

## Lesson Planning - A Typology

Planning is very important in instruction as in any enterprise. Adopting a top-down planning strategy, there are three levels to the planning of instruction. The plan of instruction for a particular academic year of a particular subject is decided at the beginning of the year. There are several factors that are to be considered in the process of planning. Based on the plan of instruction for the whole of the academic year, unit and lesson plan are developed. Thus, planning of instruction has three levels. They are: (1) Year Plan, (2) Unit Plan and (3) Lesson Plan. The year plan and unit plan will be briefly discussed in the following pages. The lesson plan will be discussed in detail.

### Year Plan

A year plan is a plan for an academic year. Based on the number of working days in each quarter (term), the number of class periods available to teach a particular subject is estimated. The time that will be spent on co-curricular activities, vacations in each term, local holidays, study holidays and examination days are to be taken into account. Then, the time available is distributed among the different units included in the syllabus. Thus, the year plan stipulates the time available (in number of class periods) to teach each unit, the month in which each unit will be taught and the relative weights to the instructional objectives in each unit. The teachers of the same faculty can sit together and decide on the year plan. However, in the state of Kerala, the termly and annual examination procedures and affiliation of schools to different unions (for examination purposes) have ruled out the possibility of any such school-based decision. There is uniformity in every aspects of instruction and teachers are not directly involved in the development of a year plan. Teachers get the year plan to be implemented and their job is made easy. It is desirable to have a year plan for each school taking into account the peculiarities of the school.

<b>Year Plan</b>										
Subject:			Standard:							
School:			Year:							
No	Unit	Month	No. of Periods	%		Objectives in %				
				1	2	3	4	5	6	7
1										
2										
3										
4										
5										
Total										

1. Knowledge    2. Understanding    3. Application    4. Skills  
5. Interest    6. Attitude    7. Appreciation

## Unit Plan

A unit is a mutually related content area. According to Preston, “A unit is a large block of related subject-matter as can be overviewed by the learner” (cited in Sharma & Sharma, 1971). It may consist of several sub-units or topics. A unit is organised in such a manner so that each lesson plays a role in the development of the unit. Unit planning is an important aspect in the planning of instruction. Importance of a unit plan is that it breaks up the year’s work into small sections, which students can understand, and overview (Thurber & Collette, 1964). It is argued that most students work better on a series of short tasks than on a few large ones. The purpose of the task is better understood when the task is smaller.

A unit plan can have all the elements of a lesson plan. But for practical reasons, different authors have suggested different formats for the use of teachers. The simplest format for unit plan includes the name of the unit with time allotted, major objectives, learning outcomes and evaluation items (Thurber & Collette, 1964). The unit plan suggested by Soman (1987) includes general information such as subject, standard, time, introduction, pre-requisites, objectives and specifications, teaching aids, learning experiences and evaluation items.

The unit plan must invariably include the pre-requisites relevant to each unit, which will help in the preparation of the class. Referring to the year plan, the teacher can have an idea about the time allotted to teach a particular unit. The demonstrations and explanations should be arranged in such a way so as to finish the unit in the prescribed time. While teaching, the weightages to be given to each objective should be borne in mind. The learning experiences should satisfy the requirements for realising different objectives in their respective weightages. An idea about the weightages to be given to the different objectives will be given in the year plan. A unit plan has the following eight sections:

1. General information
  - a. Subject
  - b. Standard
  - c. Unit
  - d. Time (in class periods)
2. Content overview (a brief summary of the unit)
3. Pre-requisites (which will be used in the introduction of the unit)
4. Statements of instructional objectives with items of content analysis.
5. Teaching Aids.
  - a. Glassware/Instruments
  - b. Chemicals/Consumables
  - c. Improvised Apparatus/Charts/Models
6. A three-column format with content, objectives with specification and learning experiences.
7. Evaluation items

8. Home Assignments
  - a. Written assignments
  - b. Activity Assignments

### **Lesson Plan**

Careful planning of classroom lessons is the key to successful teaching (Thurber & Collette, 1964). A lesson plan gives direction to the teacher (Das, 1985). Different people interpret the term lesson in different ways. Generally, teachers take it as a work to be covered in a class period, which runs for about 40 minutes (Gupta, 1985). About half a century ago Good (1945) defined a lesson plan as a teaching outline of the important points of a lesson arranged in the order in which they are to be presented which may include objectives, points to be made, questions to ask, references and assignments.

The importance of lesson plan has been detailed by many authors (e.g., Joseph, 1982; Sharma, 1996). However, research findings suggest that teachers have three reasons for lesson planning (Clark & Peterson, 1990; pp 70-71). They are: (1) planning to meet immediate personal needs (e.g., to reduce uncertainty and anxiety, to find a sense of direction, confidence and security); (2) planning as a means to the end of instruction (e.g., to learn the material, to collect and organise materials, to organise time and activity flow); and (3) planning to serve a direct function during instruction (e.g., to organise students, to get an activity started, to aid memory, to provide a framework for instruction and evaluation).

Apart from the three reasons, there are several variables that influence the lesson planning, viz., locality of the school (urban/rural), number of students in the class, students' previous knowledge assumed by the teacher, resources available at the school, etc. (Gupta, 1985). Therefore, there can be as many lesson plans as there are teachers on a single topic (Joseph, 1982). One way to think of a lesson is by using the analogy of story that is highly organised; it has a beginning, middle and an end (Stigler & Stevenson, 1991). A good story engages the reader's interest in a series of interconnected events that are best understood in the context of the events that precede and follow it.

The published curriculum (textbook) is transformed in the planning process by additions, deletions and changes in sequence, and emphasise teacher's interpretations and misunderstandings (Clark & Peterson, 1990). Novice teachers seem to be reluctant in making changes in the process of planning. For example, a textbook may contain a concept (e.g. alkali metals are highly reactive) for which there is no fact given. In such cases, the teacher will have to create (add) two or more facts that will lead to the concept. However, both novice and experienced teachers are influenced to greater extent by the published curriculum material (textbook) in the lesson planning. The process of planning is restricted by the prescribed content in the textbook. Teacher-educators should encourage teacher-trainees to make necessary changes demanded by the method and context.

### **Steps in Lesson Planning**

Lesson planning is associated with the name of John F. Herbart (1776-1841). Herbart's theory of education is based on the assimilative function of mind. This assimilative power of mind to him is the apperception. Apperception implies the linking up of new experiences with the old (Purkait, 1995,

p.183). The principle of apperception suggests two important processes in learning, viz., absorption and reflection. Absorption stands for clearness and association, and reflection involves system and method. Thus, Herbart suggested four steps in the educative process. They are: (1) Clearness, (2) Association, (3) System and (4) Method. Later, Herbart's disciple, Ziller, divided the step clearness into two - preparation and presentation. The other three steps were renamed (Purkait, 1995, p. 184). Thus, the five steps of lesson planning are: (1) Preparation, (2) Presentation, (3) Association/Comparison, (4) Generalisation/Systematisation and (5) Application (Ozmon & Craver, 1986, p. 49). However, several authors have added recapitulation to make six Herbartian steps in developing a lesson plan (e.g., Maitra, 1991; Kohli, 1986; Joseph, 1982). The main problem in delineating the Herbartian steps is that none of the authors have indicated the source from which they have drawn this information. This is a problem in textbook writing and will not be elaborated here. However, the process of lesson planning centres on the six Herbartian steps: (1) Preparation or Introduction, (2) Presentation, (3) Association or Comparison, (4) Generalisation or Systematisation, (5) Application and (6) Recapitulation. Each step is detailed below.

### **1. Preparation/Introduction**

According to Herbart, the mind of the child must be prepared to receive the knowledge. It is just like preparing land before sowing the seed (Kohli, 1986, p. 91). There are several techniques to prepare students for learning. The technique or activity depends on the nature of the content area and the learning experiences. Maitra (1991) has listed four methods to prepare students for learning. They are: (1) Asking questions related to previous knowledge, (2) Narrating a story related to the topic, (3) Arousing curiosity by presenting a bit of unknown facts and (4) Doing an experiment leading into the lesson. Das (1985) suggested that the preparation stage should culminate in the announcement of the day's lesson. A few teacher-educators even insist on writing the title of the day's lesson on the chalkboard. There is no uniformity in the practice and may be unnecessary in some cases.

### **2. Presentation**

The content of the lesson is presented at this stage in a manner that will facilitate meaningful learning. The inductive method and a spirit of heurism coupled with thought provoking questions should pervade the classroom. This will help students engage in the learning process. A chalkboard summary would help students organise the new material in their mind. Each experience should have logic in the sequence and appropriate media and methods should be selected in the presentation.

### **3. Association/Comparison**

Learning becomes permanent when the new knowledge is associated with already known facts, concepts and experiences. Isolated bits of information are easily forgotten. Giving examples should make a number of possible connections and recalling ideas that students already know and that will have bearings on the new content. Comparisons initiate reflective thinking, which may result in inductive and analogical reasoning. Probing questions help in the process of association and comparison. These mental processes will lead into classification and generalisation.

#### **4. Generalisation/Systematisation**

Generalisation is the process of abstraction. This process of generalisation/systematisation helps the learner to develop an understanding about a group/class of objects/events. The generalisation arrived by inductive method can be used further (deductively) to infer the quality/property of a new object which belongs to the same group.

#### **5. Application**

The knowledge and understanding developed by a student is valuable only if she/he can use them in unfamiliar situations. The generalisation arrived in the previous stage should be validated by extending it to novel situations. The application stage gives the learner an idea about the worth of the knowledge and makes the learning more clear and meaningful.

#### **6. Recapitulation**

Recapitulation is the last step in the sequence of Herbartian steps. In recapitulation, the knowledge, understanding, application and skill involved in the content area are tested/reviewed using appropriate test items. This will help both the teacher and the student in evaluating the effectiveness of teaching and learning.

The Herbartian steps described above are basic to lesson planning. However, it need not be followed rigidly. For example, in some cases, the application stage may be more suitable after a review of what students have learned. Vaidya (1971) is very critical about the rigid steps in lesson planning. He states, “There is no Money Order form like proforma for writing up the lesson plan” (p. 168). He lists fourteen parts to a lesson plan with freedom to pick and choose, as there is no agreed format. However, a proforma evolved as a result of a State Level Workshop held in 1995 is given below.

There shall be ten steps in the development of a lesson plan. They are:

- (1) General Information
- (2) Content Analysis
- (3) Statements of Instructional Objectives
- (4) Pre-requisites/Previous Knowledge/Entry Behaviour
- (5) Teaching Aids
- (6) Preparation/Introduction
- (7) Presentation

- (8) Application
- (9) Review/Recapitulation and
- (10) Assignments. Each step is detailed below.

### **1. General Information**

General information includes details such as name of teacher, name of school, standard and division, strength, subject, unit, lesson unit, date and duration.

### **2. Content Analysis**

Content analysis is an important step in the planning of a lesson. However, only a few authors (e.g., Sukumaran Nair, 1982) have discussed the importance of content analysis. And the discussion on content analysis is surprisingly inadequate.

Most of the books available on science teaching have analyzed the content into four categories viz., terms, facts, concepts and principles. A detailed analysis of content area is very important in developing appropriate instructional sequence. Also, a type of activity/experience rests on the items in a content area.

A detailed content analysis of physical science (Physics and Chemistry) will reveal that the four categories (terms, facts, concepts and principles) are quite insufficient to analyze the content exhaustively. Therefore, the following twelve categories are created to do a better job of content analysis. The categories are: (1) Symbols, (2) Terms, (3) Facts, (4) Formulae, (5) Equation, (6) Concepts, (7) Definitions, (8) Conventions, (9) Hypotheses, (10) Laws, (11) Principles and (12) Processes. (See, Rajan, 1999, for details). It may be necessary to generate more categories and the list is not claimed to be exhaustive.

### **3. Statements of Instructional Objectives**

These are statements about the expected behavioural changes in the pupil. Each statement should include only one objective. The statements should be written in terms of the expected behavioural changes in the pupil. There should be two parts to each statement of instructional objective, one pertaining to the behavioural change and the other related to the content.

### **4. Pre-requisites/Previous Knowledge/Entry Behaviour**

Of the three terms, the term pre-requisite is more appropriate for it focuses on the required previous knowledge/entry behaviour without which the teacher cannot proceed. It is crucial in the development of a lesson to isolate the pre-requisite from where the class should begin. The pre-requisite is not necessarily something that the student has learned in the previous class(es). It can be an experience or an anecdote. The purpose of identifying the pre-requisite is to start the lesson from where the students are. It also helps in arousing the apperception mass thereby motivating the students to learn.

### **5. Teaching Aids**

The list of teaching aids should be written comprehensively. General statements such as 'usual classroom aids' should be avoided. It is desirable to prepare the list of teaching aids under three subdivisions viz., (a) Glassware/Instruments, (b) Chemicals/Consumables and (c) Improvised Apparatus/Charts/Models. The improvised items, models and charts should be described in one or two sentences to give an idea about the item.

## **6. Preparation/Introduction**

The preparation stage is detailed under the Herbartian steps in the previous pages and is not reproduced here.

## **7. Presentation**

The details are described under the Herbartian steps in the previous pages.

## **8. Application (wherever appropriate)**

The step is comparable to the Herbartian step and is described in the previous pages.

## **9. Review/Recapitulation**

The content presented is reviewed using appropriate items. The order of review can be altered if that will help the application stage.

## **10. Assignments**

Assignments are of two types: (1) Written Assignments and (2) Activity Assignments. Written assignments are intended basically to review the content area. It may contain items that require long answers and drawing of diagrams which cannot be given as seatwork because of time constraints. Activity assignments are designed to engage students in activities that will enable them to work with their hands, to develop manipulative and observational skill which will contribute to the development of scientific hobbies. The assignments should be so designed that it will cater to the needs of the below average, average and above average students. The materials and facilities available in an average home should be taken into account while giving activity assignments.

Several alternatives and parallel formats have been suggested by different authors for lesson planning. For example, Tyler (1949) suggested a linear model with four steps: (1) Specify the objectives, (2) Select learning activities, (3) Organise learning activities and (4) Specify evaluation procedures. Thurber & Collette (1964) added three items, viz., materials, references and assignments to what Tyler had suggested. Different format for the body of the lesson plan such as matter & method (Das, 1985), teaching point & teacher-pupil activities (Maitra, 1991) and matter, method and black board summary (Kohli, 1986) have been proposed. However, a four-column format with content, specification, learning experience and evaluation is popular in the state of Kerala. In spite of the different format and stages in lesson planning, the fact remains that the lesson plan is the real plan to be executed in a class period. The unit plan is the reference for developing a lesson plan with respect to time allotted and weightages to be given to different instructional objectives.

## **Lesson Types**

Lesson types can be construed from several perspectives. Dunkin (1987) analysed lesson formats from the point of view of classroom communication and interaction. Wittrock (1986) summarised the complexity of classroom events and the demand on the teacher in group-lessons. A few teacher educators think of lesson types as lessons that can be taught using different methods. A few others consider lesson types on the basis of the focus of teaching and learning activities, i.e., teacher-centred, student-centred and content-centred. The one that will be discussed here stems from the nature of the content area.

Teacher-trainees often find the development of lesson plan very difficult for they are not systematically exposed to the types of lessons that they will have to plan. A comprehensive and exhaustive description of the types of lesson plans is beyond the scope of what is attempted here. However, four types of content area will be dealt here. They are: (1) Descriptive type, (2) Inductive type, (3) Procedural type and (4) Logical relationship type. Each type is discussed below.

### **1. Descriptive Type**

In Descriptive Type, the content is mostly at the factual level. Analysis of content of this type reveals that there are so many facts in the content area with a minimum of concepts. For example, the high school chemistry deals with periodic classification of elements. There are several facts such as number of elements, atomic weight, physical state of elements at ordinary temperature, number of groups, number of periods, etc. The content demands verbal description of the arrangements of elements with the help of a chart. There is little scope for demonstration and most of the content items are facts to be memorised.

### **2. Inductive Type**

Inductive Type lessons are typical for they contain a set of facts, which lead to concepts and generalisations. Several content area fall under this category. For example, in chemical bonding the content forms hierarchical sequence, which is essentially inductive in nature. Another example will be levers - - 1st, 2nd and 3rd order and facts that can lead into the minor concepts and ultimately the major concepts.

### **3. Procedural Type**

In Procedural Type, a standard procedure is detailed in a particular sequence. The content usually contains a few facts to be arranged in a sequence which invariably involve a diagram. For example, in laboratory preparation of a gas such as Hydrogen sulphide, there are a few sequential steps to follow. This involves a chemical equation and a diagram with a procedure to be adopted in the process of laboratory preparation. The number of facts is limited and importance is in the peculiarity of arrangement of (Kipp's) apparatus and how it is used for the purpose. Working of an apparatus such as Rheostat can also be conceived as a procedural type.

### **4. Logical Relationship Type**



In Logical Relationship Type, the content is of higher level involving relationship among concepts. The content can be a principle or a law involving mathematical concepts such as proportionality, equality or variations. More often than not, these content areas are dealt at an abstract level in textbooks and teacher trainees find it difficult to select appropriate learning experience. On several occasions, teacher-trainees resort to deductive approach that cause too much of information processing load on the part of the learner. Much attention is to be paid in helping teacher-trainees in both selecting learning experiences and also in sequencing them. For example, in Boyle's Law, the relationship between Pressure and Volume at constant Temperature is established.

The four types mentioned above entails different levels of planning. That is, the pre-requisites, learning experiences, method of instructions and home assignments have basic differences in the four types. The role of pre-requisite in the Logical Relationship Type is much more crucial than the other types. The selection of learning experience is very simple in all types except the Logical Relationship Type. The method of instruction in the high schools of Kerala was mostly lecture-demonstration, but now activity methods are attempted. The home assignments can have variety of items in Inductive and Logical Relationship type but Descriptive and Procedural types involve mostly items to be recalled.

### **Conclusion**

Most of the content areas in high school physics and chemistry will fall in either of the above four categories or a simple combination of one or more categories. Teacher-educators will have to identify types of lesson plans in their areas of specialisation and must positively incorporate the types in the discussion of lesson plans.

A thorough content analysis and identification of types of lesson plans are essential for an effective pre-service training of the teachers. Although the instructional methods aim at the realisations of objectives, the content types set limitations on curriculum transaction. An awareness of the structure of the content in a way helps for a better preparation of the teacher-trainees in the task of lesson planning.

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