

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 a learning person to become aware of him/herself: i.e., to become aware of him/herself in relation to others, to things, 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 a child as a meaningful coherence, and that he/she must answer this being addressed by throwing him/herself open to the content of reality. Thus, it is the task of an adult to select and orderly present meaningful cultural content. Only then can he/she expect a child to proceed in an orderly way to design a unique lifeworld.⁽²⁾ However, if a child is under the imperative that his/her constituting reality must occur in an orderly way, a logical consequence is that an adult (teacher) is under the imperative that there is an orderliness to the form and content of his/her presentation.

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

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

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

The principles of ordering learning material, which today are well-known and which sometimes are implemented intuitively, each has its point of departure in an acceptable teaching form. The essence of a teaching form, which is repeatable in various lesson situations, is delimited and described. Consequently, through the years, several 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 is indicated that the “popular” teaching form from each period in the history of teaching is inseparably related to some finding of the then current psychology of forming or becoming. Necessarily, this led to each period showing a preference for a particular principle of ordering for attaining acceptable aims. Because a form of teaching is only striven for from a particular perspective, the resulting interpretation of the place and value of a certain form of ordering is, 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 a 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

According to this formative theory, in presenting learning content, the emphasis is on logical ordering in a fixed, methodological way.

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

A child is motivated by the sense of the logical structure of the content.

Hence, formal forming is one-sided because the emphasis is mainly on a 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 designing a lesson situation, there is an accounting only of the unique nature and structure of the subject matter [and not the child, as subjective].

The reduction of 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 is lacking and not even striven for. With this way of teaching, the form of ordering is merely the ordering of information. In ordering facts, the historical course is often taken as the point of departure. One thinks here of the familiar *chronological* form of ordering, which is generally used in biblical science and history.

c) *Categorical forming*

The contemporary view of forming, i.e., categorical forming, has a clear influence on the way 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). This contemporary view of forming implies a change of the total person, which includes more than merely adding together or unifying his/her parts. "The content by which a person discovers deeper significance and life values usually is a complex structure with endless mutual relationships which, for an inexperienced learner and unincorporated carrier of culture, can

only 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, as a meaningful coherence, it addresses a child to which he/she must answer by throwing him/herself open to the content, and venture into it.

Here, the important appeal (imperative) to a teacher (initiator) is that he/she must know, and be able to interpret the structural possibilities of the formative content, with their mutual relations, with the aim of unlocking it for a child. Only after an adult has reduced the learning material to its essentials can he/she present it in such a way that it appeals to and arouses the learning intention of the pupils. Here there is a search for sense and meaning, and the importance of correct ordering comes to the fore. For example, cultural content with local lore value (symbiotically ordered) arouses 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, a teacher (presenter) must take the initiative to order the learning (formative) content. A teacher’s presentation must do justice to the order 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.

From the above, a few important aspects and problems in a teacher’s task of the formal teaching situation (lesson situation) are considered.

Task of the teacher. An analysis of the task of a teacher in a school shows an interaction between his/her professional (didactic-pedagogical) schooling and his/her subject matter preparation. A teacher is a leader and guider of a didactic event in a class, and

⁴ Van Dyk, C.J., op. cit., p. 28.

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

He/she must put him/herself on the level on which he/she finds a child, to encounter him/her, and be able to anticipate a possible course of a teaching event. As a leader, a teacher also is its initiator and planner. This includes the fact that he/she must order and present learning content (which must contribute to a scientific, systematic view of a 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 present. The content selected for a lesson is already familiar to a teacher. In his/her lesson analysis, he/she moves on the same path of learning followed by the pupils, but in the reverse direction from them in learning to know the subsequent subdivisions of the learning material. Therefore, it is possible for a teacher to anticipate, in his/her preparing and planning his/her lesson situation, what principles of ordering will be most fruitful for the pupils who are on a particular level of becoming.

An additional problem which arises here is the following: does a 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/problem for a teacher is to attend to the unique nature and structure of the subject which he/she wants to teach.

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

Even though the unique nature and structure of learning content must always be kept in mind, it is its *form* which introduces the content.⁵

It is the form which shows us the way. In its form, the content acquires its flavor and, thus, in planning a lesson situation, a teacher must plan its form such that it *can be recognized as a form of living*.⁶ If this is done, a teaching event is a meaningful, near to reality event for a learner, and its appeal not only comes from the content, but from the meaningful relationship between form and content. There is a close relationship between the ground-forms and the unique nature and structure of a subject which must be carefully considered by a teacher in planning lesson situations. (In this regard, also see Chapter 3, section 3.6 and Chapter 4).

The planned form of ordering for a lesson situation acquires its flavor only 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 which must be disclosed here is: How can a teacher plan so that such harmony is brought about?

Another important aspect to which a teacher must attend in planning 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 a teacher who can reduce the learning content (formative content) because he/she already has mastered its structural possibilities and its mutual relationships and, thus, can represent it meaningfully. A teacher's aim is to unlock the content in such a way and be crystallized in such a form that the pupils can master its essence and, in doing so they change. Therefore, in his/her didactic analysis, he/she must disclose the

5 Van Dyk, C.J., "Eksempelariese 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.

general quality (essence) of a matter, as well as notice its relationships with other matters. The learning material, then, first must be ordered so that it is possible for the pupils to spontaneously acquire insight into the essential concepts as they appear to a person. Such a “synoptic unlocking” is not fragmentary or artificial. From the above, an additional question which 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 principle of ordering the learning material, it is general knowledge that the level of readiness of a child for whom a lesson is planned, also is relevant. Thus, it is necessary to consider some matters about ordering from this point of view.

1.2.2 Principles of ordering emanating from 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 curriculum must be selected in accordance with the demands and spontaneous experiential life of a child who is on a specific level of readiness. A syllabus offers a primary ordering of the learning content from which there can be a working through to ordering it for a lesson situation.

Some important considerations about the level of a child’s psychological becoming which can influence ordering the content are a strong pathic [affective] tendency, a concrete attunement, and a spontaneous participation in the forms of play of a junior primary school child. For this reason, the local lore value of the learning content from a child’s immediate surroundings, and as actualized by implementing the symbiotic principle of ordering, cannot be neglected. In contrast to this, a child in the senior primary school is more directed to reality and, in his/her learning activities, he/she 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 [elevation in] level follows an ascending line.

with respect to ordering the learning content from a child's point of view, some other problems faced by a child are:

- i) To what extent does the ordering contribute to directing the pupil to the essentials of the phenomenon or making the larger structure more easily understandable and surveyable?
- ii) Is the choice and ordering such that it brings to the fore a problem for the pupil and, thus, stimulates his/her intention to learn and, therefore, focuses his/her learning activities on an insightful solution to the problem?
- iii) Is the ordering of such a nature that a child has an opportunity to have original experiences? From these new experiences, can he/she anticipate reality?⁷
- iv) In terms of the ordering, will a child be able to meaningfully place his/her experiencing in his/her life horizon, and be able to integrate it with his/her foreknowledge?
- v) By means of the ordering, is the pupil primarily directed to the natural object or natural phenomenon, or what is relevant, and not to a subsequent disclosure of the natural scientific?
- vi) Is the level of difficulty of the learning content in accordance with a 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/she moves to a higher level?

From the above, the learning content is always ordered in terms of principles of ordering which are grounded in one or another fundamental idea about a child or a 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 indicated for a better perspective on stating the problem.

1.3 PROBLEMS REGARDING ORDERING LEARNING MATERIAL ARISING FROM EXISTING PRACTICE

- vii) A few problems with respect to implementing principles of ordering for lesson situations in a subject now are explained separately:
- viii)
- ix) Are there certain principles of ordering which have relevance for a specific subject and, if so, in what way can they then be implemented? Implementing principles of ordering in a subject always occurs in a specific lesson situation (also see section 2.6). Therefore, a few matters regarding a lesson situation and its structure are considered. Implementing certain principles of ordering are dealt with specifically in Chapter 4.
- x) A question which each teacher must ask him/herself before ordering and presenting a slice of reality is the following: In terms of what guiding principle, or principles of ordering can I (a teacher) order this learning material so that it has the greatest sense and meaning for the pupils?
- xi) Do certain principles of ordering have more relevance for one or another phase of a lesson? In this connection, later there is an account of the symbiotic principle of ordering during the introductory phase of a physics lesson.
- xii)
- xiii) 1.4 SOME REMARKS ABOUT THE LESSON STRUCTURE
- xiv)
- xv) A teacher who must order and present learning content must have thorough insight into the nature and structure of a formal didactic situation (lesson situation). The insightful planning of a lesson situation by a teacher contributes to his/her presentation fulfilling, to a greater degree, the high demands placed on him/her as a person. A few questions arising from this are the following:
- xvi)
- xvii) What fundamental structures have relevance in a formal lesson situation?
- xviii) Where does the entire matter of ordering 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?
- xix)

- xx) Since a lesson situation (formal didactic situation) must be continually realized in school, a teacher, as the initiator of the situation, must understand it in its entirety. If he/she does not have insight into the essence of a lesson situation, there can never be a working through to a meaningful ordering of learning material within such a situation.
- xxi)
- xxii) The entire question of ordering learning content figures within a lesson structure, and in the following chapter, full attention is given to the structure of a lesson situation or formal didactic situation.
- xxiii)
- xxiv) 1.5 SUMMARY
- xxv)
- xxvi) From the above, the following problems of ordering the learning content for lesson situations have surfaced prominently:
- xxvii)
- i) A teacher, whose task it is to meaningfully present learning content, is the central person for ordering the learning content. It is he/she who, through the order of his/her presentation, systematically helps the pupils constitute a unique lifeworld. To realize this, a teacher must first interpret the structural possibilities of the content he/she is to present, i.e., he/she must thoroughly know the unique nature and structure of the subject. Further, as a didactician, he/she must have knowledge of the formative sense and value of the learning content he/she presents. However, to work through to a meaningful presentation, a teacher must reduce the content to its essences and, in his/her subsequent presentations, bring about a harmony among the form, the ordered content, and the method of presentation. Because ordering content is realized in a lesson situation, a teacher must have a thorough understanding of the structure of the situation he/she plans and establishes.
 - ii) Is the learning content ordered in accord with a pupil's level of psychological becoming, and does it help him/her acquire insight into the essence of the matter and its mutual relationships? Do the pupils have an opportunity to acquire original experiences by means of the ordered learning content? Only when he/she can encounter the phenomenon (matter) can it become an actual problem for him/her, which will direct his/her learning intention to an insightful mastery of it.
 - iii) In what ways can the principles of ordering be implemented in a subject, with the aim of presenting ordered learning content in lesson situations? To be able to give a clearer explication of the place and value of the principles of ordering the learning material in lesson situations, in the following chapters, there is frequent reference to the possibilities of implementing them in physics.

