, data charts and models.

(e) radio broadcast - Radio talk involves taped, recorded or oral presentation by the broadcaster and effective listening by the audience. For example, a Minister's or Commissioner's speech on June 5, the World Environmental Day, can be taped and used for instructional purposes because of the policy implications of such broadcast.

Merits of expository methods, include their economy and cost effectiveness in terms of time, cost, equipment, materials and space, ability to be packaged in audio recording format for preservation and re-use. Major demerits include learner passiveness, limited individual attention and imposition of teacher values.

(v) Inquiry Method

- It is a systematic and scientific method which aims at discovery.

- Three TYPES of inquiry exist, namely:

  (a) guided inquiry, in which the teacher generates problems and provides step-wise guidelines for finding solutions. Such inquiry can focus on for example, the issue of why many streams are today silting up and their water is not as sparkling as it used to be.

  (b) free inquiry, in which the learner originates the problems and through trial and error attempts to arrive at a solution, with the teacher serving only as a consultant.

  (c) semi-guided inquiry, which lies midway between the first two. It allows a few hints from the teacher on problem identification (problem shooting) and on their solution. Such hints serve as elementary guides for the learner.

- **There are four TECHNIQUES of inquiry, made up of:**

  * the survey, embracing field survey, library survey, laboratory survey and time-lapse survey, the last being one that tries to compare what was, with what is, and then extrapolates to establish what will be the situation of the environment if a noticed trend (such as indiscriminate game hunting) is not checked.

  * the interview, which involves going out to ask questions orally and recording the responses either on tape or paper. A structured interview limits the interviewer to the listed questions while an unstructured one does not.

    Closely associated with interviews are some instruments such as interview schedules, questionnaires (in situ or posted), checklists and opinionnaires which could supplement the oral interview.

  * opinion polls - This is a survey of what people think about a particular phenomenon such as the environment, new anti-pollution law or the performance of an agency responsible for environmental protection. Learners are given the background of the phenomenon and thereafter, relevant polling questions which could demand Yes/No, Agree/Disagree dimensions are formulated and administered to sample audience. Responses are later analysed to determine the opinion pattern.

* field trips - These provide opportunities for learners to observe, collect, measure, record, analyse and interprete data about the environment.

- A major advantage of the inquiry methods is that they can facilitate the development of initiative, spirit of curiousity, critical attitudes and objectivity among the learners. On the other hand, they can be uneconomical in terms of time, money, energy and risk involved.

(iv) Peer Teaching

- It is an instructional process whereby school or class-mates who have demonstrated high level mastery of knowledge, skills or attitudes in specific content areas, are used to assist their mates to acquire and develop mastery in such areas.

- Each-one-teach-one) technique is an expanded form of peer teaching. It involves reaching out to the learners through their school-, work-, or playmates, friends and relations who have already acquired demonstrable mastery of attitudes and skills that are environment friendly.

(vii) Practical Methods

- Practical method refers to the systematic process of behavioural changes based upon demonstrable activities and real engagement in doing something. It is participatory and pragmatic in nature, emphasizing that learning should solve actual problems in real life situations rather than only intellectual and theoretical ones.

- **Practical Methods take many FORMS, which include:**
  (a) practical measurement, involving enumeration, examination, capacity, weight, linear and angular measures, volume, area, mass, duration, brightness, currency, heat, speed and scale, among others.

  (b) experimentation which is borne out of the need to test or discover something (that was unknown before) and to use already acquired knowledge and skills. Experimentation also affords the opportunity to find out some components, cause-effect relationships and hidden or unknown interactions between system components. For example, experimentation in this regard can take the form of planting the same maize, species on two different plots of land, the one prepared with sufficient organic manure and the other with no manure at all. Learners watch the growth of maize in the two plots and at maturity, compare the produce from the two plots. They now draw their own conclusions.

(c) construction is the technique of putting parts together to create something concrete or abstract. It allows active learner participation and stimulates need for preservation of creative works such as models, drawing, painting, poster, cartoon, collage, (an artistic composition made of various materials-paper, cloth or wood - glued on a picture surface), or any creative writing such as drama, poetry, essay, etc., related to the environment.

- Creative construction carries with it some self-fulfilment. Using the construction technique for environmental awareness is therefore a very powerful strategy for all levels of education.
- Merits of the practical methods include that: they are exceptional for manipulative or psychomotor skills development; they motivate both teachers and learners and may provide stimulus for follow-up activities. Conversely, they can be costly and time-consuming, and can pose problems of space such as laboratory, workshop, display-units and show rooms.

(viii) Problem - solving Methods

- It is a learner - centred process of combining already acquired knowledge and skill to get to the root of a problem.

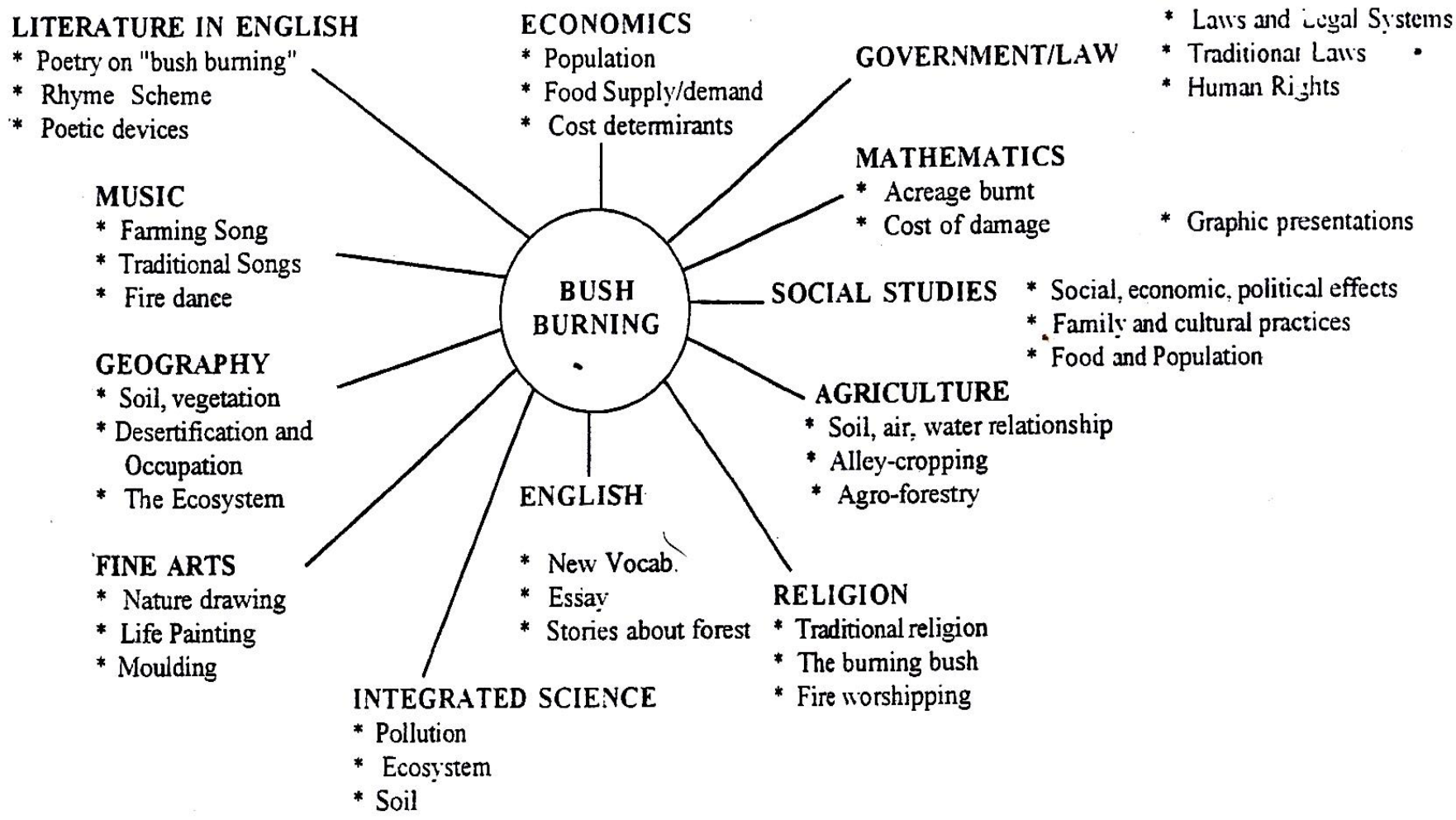
- Three relevant techniques of this method are: questioning, quizzes (short tests on specific areas) and puzzles (perplexing questions or situations that are thought-provoking).

(ix) The Project Methods

- It is an integrated instructional process whereby a learner or a group of learners performs a unit of integrated activities on a topic based on clearly defined proposal under minimum guidance by the teacher.

Figure M 8.1 illustrates that a topic such as "Bush burning" can be investigated using the project method. The figure shows a three-week project. Each subject area has three key topics to be treated, one for a week or thereabouts.

Fig. M8.1 **SUBJECT CORRELATION ON BUSH BURNING USING THE PROJECT METHOD**



(x) Values Clarification

- Value clarification represents a systematic strategy whereby emotional awareness and reasoning are combined in the active process of critically examining personal and social choices. Clear understanding of values facilitates the possibilities of making conscious choices and decisions which are consistent with the beliefs, needs and interests of the individual.

- The stages on valuing process are seven:

  * awareness - the individual has to be aware of the existence and potential values of a thing or phenomenon, before any form of emotional attachment is possible (e.g., cherishing the value of a forest reserve, stream, spring or wildlife sanctuary).

  * attending - before one gives attention to the environment or anything else for that matter, awareness must first be established.

  * receiving - in order to receive, one has to attend to, since what is not attended to cannot be received. Rejection at this stage ends the valuing process, such as the rejection of the traditional religious reverence with which sacred forests are held.

  * responding - Reacting to a received environmental message can be either positive or negative.

  * valuing, cherishing or esteeming - a value which is cherished is voluntarily exhibited publicly. It is repeatedly practised as evidence of feeling comfortable and happy with it.

  * internalization - This involves integrating and demonstrating an internally consistent value system based upon cherished acceptance.

  * characterization - the positive environmental values become a chosen life style and a philosophy; so it cannot be parted with. The individual not only thinks and acts 'green', but is generally known to be so. He is characterized by being so.

Techniques in value clarification differ with nature, components, direction and variety of values. They are quite many but only the 'futures wheel' demonstrated in Figure M 8.2 will be discussed here.

The futures wheel is a consequence - oriented, reflective and innovative technique of values clarification. It involves projecting into the future, for example, the consequences arising from a specific environmentally-related decision, activity or inactivity, for example, sand-digging, bush burning or tree-planting. The projection could be in three levels.

(a) individual, family and immediate community,
(b) state and national level,
(c) international and global level.

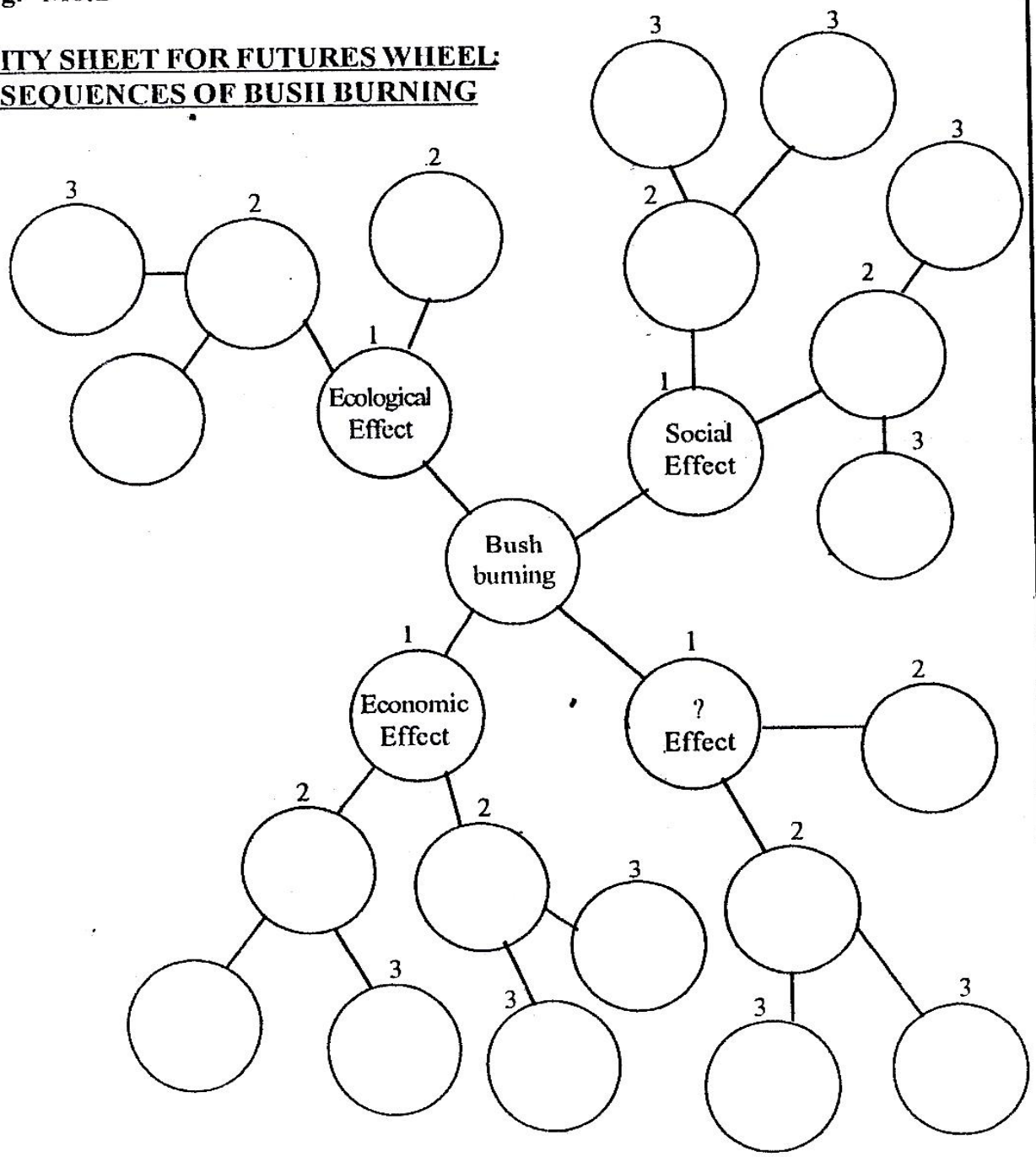
At each level, the social, economic, political, ecological, agricultural, medical or any other consequences of say tree-planting, sand-digging or erosion can be involved.

* Both learners and teachers can play the futures wheel together. As individuals or small groups, they should:

(a) design the wheels (circles) to show three levels of circle as shown on Fig. M 8.2.
(b) identify the core-wheel with any environmentally-related activities or behaviour, e.g., tree-planting.
c) identify all first level circles (those nearest the core circle) to represent you as an individual, your family or the immediate community.
(d) identify the second and third level circles to represent the intermediate and the ultimate (distant) environments or consequences, respectively.
(e) write in appropriate circle one immediate or future effect of the environmental activity in the core circle e.g. tree planting on:
    (i) you and your immediate environment
    (ii) your intermediate environment
    (iii) your distant environment.
(f) join with a smooth line the different effects which you think are inter-related, irrespective of whether they are social, ecological, economic or agricultural.
(g) discuss with your colleagues how such effects inter-relate personally, locally, nationally and globally.
(h) explain the impact of such effects on the environment now, and possible consequences in the immediate and distant future, if the processes continue unchecked.
(i) Make an oral commitment in relation to the core activity (e.g., tree planting).
(j) Translate the commitment into an activity (e.g., plant a seedling and tend it until it grows into a tree or shrub).

Fig. M8.2

ACTIVITY SHEET FOR FUTURES WHEEL: CONSEQUENCES OF BUSH BURNING



ACTIVITIES

1 Using your own words, explain what you understand by audio-visual (a-v) methods.
2 State three categories of a-v methods
3 Define discussion method
4 List the instructional techniques categorized as discussion
5 Prepare and use any adequate entereducate method to drive home the need for clean and filth-free surrounding
6 Using any appropriate expository method, illustrate the relationship between poverty and environmental degradation.
7 Let the class or learners discuss and agree on the most suitable type of inquiry method for determining the reality (or otherwise) of species extinction or endangeredness.
8 Let the learners and the teacher summarise the major elements of peer teaching. At the end of it, let the learners list sound environmental habits they have learned from peers.
9 Given the topic "soil erosion" or " deforestation" or "desertification" or "environmental pollution", organize a lesson using the practical method, suitable for your subject area.
10 Using the problem-solving method, design and implement a lesson on "The poor crop yield" in your community.
11 Draw a two-week project to show the relationship between any six subject areas and topics on 'erosion'.
12 Design and use a two-week project on ' pollution'.
13 Briefly explain the meaning of values clarification.
14 Make a list of people in your community or local government area who are known to hold certain sound environmental values.