

CHAPTER 1

ORDERING (ARRANGING) LEARNING MATERIAL FOR THE LESSON SITUATION

1.1 INTRODUCTION

The significance of learning material for didactics is that it offers the opportunity and room for the learning person to become aware of himself: i.e., to become aware of himself in relation to *others*, to *thinking*, to *God*.¹ Closely connected with this is the question of forming and double unlocking. The idea of “double unlocking” implies that the surrounding world addresses the child as a meaningful coherence and that the child must answer this being addressed by throwing himself open to the content of reality. Thus, it is the task of the adult to select and orderly present meaningful cultural content. Only then can he expect the child *to proceed in an orderly way to design a unique life world*.² However, if the child is under the imperative that his constituting of reality must occur in an orderly way, a logical consequence is that the adult (teacher) also is under the imperative that there is an orderliness to the form as well as the content of his presentation.

The implication of this for teaching is clear. His providing help to the child in his being-on-the-way to adulthood must be planned such that his representation of reality shows a correspondence with the child’s spontaneous lived experiences. In this way this help also will correspond with the orderliness with which reality, as a categorical structure, discloses itself to a person. The teacher’s presenting of formative content must be directed to bringing about an optimal unlocking of reality for the child. However, content only can acquire maximum formative value when insights and findings about the different principles of ordering are taken into account.

The principles of ordering the learning material that today are known by everyone, and that sometimes are implemented

¹ Van der Stoep, F., *Tydskrif vir Geesteswetenskappe*, June 1965, p. 219.

² Van der Stoep, F., op. cit., p. 213.

intuitively, each has its point of departure in one or another acceptable teaching *form*. The essence of a teaching form that repeats itself in various lesson situations is delimited and described. Consequently, through the years a number of principles, as part of general didactic theory, have been adopted and their characteristics have been systematized and described for practice. Even at this early stage it must be indicated that the “popular” teaching form from each period in the history of teaching was inseparably related to one or another finding of the then current psychology of forming or becoming. Necessarily, this led to each period having a preference for a particular principle of ordering to try to attain acceptable aims. Because this form of teaching only has striven for a particular perspective, the interpretation it could give to the place and value to a certain form of ordering was, accordingly, one-sided and partial. Therefore, now it is meaningful to investigate some of the “groundings” for ordering in teaching before their significance as a point of departure of a particular principle of ordering can be evaluated.

1.2 EARLIER AND EXISTING PRINCIPLES OF ORDERING

1.2.1 Principles of ordering with a point of departure in a particular idea of forming

a) *Formal forming*

The central idea of formal forming is that some areas of knowledge are viewed as having greater formative value than others because of their logical, systematic and exact character. The inherent formative sense and quality of this content offer better possibilities for allowing the potentialities of the child to develop. Van Dyk says “According to this view the choice of formative content is limited to particular areas of knowledge and is delivered to the *demands of the child* with a view of their functional formative value”.³

Offering learning content according to this formative theory puts the emphasis on a matter of logical ordering in accordance with a fixed methodological way. The child is motivated by the sense of the logical structure of the content.

³ Van Dyk, C.J., *Vanaf Vorming (Bildung) tot Eksemplariese Onderrig en Leer: ‘n Didaktiese-Pedagogiese Strukturering*, p. 26.

From this it is clear that formal forming is one-sided because the emphasis mainly is on the child (subject).

b) *Material forming*

This theory of forming is directed to the objective side of the formative event with the primary aim of presenting great quantities of factual knowledge. The important characteristic is completeness and knowledge for the sake of knowledge. In planning a particular lesson situation there only is an accounting of the unique nature and structure of the subject matter [and not the child].

The reduction of the learning content amounts to a mere logical analysis of the separate characteristics investigated. In contrast to this, the contemporary didactic view of reducing the learning material is directed to the essence (being-structure) of the matter in its mutual and structural connections with other matters investigated (see Chapter 3). If the reduction only embraces a logical analysis, this implies that, in presenting facts, generally insight will be lacking and not even striven for. With this way of teaching, the form of ordering merely is the ordering of information. In ordering facts, the historical course often is taken as the point of departure. One thinks here of the familiar *chronological* form of ordering that generally is used in Biblical science and History.

c) *Categorical forming*

The contemporary view of forming, namely, categorical forming, has a clear influence on the way the learning material is ordered for formal teaching situations. The idea of categorical forming is directed to eliminating the dualism between objectivism (material forming) and subjectivism (formal forming). The contemporary view of forming implies a change of the total person that includes more than merely the adding together or unification of his parts. "The content by which a person discovers deeper significance and life values usually is a complex structure with endless mutual relationships that for the inexperienced learner and unincorporated

carrier of culture only can be made categorically penetrable and transparent as it is revealed in human reality.”⁴

The fundamental idea of categorical forming is the concept of “double unlocking”, as elaborated in detail by Klafki. Double unlocking means that presenting and ordering a slice of reality must be done such that it addresses the child as a meaningful coherence to which he must answer by throwing himself open to the content and venturing into it.

Here the important appeal (imperative) to the teacher (initiator) is that he must know and be able to interpret the structural possibilities, with their mutual relations, of the formative content with the aim of unlocking it for the child. Only after the adult has reduced the learning material to its essentials can he present it so that it appeals to and arouses the learning intention of the pupils. It is here that there is a search for sense and meaning and that the importance of correct ordering comes to the fore. For example, cultural content with local lore value (symbiotically ordered) will arouse the amazement, wonder and interest of the pupils because they already have knowledge of its meaning. The result is that the lived experienced sense helps to push the pupils through to a greater mobility. For this to happen, it is clear that the teacher (presenter) must take the initiative regarding ordering the learning (formative) content. The teacher’s presentation must do justice to the orderliness unique to a particular subject matter, but also the learning content must be ordered in such a way that reality is unlocked for the pupils as meaningful and coherent.

In light of the above a few important aspects and problems in connection with the teacher’s task regarding the formal teaching situation (lesson situation) briefly are considered.

Task of the teacher. An analysis of the task of a teacher in the school clearly shows an interaction between his professional (didactic-pedagogic) schooling and his subject preparation. The teacher is a leader and guider of the didactic event in the class and

⁴ Van Dyk, C.J., op. cit., p. 28.

he must be very sure what aims are striven for in each lesson situation.

He must put himself on the level where he finds the child to encounter him and be able to anticipate a possible course of the teaching event. As the leader, the teacher also is its initiator and planner. This includes the fact that he must order and present learning content (that must contribute to a scientific, systematic view of a particular piece of reality) such that the essence of the concept and its mutual relationship to a greater structure is more easily observed. A meaningful unlocking of reality cannot be presented in an unordered, diffuse and chaotic way. The sense and meaning of the didactic activity of ordering is that there always will be “something” (learning content) to order and to present. The content selected for a particular lesson already is familiar to the teacher. In his lesson analysis he moves on the same path of learning but in a reverse direction from that followed by the pupils in learning to know the subsequent subdivisions of the learning material. Therefore, it is possible for the teacher to anticipate, in his preparation and planning of his lesson situation, what principles of ordering will be the most fruitful for the pupils who are on a particular level of becoming.

An additional problem that arises here is the following: does the teacher have complete insight into the structure of the lesson situation? In this connection, further comments are made in Section 1.5. A final important task for the teacher is to give attention to the unique nature and structure of the subject that he wants to teach.

The unique nature and structure of the subject. In planning a sequence of lesson situations the didactician must try to keep in view the unique nature of the subject he is going to teach. The whole determines the meaning of the parts. A lesson cannot be constructed merely by announcing a great quantity of factual knowledge. What is important is that the teacher put the pupils in a position to be able to investigate the essence of the learning content. There cannot be a mere reliance on ordering a subject without specific didactic considerations.

Although the unique nature and structure of particular learning content always has to be kept in mind, it must be remembered that it is the *form* that introduces the content.⁵

It is the form that shows us the way. In the form the content acquires its flavor and, thus, in planning the lesson situations the teacher must plan the form such that it *can be recognized as a form of living*.⁶ If this is done the teaching event will be a meaningful, close to reality event for the learning person and the appeal will not only come from the content but from the meaningful relationship between form and content. There is a close relationship between particular ground forms and the unique nature and structure of the subject that must thoroughly be taken into account by the teacher in his planning of lesson situations. (In this regard, also see Chapter 3, section 3.6 and Chapter 4).

The planned form of ordering for a particular lesson situation only acquires its flavor in the interactions among the form (correct choice of a ground form), the unique nature and structure of the subject, and the implemented principle of ordering. The important problem that must be disclosed here is: How can the teacher plan so that such harmony is brought about?

Another important aspect to which the teacher must give attention in his planning of the ordering of the learning content is to ascertain the essence of the matter in its mutual relationship with other matters. This brings us to the important aspect of reducing the learning content.

Reducing the learning content. It is only the teacher who can reduce the learning content (formative content) because he already has mastered its structural possibilities and its mutual relationships and thus can represent it meaningfully. The teacher's aim is that the unlocking of the content will occur in such a way and will be crystallize in such a form that the pupils will be able to master it's essence and thereby they will change. Therefore, in his didactic analysis he must disclose the general quality (essence) of a

⁵ Van Dyk, C.J., "Eksemplariese onderwys: Enkele moontlikhede vir vernuwing en bevrugting van die didaktiese praktyk", in *S.A. Tydskrif vir die Pedagogiek*, p. 46.

⁶ Van Dyk, C.J., op. cit., p. 48.

particular matter as well as notice its relationships with other matters. The learning material, then, first must be so ordered that it is possible for the pupils to spontaneously acquire insight into the essential concepts as they show themselves to a person. Such a “synoptic unlocking” is not fragmentary or artificial. From the above it is clear that an additional question that must be answered is: What relationship is there in the lesson situation between reducing the learning content and ordering it?

In addition to the mentioned aspects of a particular principle of ordering the learning material it is general knowledge that the level of readiness of the child for whom the lesson is planned also must have relevance. Thus, it is necessary to take into consideration some matters about ordering from this point of view.

1.2.2 Principles of ordering emanating from particular findings of the psychology of becoming

The level of a child’s psychological becoming is a particular aspect of the choice and ordering of the learning content. The learning content of a particular curriculum must be selected in accordance with the demands and spontaneous experiential life of the child who is on a specific level of readiness. The syllabus already offers a primary ordering of the learning content from which there can be a working through to ordering it for particular lesson situations.

Some important considerations regarding the level of the child’s psychological becoming that can influence ordering the learning content are a strong pathic [affective] tendency, a concrete attunement and the spontaneous participation in the forms of play of the junior primary school child. For this reason the local lore value of the learning content from the child’s immediate surroundings and as actualized by implementing the symbiotic principle of ordering cannot be neglected. In contrast to this the child in the senior primary school is more directed to reality and in his learning activities he seeks truth. These pupils also are more ready to think rationally-logically. Principles of ordering, where a more logical way is followed, now can be fruitfully applied such as the linear principle of ordering. As a supplement, the concentric principle of ordering can be used to order learning content in

accordance with the pupils' psychological level of becoming or to keep pace with the fact that this level follows an ascending line.

Where reasonable, from the point of view of the child with respect to ordering the learning content, some other problems that are faced by the child are:

- i) To what extent does the ordering of the learning content contribute to directing the pupil to the essentials of the phenomenon or making the greater structure more easily understandable and surveyable?
- ii) Is the choice and ordering (of the learning content) such that it brings to the fore a problem for the pupil and thus stimulates his intention to learn and therefore focuses his learning activities on an insightful solution to the problem?
- iii) Is the ordering of such a nature that the child has the opportunity to have original experiences? On the basis of these new experiences can he anticipate reality?⁷
- iv) In terms of the ordering will the child be able to meaningfully place his experiencing in his life horizon and be able to integrate it with his foreknowledge?
- v) By means of the ordered learning content is the pupil primarily directed to the natural object or natural phenomenon or what is relevant and not to the subsequent disclosures of the natural scientific?
- vi) Is the level of difficulty of the learning content in accordance with the child's level of becoming (learning readiness) and does it expand in breadth and depth so that there is a continual appeal directed to the pupil as he moves to a higher level?

From the above it is clear that the learning content always is ordered in terms of particular principles of ordering that are grounded in one or another fundamental idea about the child or the subject matter. These principles are dealt with in detail in Chapter 3. Some problems, as experienced in the existing practice regarding implementing these principles of ordering in lesson situations, now are briefly indicated to get a better perspective on stating the problem.

1.3 PROBLEMS REGARDING ORDERING LEARNING MATERIAL ARISING FROM EXISTING PRACTICE

A few problems with respect to implementing principles of ordering for lesson situations in a particular subject now are explained separately:

- i) Are there certain principles of ordering that have particular relevance for a specific subject and, if so, in what way can they then be implemented? This implementation of principles of ordering in a particular subject always occurs in a particular lesson situation (see also section 2.6). Therefore, it will be necessary also to broach a few matters in connection with the lesson situation and its structure. The implementation of certain principles of ordering are dealt with specifically in Chapter 4.
- ii) A question that each teacher must ask himself before ordering and presenting a particular slice of reality is the following: In terms of what guiding principle or principles of ordering can I (the teacher) order this learning material so that it will have the greatest sense and meaning for the pupils?
- iii) Do certain principles of ordering have more relevance for a particular phase of a lesson? In this connection later there especially will be an account of the symbiotic principle of ordering during the introductory phase of a physics lesson.

1.4 SOME REMARKS ABOUT THE LESSON STRUCTURE

The teacher who has to order and present learning content must have a thorough insight into the nature and structure of a formal didactic situation (lesson situation). The insightful planning of a lesson situation by the teacher will contribute to his presentation fulfilling to a greater degree the high demands that are placed on him as a person. A few questions that arise from this are the following:

- What fundamental structures have relevance in the formal lesson situation?

- Where does the entire matter of ordering the learning material link up with the lesson structure and what mutual relationships are there among principles of ordering, methodological principles, didactic ground forms and didactic principles?

Since the lesson situation (formal didactic situation) continually must be realized in school, the teacher, who is the initiator of the situation, must understand it in its entirety. If he does not have insight into the essence of the lesson situation there never can be a working through to a meaningful ordering of learning material within such a situation.

The entire question of ordering learning content figures within the lesson structure and in the following chapter full attention is given to the structure of the lesson situation or formal didactic situation.

1.5 SUMMARY

From the above it is clear that the following problems with respect to ordering the learning content for lesson situations have shown themselves prominently:

- i) The teacher, whose task it is to meaningfully present learning content, is the central person regarding the ordering of the learning content. It is he who through the orderliness of his presentation will help the pupils in systematic ways to proceed to constitute a unique life world. To be able to realize this the teacher first must interpret the structural possibilities of the content he will present, i.e., among other things, he must thoroughly know the unique nature and structure of the subject. Further, as a didactician he also must have knowledge of the formative sense and value of the learning content he will present. However, in order to work through to a meaningful presentation of learning content the teacher must reduce the content to its essences and in his subsequent presentations bring about a harmony among the form, the ordered content and the method of presentation. Because ordering the learning content is realized in a lesson

situation, the teacher must have a thorough understanding of the structure of the situation that he plans and will establish.

- ii) Is the learning content ordered in accord with the pupil's level of psychological becoming and does it help him acquire insight into the essence of the matter and its mutual relationships? Do the pupils have the opportunity to acquire original experiences by means of the ordered learning content? Only when he can enter into the phenomenon (matter) can it become an actual problem for him that will direct his learning intention to an insightful mastery of it.
- iii) In what ways can the principles of ordering the learning content be implemented in a particular subject with the aim of presenting ordered learning content in lesson situations? In order to be able to give a clearer explication of the place and value of the principles of ordering the learning material in particular lesson situations, in the following chapters there is continual reference to the possibilities of implementing them in physics.