CHAPTER 5
PREPARING A LESSON

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Introduction

One is often inclined to forget that, in many occupation the real basis of the work is in the preparation. A minister's actions and guidance from the pulpit represent days of hard work in his/her study. Defending an accused in court by a lawyer is only the tip of the iceberg of his/her work; the days and weeks of preparation are not conspicuous but are essential for his/her practice. In this sense, a teacher is a prime example of one who prepares for professional work. All teachers must be prepared. Stated more broadly, anyone who in any way is involved in teaching must be prepared. This includes preprimary teachers, teachers in the senior secondary school and instructors at the university.

A teacher's preparation essentially is planning a lesson to be implemented in the future. A teacher must plan each aspect of the lesson he/she is going to present because it should not proceed haphazardly and because, as a professional educator, he/she must be able to account for what he/she brings about in the classroom. The fact that a teacher plans a specific lesson beforehand makes it difficult to predict the outcome of his/her didactic reflections, simply because persons, and the school child, are not completely predictable. A teacher can never say with certainty that the children in his/her class are going to learn the new material in specific ways, or that his/her plan will achieve the desired learning effect. However, the unpredictability of the classroom situation is no excuse for not planning his/her lessons. On the contrary, in his/her planning, a teacher must thoroughly consider the unpredictable because he/she must be able to professionally account for his/her classroom practice.

In the previous chapters, it is repeatedly mentioned that the teacher must continually strive for **harmony between form and content** in his/her classroom practice. The art of preparing lessons, thus, is nothing less than the teacher's academically and professionally

polished initiative to create a **ground plan** (lesson plan) for creating a harmony between form and content. This lesson plan includes elements which reflect the demands of the subject content and the child's situation. Also, unforeseen elements must be meaningfully built into the general lesson plan. The teacher's lesson plan, thus, must be flexible, but it must reflect didactic pedagogic, and subject didactic essentials.

A teacher's lesson plan is observable in the lesson write-up and, in the classroom implementation of the lesson which he/she planned beforehand. In this regard, a teacher's lesson preparation is his/her professional responsibility. This means that he/she must be didactic-pedagogically accountable regarding the **form** of the lesson he/she has planned, and he/she must be able to account for the subject matter and subject-didactic meaning of the **content** he/she is going to present or unlock for the child. In addition, his/her preparation represents the justification of his/her choice(s) to synthesize, in didactically harmonious ways, the form and content of the lesson.

Although the expression "practice makes perfect" is applicable to the teacher's classroom practice, this does not mean that the student teacher is abandoned to his/her own inadequate teaching experiences. Indeed, an "experienced" teacher who does not continually keep him/herself abreast of the developments in teaching theory and the subject matter he/she teaches stagnates in the experience of one year. Such a teacher with ten years of experience, really has repeated that one year ten times.

The fact is, a student teacher does not enter the classroom for the first time unequipped. On the one hand, his/her subject matter background is one beacon for his/her ability to create a meaningful classroom practice. After all, the student teacher has the benefit of a subject matter background which, at least, is up to date with respect to the content. Regarding the study of his/her teaching subject, the student teacher has mastery of the subject area, in that he/she understands the essential order (sequence) at the basis for constructing the subject and, thus, he/she knows what is superfluous and what is circumstantial.

The student teacher's subject mastery offers him/her the possibility of penetrating to the essentials of a theme (which is going to form the core of his/her presentation or unlocking) and, accordingly, to

structure the course of the lesson he/she is going to offer. The implication is that the student teacher knows what the child needs to know of the theme so that his/her evaluation of his/her own unlocking, at least, can satisfy the demands of the subject.

However, subject knowledge alone is not sufficient to guarantee the meaningfulness of the teacher's unlocking (teaching) the content for the child. Today, it still is a deep-rooted misunderstanding that subject knowledge ensures teaching success, especially at the university level, as well as for other tertiary teaching. Everyone who has had to find his/her way through the school and university is acquainted with the brilliant subject expert who could not clearly explain his/her subject. Each also has endured the meaninglessness of his/her instruction. Subject knowledge in no respect implies the ability to meaningfully unlock the essentials of the subject for the child.

The teacher's didactic-pedagogic and professional training provide him/her with the other beacon for being able to scientifically account for his/her practice. In his/her scientific study of the teaching event (didactics) for the child (pedagogics), he/she is provided with the basis for pedagogically-didactically interpreting his/her subject knowledge. The teacher does not teach the subject to the child solely for the sake of the subject itself. He/she teaches the subject (as an aspect of the total surrounding reality) so the child can acquire a better understanding and manipulation of reality to eventually be able to relate to it in more responsible (more adult) ways. Thus, the teacher's preparation involves the scientifically accountable pedagogic-didactic interpretation of his/her subject knowledge to create a harmony between the form and content and, thus, ensure the meaningfulness of the lesson he/she is going to

present. The lesson write-up, thus, merely makes explicit the teacher's reflections on how to bring about a harmony between form and content for specific children in specific teaching situations.

In preparing a lesson, what factors must the teacher consider which ultimately must be evident in the lesson write-up?

In the first chapter, it is explained how didactic theory must culminate in a specific lesson structure. This culmination is a logical necessity and, if this doesn't happen, this means that the theory is empty speculation, and the lesson cannot be structured on it. The analysis and description of the essentials of the lesson structure appearing in the previous chapters are directed to clarifying the relationship between theory and practice. In these chapters, the fundamental things which a teacher must consider in creating a meaningful lesson are discussed. From these chapters, it also is clear that the teacher's preparation and planning are at the center of his/her professional activity. A teacher's preparation and planning are, in the narrow sense of the word, the "ground plan" of his/her didactic activities. The deduction made from this is that everything the teacher's professional activities affect or can influence in the classroom must be considered in his/her preparation and must be clear in his/her lesson write-up.

The problem the teacher must solve in his/her lesson preparation, is to justify his/her **interpretation** of both his/her academic subject knowledge and his/her pedagogic-didactic knowledge, **in terms of the requirements** (i.e., the didactic criteria) **which the practice of teaching** directs to him/her. This means that, at the end of his/her lesson he should be able to declare, in a straightforward way, that his/her lesson has fulfilled all the didactic requirements because the child for whom the essentials of the content are unlocked has properly appropriated them. The question the teacher must be able to answer in his/her preparation is: How can I meaningfully interpret my theoretical (academic) subject knowledge in terms of:

(i) the life of the child in his/her present existence and, at the same
time, as meaningful for his/her life as a future adult? and,
(ii) the social, cultural, scientific, technological, and other
requirements of the specific didactic situation to ensure that the child is going to be meaningfully involved in the teaching situation?

Essentially, the problem of preparation is a problem of **meaningful interpretation**. Meaningful interpretation necessarily concerns and includes a variety of factors relevant to the practical teaching situation. Here one thinks of the child's

foreknowledge, in terms of which the teacher should be able to answer the following question. How can I introduce this new learning material in such a way that, considering the child's knowledge and experience, he/she can lived experience the theme as meaningfully related to his/her possessed knowledge, but, at the same time, lived experience that his/her knowledge is deficient, which then can serve as a motivation for him/her to want to learn?

Other factors which can influence the course of a lesson are the time available, the composition of the class (homogeneous or heterogeneous), the content, which is to follow the presentation of this theme, etc.

The **result** of the teacher's interpretation of the didactic theory in a specific lesson situation, is a specific **lesson structure** in which he/she gives evidence of the mutual and reciprocal relationship between theory and practice, and the way in which both are relevant to the situation he/she is planning. At this stage, it is necessary to indicate what the different facets of the lesson situation are which he/she must interpret to be able to accountably prepare a lesson structure. The lesson structure which he/she creates is a result of his/her interpretation of:

1. **Pedagogic-didactic categories and criteria.** This means that, with his/her knowledge of what the didactic situation **is** (categories) and how he/she

can **evaluate** (criteria) if the structure he/she has created reflects the essentials of the didactic, the teacher can justify the specific lesson situation he/she creates.

2. The child. This involves an insight into the level of the child's possessed knowledge. For example: What does the child know about this theme? What has he/she already experienced about this matter? Is his/her coordination of such a nature that he/she can carry out this activity? With respect to the child, it is logical that the teacher cannot unlock specific learning material which he/she cannot understand.

3. The nature and structure of the subject itself, from which the teacher is going to unlock (present) a theme or topic for the child. Certain subjects lend themselves to an inductive methodological principle; again, others lend themselves to a deductive approach or a combination of the two.

4. The method(s) the teacher is going to choose to unlock the essentials of the theme for the child. By the nature of the matter, the choice of teaching method must be relevant to the didactic ground-forms, the developmental level of the child and the nature of the learning material. The method used is meaningful to the degree that it is integrated with the other demands of the course of teaching. For this reason, no method exists as "the" method, but any method can be used, to the degree that a teacher can justify his/her choice of it.

A teacher's originality and creativity are not diminished by the pedagogic-didactic requirements. The contrary is true: for example, the didactic categories offer the teacher the mandate and the possibilities within which his/her originality and creativity can flourish. Because children essentially differ, originality and creativity are imperative for a teacher. Thus, he must continually search for ways in which he/she can recognize the individual differences of the children in his/her class and, accordingly, modify his/her unlocking of reality in such ways that each child can be

meaningfully involved in the lesson. To succeed at this, he/she must continually reflect, and reflect again, which directs an appeal to his/her originality and creativity.

For his/her unlocking to be meaningful to the child, a teacher must **know** him/her. He/she must know him/her not only as a person, but also with respect to his/her level of attainment, and his/her readiness to understand new knowledge, and integrate it into his/her horizon of knowledge. The implication is that the teacher's pedagogic-didactic knowledge of the child must be integrated with the requirements demanded by the learning material.

The teacher also draws on his/her pedagogic-didactic insights to decide into what didactic ground-form(s) he/she is going to cast his/her lesson, what methodological principles and methods of presentation he/she is going to choose, according to what principle(s) he/she is going to order and systematize the learning material, and which forms of actualizing the didactic principles he/she is going to select--**all against the background of the child's situatedness and ability to understand the new learning material.** At the risk of repetition, it is important to again indicate that the teacher unlocks reality for the **child** and. specifically, **on behalf of the child's eventual adulthood.** The choices and decisions the teacher makes have a fundamental place in his/her preparation and planning and must be evident in his/her lesson write-up.

The various decisions which a teacher must make are not only dependent on the child or are not only made to occupy him/her, even though the teacher does unlock reality for him/her. The specific nature and character, as well as the **complexity of the learning material** also must be considered in his/her choices and decisions. If the child is the sole consideration in the teacher's decisions, the harmony between form and content is disturbed, and such a teaching practice is pedo-centric (child-centered). If the content (subject content, learning material) is given the greatest weight, then the harmony between form and content also is disturbed, and such a teaching practice is subject-centered.

The teacher, especially in the secondary school, is confronted with the task of acquainting the child for the first time with the systematized subject sciences which are presented through the school subjects. For this reason, the teacher must understand the essentials of the subject itself to make accountable decisions.

Therefore, in his/her preparation and planning, he/she must consider both the child and the structure of the learning material to choose a methodological principle (inductive, deductive or a combination of the two), and corresponding specific methods (or combination of methods in their essential, logical relation to the didactic ground-forms) in terms of which the theme is going to be unlocked for the child.

The above task means for the practical teaching situation which the teacher is going to create, he/she must be able to justify the **aim** which he/she will and must achieve with the lesson. He/she also must be able to account for the ways in which he/she plans the **course** of the lesson, i.e., how he/she is going to introduce the new learning material, how it is going to be unlocked and how he/she is going to determine whether the children have attained the mastery of the learning material which he/she previously stated in his/her lesson aim. He/she must be able to justify the **didactic modalities** he/she is going to use, i.e., how the didactic principles, the child's modes of learning, and the implementation and use of teaching and learning aids are going to appear in his/her lesson.

At this stage, the reader can ask the meaningful question: How are all these things related to each other, and how should they be put together in a scheme or framework which is observable in a lesson write-up? To properly answer this question, it is necessary to briefly and systematically summarize the essential aspects of the lesson structure so that the scheme or framework for the lesson write-up can reflect them.

Aspects of the lesson structure

1. In each lesson, there is an aim. Stating the aim is designated only in the light of the essentials of the learning material, and the insights the child must gain. For these reasons, there is the **teaching aim,** as the overarching element of the **lesson aim,** the **learning aim** and **stating the problem.**

The teacher must formulate the **lesson aim** he/she wants to attain in exposing the learning material. The theme, which he/she has now elevated to a lesson aim, is put in the work scheme. The themes, which appear in the work scheme according to weeks, months and, in some cases, even according to days, proclaim for the teacher the theme he/she is to cover in a specified time. In their turn, these

themes come from the syllabus. The insights, skills, knowledge etc. which appear in the work scheme, must be elaborated, and restructured by the teacher into a lesson aim. The theme in the work scheme is merely an announcement. The teacher must elaborate this announcement into a lesson aim following didactic-pedagogic considerations and subject matter criteria. The lesson aim is what the teacher aims for with the lesson, what he/she wants the children to achieve. Such an aim is not necessarily motivating enough for the child to want to learn. For this reason, the lesson aim needs to be presented in such a way (by means of stating the problem) that the child experiences its meaningfulness and, accordingly, will want to learn.

The **learning aim** springs from what the teacher expects the child to achieve, and what the child will achieve because he/she experiences the theme as meaningful. The teacher cannot properly formulate the lesson and the learning aims if he/she has not first **reduced the learning material to its essentials.** For the teacher, the work scheme is the first reduction because already, in the choice of themes and their structuring, there is a reduction in the sense that, by this, the essentials of the subject are announced. Against the background of the teacher's subject knowledge, he/she further reduces the theme to its essentials; he/she strips the content of everything which is superfluous and unnecessary until only the elementals or essentials remain. The essentials of the theme are what the teacher will require the child to understand.

In his/her reduction of the content to its essentials, the teacher takes note of the child's foreknowledge of the theme, his/her readiness to appropriately master the new content, possible bottlenecks which can arise in his/her exposition of the content, and in what ways his/her insights into the matter can be restructured to serve as a framework for new insight into the learning material. It is evident that the lesson aim, the learning aim and the reduction of the content to its essentials are very closely related to each other. This means that the teacher must interpret the learning material in a way which is meaningful to the child's existence. To interpret the learning material didactically and existentially, he/she first must reduce the learning material to its essentials, because only then can he/she appreciate and formulate the aim which he/she foreshadows with the specific lesson, as well as the learning aim, he/she expects the child to attain as meaningful for him/her.

Because the child's **learning intention,** and, thus, his/her motivation to achieve is awakened and directed by **problems**, the teacher must guide him/her in such a way that he/she eventually **lived experiences the problem as his/her own.** A child cannot accept such a problem as his/her own if the theme merely is announced--an announcement is not stating a problem. Thus, the teacher is compelled in his/her lesson introduction to search for ways to allow the child to lived experience his/her existing insights, knowledge, skills, etc. as deficient. Should he/she lived experience such a deficiency (his knowledge of the theme is inadequate for him/her to solve the problem), this serves as a motive to solve the problem, provided the problem is meaningful for him/her. What the child wants to know to solve the problem, in fact, is the learning aim.

In this way, stating the lesson and learning aims flow naturally into formulating and solving the problem. The preconditions for eventually arriving at a meaningful statement of the problem lie in reducing the learning material to its essentials, and the teacher's knowledge of the child. These aspects of the teacher's preparation must be evident in the lesson write-up. Examples of how this should be shown are presented later in the chapter.

2. The teacher must structure his/her lesson in such a way that it is didactically refined and pedagogically meaningful. Although the importance of the didactic ground-forms, the methodological principles, the principles according to which the learning material is ordered and the didactic modalities are discussed elsewhere at length and are briefly indicated in this chapter, nevertheless, it is important to indicate once again that the teacher must understand the individual character of each of these, separately, as well as the reciprocal relationship and mutual interdependence among them. Therefore, a teacher must bring these factors into relationship with the demands posed to him/her by the learning materia, and the child, to be able to **account for the specific type of lesson** he/she creates. Although he/she must make room for and actualize the didactic principles and criteria in his/her lesson structure, this does not mean that he/she must surrender his/her practice to so-called didactic "recipes"—his/her lesson structure is essentially original because the children for whom he/she unlocks reality always are unique.

The teacher's practical originality is equivalent to his/her ability to appraise the child in the specific didactic situation, and then, in

accordance with his/her appraisal, to create a didactic structure (grounded in didactic categories and corroborated by didactic criteria) by which he/she can guarantee that his/her exposition improves the child's relationship to reality. Although there is no rigid lesson typology, still there are correspondences among different lessons which bestow a character to them. In this sense, there are types of lessons, e.g., a demonstration lesson can be distinguished from an experimentation lesson, from an appreciation lesson, etc. The type of lesson the teacher states beforehand must be thought through thoroughly in his/her planning and be discernible in the lesson write-up.

3. The teacher strives to attain the learning aim during the lesson. This sounds obvious but, nevertheless, it is fundamental, especially since he/she must understand the factors underlying this attainment.

The teacher must **stimulate** the child's **foreknowledge of the theme.** In this sense, foreknowledge not only means merely cognitive (intellectual) mastery, it also implies the child's relevant experiences of the theme. When the teacher stimulates the child's foreknowledge, he/she is involved with helping the child consciously re-live his/her experiences and with placing his/her foreknowledge in a new framework (the framework of the theme the teacher is going to unlock for him/her). In this way, the teacher supports him/her to **lived experience the new theme as meaningful.** During the lesson, he/she continually is busy placing the child's foreknowledge in meaningful relationships, but in ways which lead him/her to **experience the problem inherent to the new theme.** The teacher can accomplish this because he/she supports and guides him/her to **seek answers or solutions** to the problem (or question) with which he/she confronts the child. In this way, the teacher **stimulates** the child's foreknowledge in relation to the new knowledge which he/she lived experiences as a problem. The teacher literally mobilizes and directs the child's previous insights, skills and knowledge so that he/she can solve the problem (answer the question).

The child's foreknowledge placed-in-relation to the new theme, is a precondition and, thus, is necessary if the teacher is to reach a **didactically "fruitful moment"** in his/her exposition. In its turn, the didactically fruitful moment is a condition for the further unlocking of the new theme for the child. The fruitful moment underlies the

possibility of authentic learning occurring because, without it, the child is unable eventually to properly form concepts, understandings, etc. This means that, through the fruitful moment, with the help and guidance of the teacher, the child can **generalize and abstract** the unlocked essentials of the theme.

A teacher cannot leave a child to his/her own devices to acquire insights and concepts. If he/she does, the chances are good that the child will fail to understand them. The fact that a child shows insight and understanding of a theme does not yet mean that he/she is **versatile** with that theme—the requirement is that he/she must pin down such insights and concepts through practice. However, before the teacher can assure him/herself that the child has the essential insights of the theme at his/her disposal, he/she must actualize the lesson content by **controlling the essentials** of the theme's structure. Such control of the essentials can be accomplished by arranging the essentials in a logical scheme (schematizing), by supporting the child to use his/her naturally acquired concepts and insights, which include two forms of practicing (namely, practicing **to** insights, which is especially important in acquiring activity structures and practicing **of** insights), and, finally, by **evaluating** his/her insights into the new knowledge structure.

From the nature of the matter, all these elements constitute an important aspect of the teacher's preparation and, therefore, should be discernible in his/her lesson write-up.

4. The teacher plans a dynamic course in his/her preparation because, if there is one thing which can be said about it, a lesson situation especially is shown in its dynamic aspect. It is for this reason that, in his/her planning, the teacher must think about how he/she is going to let the dynamic of the lesson take its course and how, by virtue of the pedagogic-didactic requirements, he/she is going to direct the lesson. This means that he/she must actualize the different **principles of actualization** (activity, differentiation, individualization, and tempo variation) during the lesson.

Further, this means that, in his/her preparation, he/she must be able to justify the principles of actualization to be used **in each phase of the lesson** in to allow each of the phases to take their course. Therefore, he/she must be able to account for the relevant principles of actualization (or their combinations) during the lesson

phases of actualizing foreknowledge, stating the problem, exposing the new content, actualizing the new content, functionalizing the content and evaluating insights. The relationships among the principles of actualization and the phases of the lesson remain dependent on authentic learning effects, in the sense that the teacher must continually search for the most effective principles of actualization for a specific phase of the lesson to guarantee the best learning result. For example, here one thinks of the necessity of implementing differentiation, as a principle of actualization, in an ordinary classroom situation because an individual child will not necessarily open him/herself to the teacher's presentation in precisely the same way as will a classmate.

One also thinks of the requirement to differentiate in a heterogeneous class (e.g., differentiation of assignments) to reach each child. Tempo variation is necessary in each lesson situation--while stimulating foreknowledge, the tempo is faster than during the exposition of the new learning material. Activity is obvious in each lesson situation; if the child is not actively involved in the lesson, he/she simply is not "present" to it.

These matters do not "just happen". They must be thoroughly planned for and be worked into the lesson write-up.

5. The ways in which a child goes out to reality are not uniform, e.g., he/she can perceive it or think about it. The ways in which he/she enters reality (the ways in which he/she exists, enters reality out of him/herself) also are not unitary. A child does not purely perceive; during his/her perceiving he/she also lived experiences reality emotionally. For this reason, we cannot separate his/her ways of going out to reality [i.e., intentionalities]; at most we can distinguish them.

By this time, the reader knows that learning is one of the most conspicuous characteristics of a child's involvement with reality. It also is the case that his/her modes (ways) of existence correspond with his/her ways of learning. Preponderantly, he/she mobilizes ways of learning (e.g., thinking, perceiving) to enter reality, depending on the appeal which reality directs to him/her. Didactically, this means that learning material will help determine which ways a child best can gain access to that reality. Correspondingly, in his/her planning, it is the teacher's responsibility to also consider the specific **modes of learning** which

are going to be stimulated and directed during the different phases of the lesson. This means that, in his/her preparation, a teacher must anticipate a specific mode of learning (or combination) in each of the phases of the lesson stated above.

Thus, a teacher must ask him/herself the question: With respect to the learning material, which modes of learning, during the following phases of the lesson, are most likely to result in authentic learning effects--during actualizing or stimulating the child's foreknowledge; during the joint reduction of the content to essentials in the lesson exposition; during the unlocking of the lesson content, and the integration of the foreknowledge with the new structure of knowledge to promote restructuring? etc.

The synchronization of the most effective modes of learning with the phases of the lesson, is of importance for the teacher, because the aim of the lesson is actualized in the child's learning. Therefore, this element of the lesson structure requires careful preparation and planning and must be clearly inserted into the lesson write-up.

6. In his/her involvement with the child in the class, therefore, the teacher's concern is to bring reality to the child. From the nature of the matter, reality in its fullness cannot merely be carried into the classroom. In the face of this problem, the teacher presents reality by means of teaching and learning aids. Teaching aids are materials representative or symbolic of reality which he/she uses to make reality accessible to the child, while learning aids are material in terms of which the child him/herself can attain insight into reality to the degree that the material makes reality present. Consequently, the teacher handles and uses teaching aids, and the child learning aids. Under teaching aids, we can mention projectors of various kinds, wall maps, models, the chalkboard, illustrations, etc., and under learning aids are mentioned the child's textbook, models, examples, microscopes, graphs, etc.

The value of teaching and learning aids is not in the aids themselves; the teacher must elevate the object (e.g., a model, a map) to a teaching or learning aid. This means he/she must decide when and how he/she is going to insert aids into the course of the lesson, and for what specific aim he/she is going to use and allow the aid(s) to be used. In his/her preparation, he/she must give this matter undivided attention. In his/her preparation, he/she also must be able to account for his/her coordinating and synchronizing

the teaching and learning aids with the child's different modes of learning, the level of his/her attainments and his/her ability to integrate, as well as with the specific nature of the learning material which is going to be unlocked. The teacher's use of teaching and learning aids during the different phases of the lesson, where they can be applied, also must be accountable. The uses and reasons for the teaching and learning aids must be discernible in the lesson write-up.

7. All the children in the class are not necessarily going to achieve the lesson and learning aims as they should. Correspondingly, during his/her preparation, the teacher must be alert to possible **bottlenecks and problem areas** which can arise in his/her exposition. The child's insight into the learning material he/she has unlocked (learning result), and his/her **control of the child's insight** into the essentials of the learning material, indicate to him/her where the child has stagnated. It is especially when he/she interprets the learning material didactically-pedagogically that he/she anticipates possible bottlenecks, and his/her exposition is modified such that these bottlenecks are eliminated or avoided. This act of modification literally is always present while harmonizing the form and content. In the class situation, the modification of the exposition occurs in accordance with the immediate learning effect. The teacher repeats, allows practice again, allows doing again, returns to previous work, etc. if he/she does not see the quality he/she demands in the immediate learning effect. All of this requires time and, thus, the teacher also must consider this in his/her preparation. With stagnating. and even derailing bottlenecks, he/she must provide orthodidactic (remedial) help for which he/she should also make provision in his/her preparation.

Preparation essentially involves anticipating a didactic situation, where an authentic encounter can occur between the child and the learning material, i.e., where authentic learning is the dividend of the teacher's unlocking of reality. The child's encounter with the learning material must culminate in his/her improved relationship to reality, which is discernible in his/her improved involvement with the learning material. The child also must transcend (surpass) the immediacy of the learning effect observable in his/her admirable behavior and life of values. The events in the lesson situation are not mechanistic or automatic--the teacher must thoroughly prepare for them. However, his/her preparation must

acquire a more concrete form than merely reflecting and, therefore, he/she must write on paper the elements of his/her didactic reflections which must be discernible in the lesson write-up.

The lesson scheme

The examples of lesson write-ups presented below are meant for both the student teacher and the practicing teacher. For the student teacher, the examples are an introduction to the essentials of the practice of teaching, and for the teacher, they can allow him/her to once again think about the foundations of his/her practice to awaken a critical attitude regarding it. Because each lesson essentially is a model lesson--this holds both for the student teacher and for the practicing teacher (after all, an operation performed by a doctor is a model operation!)--there is no distinction made between the examples of the write-up of a model lesson and of a so-called "everyday bread-and-butter-lesson". The same criteria hold for the student teacher's write-up of a lesson for critique as for the practicing teacher's lesson write-up because both must provide clear evidence that a harmony between the content (subject knowledge) and the form of the lesson can be realized against the background of pedagogic-didactic knowledge.

The discussion which follows should not in any sense be taken as a **fixed pattern or recipe.** Its aim is to serve only as a **guideline,** because from each student teacher and each teacher, it is expected that they will display their own **originality and initiative** in their unique teaching situation. Herein lies the possibility that the student's and the teacher's classroom practice will be dynamic and enthusiastic, and that the lesson will not be based on a recipe which bestows on it a second-hand and stiff character.

The guideline also is aimed at ensuring that the lesson will not have a **haphazard character,** because the lesson scheme requires that the student teacher (and teacher) be **accountable** for each **phase of the course of the lesson.** Also, the lesson scheme is arranged in such a way that the teacher continually must keep in mind the **unique nature of the subject** and the **pupils' readiness** to bring about a meaningful harmony between the form and the content of the lesson.

The teacher's choice and implementation of the didactic principles, modes of learning, teaching aids, didactic ground-forms, methods,

etc. must make a unique **style of teaching** evident because, after all, it is in the choices and their implementation which the teacher's individuality is expressed. It is for this reason that **the observation of a practicing teacher by a student teacher can only have limited value**--slavishly following the example ultimately can only obstruct the student teacher's latent style of teaching.

The scheme for the lesson write-up presented below is mainly a systematized and schematized rendering of the previous expositions of the lesson structure. The scheme is designed in such a way that the teacher's justifications for his/her choices are synoptically and concisely perceptible. In the discussion of the scheme for the lesson write-up, there is mention of what belongs under each heading and how the content under each ought to be stated.

A SCHEME FOR A LESSON WRITE-UP (LESSON PLAN)

Localizing information

Grade level: It is necessary to precisely know the level of the children who are going to be taught. This information will greatly influence the teacher's didactic-pedagogic reflections and planning. Here, the grade level is simply indicated; e.g., grade 4, grade 6.

Subject: Here, the subject to be taught is mentioned along with its sub-divisions; e.g., Geography (geo-morphology), History (European), Mathematics (quadratic equations), English (literature).

Time: Under this heading, the duration of the lesson is noted; e.g., 35 minutes, 40 minutes.

The teacher must know how much time he/she has to unlock (present) essentials of the learning material. The greatest mistake of many student teachers, in this connection, is that they want to deal with too much material in a period. The source of this mistake is two-fold. First, the student teacher has not reduced the theme to its real essentials; second, his/her experience of the children's learning tempo is not yet refined.

The amount of time available for a lesson forces the teacher to plan a time division among the different phases of the lesson; e.g., 10

minutes for stimulating foreknowledge and for stating and formulating the problem; 20 minutes for presenting the new content; 10 minutes for controlling and evaluating the quality of the insights into the new knowledge structure. If the teacher does not consider the time factor, it often happens that he/she doesn't control or evaluate the outcome. Such a lesson tends not to have a firm didactic structure and is loose and disconnected.

Grouping

It is important for the teacher to know if the children in the class are grouped homogeneously or heterogeneously. From the nature of the matter, the grouping of the class will influence his/her entire didactic performance. The teacher also must know the criteria used to form the homogeneous class groups; e.g., is the grouping formed according to age, intellectual potentialities, choice of subject, interest? This knowledge is clearly important when it is considered that the unlocking of reality (presentation of the lesson content) must occur in terms of the needs of the individual child. The implication is that the teacher must provide more differentiation in his/her preparation if the class is a heterogeneous or complex one.

Under this heading, the groupings are merely named: e.g., homogeneously grouped according to intellectual potentialities; homogeneous according to subject choice, but heterogeneous according to intellectual potentialities; homogeneously grouped according to age, but heterogeneous with respect to intellectual potentialities and gender. The various possibilities for grouping children in the class are great and is a factor which must be considered for a thorough lesson preparation.

The teaching aim

The lesson aim

Under this heading, **what the teacher aims at with the specific lesson** is explained. In formulating the lesson aim, a teacher cannot merely transcribe the theme as it appears in the work scheme. The specific theme of the lesson is an aspect of the total subject and must be integrated into the lessons which follow. The teacher knows how the pupils have progressed with the themes in a series of lessons, and knows what successive insights are going to be required by

his/jer teaching. At the same time, he/she knows how the specific lesson theme fits into the whole.

It is the teacher's task to interpret the lesson themes such that they are integrated with the pupils' foreknowledge of the theme and with the succeeding work. For example, a syllabus for 11th grade History presents "The Industrial Revolution". This theme fits into the Napoleonic Wars and the colonization movement in Australia and Africa. It makes no sense to the child to announce "The Industrial Revolution" as a lesson aim. Since it is impossible to present or unlock the entire Industrial Revolution in a class period, this theme must be differentiated into themes for a few lessons which form a series; for example, inventions which preceded the Industrial Revolution, the social structure of England during the Industrial Revolution, the consequences of the Industrial Revolution.

Each of these themes, as aspects of the whole, now can be used by the teacher as lesson aims. He/she will require that the pupils gain insight into the essential structures of the specific themes because, without this insight, a child cannot progress with the total theme. A precise description of the lesson aim also has the advantage that the teacher knows exactly what he/she is going to look for in evaluating the acquired insights, and how his/her unlocking must be structured to make the essentials of the learning material and their necessary relationships evident for the learner.

The careful formulation of the lesson aim is one of the most important steps in reducing the learning material to its essentials. Because the teacher first decides on a lesson aim, which implies that he/she first must delimit and refine the theme, he/she is able to look for examples by which he/she can achieve the lesson aim (this also holds for the learning aim). Each choice of an example once again forces him/her to reduce the learning material and look at the extent to which this example is appropriate for the specific situation, for the specific structure and complexity of the learning material, and for the level of readiness of the specific children. The reduction of the learning material is treated later but, with the formulation of the lesson aim, it already is necessary to refer to the act of reduction peculiar to teaching.

The lesson aim must be concisely and accurately formulated, e.g., the meaning illustrated by the poem, "The Road Not Taken," by

Robert Frost; constructing with geometrical tools (compass and straight edge). In these two examples, the exposition is directed to **the meaning illustrated** in the first case, and to **geometric construction,** in the second.

The learning aim

The lesson theme in the syllabus can no more serve as the lesson aim than can the lesson aim serve as the learning aim for the child. In the ordinary, everyday practice of teaching, the careful formulation of the learning aim is shamefully neglected. The usual practice is for a teacher to announce to the class, "Today we are going to read the poem, 'The Road Not Taken,' by Robert Frost," or "Today we are going to consider the inventions which led to the Industrial Revolution," or "Today we are going to study the regional climate of the High Veld."

Simply announcing the lesson aim in no way implies that the pupil is stimulated or motivated to achieve it. That is, it does not imply that he/she is going to exert him/herself to master the lesson theme. By learning aim is understood **what the child is to achieve.** The learning aim involves insights into the concepts which allow the essentials of the theme to be meaningful to the pupil. The implication is that the teacher must make a choice of one or more examples which can reflect the delimited essentials (as summarized in the lesson aim) for the pupil.

In a Geography syllabus for grade 9, the pupils are expected to acquire insight into the different climatic regions of the world. The climatic regions are named, e.g., the equatorial, savannah, warm desert, Mediterranean, etc. Each of these climatic regions is a specific lesson theme and can be formulated as a lesson aim. If the teacher handles the Grass Veld regions and **assumes without question** that the learners have an insight into the coherent factors (such as the geomorphology, the location, the prevailing winds, etc., and the ways in which these are related and function together--all acquired through the unlocking of the concept "Grass Veld regions"), the outcome or dividend of his/her teaching will be very disappointing. He/she is compelled to choose, e.g., the High Veld region as an example, and to unlock and explicate the essentials of this climatic region, In this case, the learning aim might be "the factors which cause or underlie the climate of the High Veld region," because he/she will insist that the learner have an insight into "the

factors that cause", so that the pupil can deal with the concept "Grass Veld region" with insight.

The teacher must ask him/herself, "What precisely are the concepts (ideas) the pupils must possess to be able to understand the theme? The answer to this question is the learning aim. The learning aim also must be concisely formulated, e.g., "the factors which underlie the climate of the High Veld region."

Stating the problem

Formulating the problem: Just as announcing the lesson aim will not motivate the pupils to achieve the learning aim, announcing the learning aim will not create a problem for them. It is true that the pupils' motivation is stimulated and directed by a problem. Thus, the teacher is compelled, by meaningfully connecting with the pupils' foreknowledge, to lead them to a personal formulation of the problem. This aspect of the lesson structure is explained in detail later. Nonetheless, it is pointed out that only when the child lived experiences specific shortcomings in his/her own structure of knowledge, in the light of his/her lived experience of the lesson problem, will he/she assume responsibility for solving the problem. The teacher's guidance of the child to formulate and recognize the problem for him/herself amounts to the teacher indicating that his/her foreknowledge is inadequate to solve the specific problem. Thus, for the child, solving the problem is aimed at overcoming his/her own deficiencies in knowledge, insights, actions, etc. A child's wanting to eliminate his/her deficiencies in knowing, etc. is his/her motivation to eventually attain the learning aim.

The problem might appear on the chalkboard. The pupils continually must be aware of the precise direction the lesson is taking. To stay with our example, it will be of little use to write on the chalkboard the learning aim, "The factors underlying or causing the climate of the High Veld region". In this case, the teacher must guide the pupils to an awareness that their knowledge of the relationships among climatological factors is deficient, by requiring them to meaningfully answer the question, "what are the relationships among climatological factors underlying the High Veld region?' In this way, the teacher guides the pupils to question themselves by linking up with their foreknowledge of temperature,

temperature change, prevailing winds, precipitation, humidity, air pressure, etc.

Under this heading, the lesson problem is formulated; for example, "What are the relationships among the underlying climatological factors of the High Veld region."

Solving the problem: By the teacher's exposition, with the help of chosen examples, the essential insights, refined concept forming, coherent meanings, good solution methods and manipulation schemes become understandable to the child. This step can be planned as a **chalkboard scheme,** and it appears in the lesson write-up under the above heading.

In preparing the lesson, the teacher has reduced the learning material to its essentials and systematized it in the lesson write-up. In the actual lesson situation, we allow the pupils to take an effective part because now we, together with the child, reduce the learning material. The pupil must see the coherence of our reduction; he/she must reduce the material him/herself. The purpose of the reduction, which is observable on the chalkboard, is to help him/her reduce the material him/herself. Without the teacher's reduction, the child is unable to create order out of the chaos; he/she cannot get a logical view of the essentials; he/she cannot learn.

Writing down the board scheme in the lesson write-up has a four-fold benefit: first, it ensures the teacher that he/she has included all the essentials in his/her exposition; second, it determines whether the relationships among the essentials will be **logical** and **meaningful** to the pupils; third, it shows whether the structure and relationships of the essentials will gradually and systematically lead to the **solution of the problem**; fourth, it indicates if **possible bottlenecks** and problem areas can arise, which must be intercepted by means of a branching in the exposition. The write-up of the board scheme is of cardinal importance to the teacher because it must confirm for him/her that his/her unlocking can achieve the anticipated learning effect.

The Lesson Structure

With the lesson write-up, the teacher justifies his/her choices of the **form** he/she gives the lesson, the **didactic modalities,** which put

his/her lesson plan into motion, and the **course** of the lesson, in which the order of the structure of the plan appears.

Form of the lesson

Choice of didactic ground-form(s): Here the teacher writes down one or a combination of the didactic ground-forms into which he/she is going to cast his/her lesson, considering the level of the pupils' readiness and the nature and complexity of the learning material to achieve the lesson aim most effectively. He/she selects his/her ground-form(s) from **play, discussion, assignment and example.**

Choice of methodological principle(s): The **inductive** or **deductive** methodological principle, or a combination of the two, also is chosen, considering the pupils' level of readiness, as well as the nature and complexity of the learning material, and is indicated under this heading.

Choice of principles for ordering (arranging) the learning material: The way(s) in which the teacher is going to order the learning material is indicated under this heading. The teacher selects one or a combination of the principles of ordering the learning material from **the symbiotic, the linear, the divergent, the spiral, etc.,** which will most effectively reveal the essentials of the learning material to the pupil in his/her situation.

Planning the form of a lesson usually takes place in the above sequence of choices but, at the same time, the lesson and learning aims, the nature and structure of the subject, and the pupils' readiness must be considered. These three factors must be considered each time in deciding on the form the lesson will take.

Method(s) of presenting (unlocking) the content: Under this heading, a brief explanation is given of the anticipated method(s) of presentation which are expected to crystallize out of the previous decisions. It is understandable that the choices of basic didactic forms and logical methodological possibilities will guide the teacher in his/her choice of methods of presentation, as will the methodological principles and the principles of ordering the learning material are of equal importance in this choice.
Also, it is important for the teacher to remember that the methods of presentation change in accordance with the course of the lesson.

Usually, a variety of methods are used during the different phases of a lesson. For example, during actualizing foreknowledge, the **question-and-answer** method can be used; during stating the problem, a combination of question-and-answer and **lecturing** can be used; during exposing the new content a combination of lecturing and **demonstrating** can be used, etc.

The course of the lesson and the didactic modalities: the phases of the lesson

The didactic modalities put the teacher's planning into motion. The motion which, in this way, is actualized is expressed during the lesson. In its turn, the course of the lesson differentiates into various phases. Thus, it is necessary to plan anew the didactic modalities for each phase of the lesson. For this reason, the course of the lesson, as didactic modalities, is viewed as a unity in the write-up of the lesson. In the usual course of a lesson, six essential phases are differentiated: **actualizing foreknowledge; stating the problem; exposing the new content; actualizing (controlling) the lesson content; functionalizing (i.e., applying, transferring) and testing (evaluating).**

The didactic modalities, which give a dynamic to the planning, are differentiated into **didactic principles, modes of learning** and **teaching and learning aids.** The choice of a didactic principle (activity, differentiation, individualization, socialization and tempo variation) is a determinant of the teaching effect aimed for. To provide more certainty to the learning event, there must be an additional effort to delimit one or more planned modes of learning within the didactic principle(s). If necessary, the teaching effect can be promoted through the responsible use of aids such as various real objects, models, slide projectors, tape recorders, films, etc.

It is important to remember that the nature and complexity of the learning material, and the pupils' readiness can lead to a great variety of choices of didactic principles, modes of learning, as well as teaching and learning aids.

The following remarks about the phases of a lesson are merely possibilities and not invariable certainties:

Actualizing foreknowledge: During this phase, the pupils' foreknowledge regarding the matter under consideration is called to

awareness. There is a search for relationships between the foreknowledge and the new knowledge to ensure the attribution of meaning--the pupil must experience the new theme as meaningful. Here in his/her lesson write-up, the teacher must explain how he/she is going to call up the pupils' foreknowledge, e.g., by asking questions about already acquired insights, by leading a class discussion of the work already dealt with, by letting the pupils talk about their own experiences.

Didactic principles:

Under this heading, the teacher must explain which of the didactic principles (i.e., activity, individualization, socialization and tempo variation) are going to be more prominent in this phase. Each pupil must be actively involved in recalling and implementing his/her foreknowledge, but because this involves familiar insights, the tempo can be considerably faster than when exposing the new knowledge, for example. Thus, under this heading, the teacher writes: **activity** and **quick tempo.**

Modes of learning:

The mode of learning which is most prominent during this phase is remembering. Thus, here the teacher writes down **remembering.**

Teaching and learning aids:

Since this phase is brought into motion in terms of already acquired insights, the teacher often will make use of a board scheme, a print or illustration, etc. so that such insights can be quickly and adequately recalled. Thus, here the teacher simply writes **chalkboard, print of...**, etc.

Stating the problem: During this phase, the acquired insights (foreknowledge) are recounted and placed in a new relationship which contains a problem for the pupil. Under this heading, the teacher explains how he/she is going to lead the pupils out of what they know to notice the problem in the new content, because he/she leads them to lived experience the inadequacy of their insights. This phase especially requires careful planning because the lesson progresses or falls flat depending on the extent to which the pupils are motivated by the problem to attain the learning aim.

Didactic principles:

The active stake of each pupil in grasping the lesson problem is essential during this phase. In this phase, the teacher also must keep in mind the pupils' individual differences; hence, individualization also is important. Usually, during this phase, the lesson tempo decreases because the teacher must be sure that each pupil appreciates the lesson problem. Accordingly, under this heading of the lesson write-up, the teacher indicates the following: **activity, individualization** and **slower lesson tempo.**

Modes of learning:

Because the problem places the acquired insights in a new relationship or structure, thinking, as a mode of learning, will be of importance here. In this phase, the pupils' perceiving is not yet differentiated, but his/her sensing is stimulated. Accordingly, under this heading, the teacher writes down **thinking, sensing.**

Teaching and learning aids:

Because stating the problem really involves stimulating foreknowledge, and the questioning of it in a new structure, aids (e.g., slide projectors, films, prints, diagrams, graphics, tables, schemes) are chosen here which, as representations of it, call forth the previous knowledge again. These aids usually are especially effective because, once again, they represent to the pupils their foreknowledge. These teaching and learning aids can even be the point of departure for the lesson. By using aids which stimulate the pupil's sensing (e.g., teaching aids which represent the structure, form and order of the **matter** as a total or global image), the pupil comes to question his/her own knowledge. Here, one thinks of a print, a representation, a moving or colored model.

In writing up the lesson, the teacher simply names the different teaching and learning aids (and their sequence of use) which are going to be implemented in this phase of the lesson, e.g., **graphics** and **tables** and then a **print.**

Exposing the new content: Under this heading of the lesson write-up, the teacher explains the course of the exposition. Here he/she must clarify how he/she is going to make the essentials of the learning material evident, how he/she is going to place them in a

logical relationship, how these essentials (e.g., as they appear as a scheme on the chalkboard) gradually make a solution to the problem evident.

It is in the nature of the exposition that the teacher continually reaches back to the pupil's foreknowledge to make his/her exposition more meaningful to them. During this phase, e.g., often, the question-and-answer, the class discussion, learning/study discussion methods are used. He/she continually directs his/her pupils' perceiving to the essentials of the learning material. During this phase, their active involvement is necessary, and it gives this phase its dynamic character.

During the exposition of the new content, concept formation is primarily what occurs. Under this heading of the lesson write-up, the teacher should write down the concepts to which the lesson is directed. The order and relationship of concepts are just as important, and for this reason they should also be written down. The explanation provided under this heading differs from the board scheme in that the latter indicates the sequential (i.e., chronological) and essential (i.e., structural) aspects of the theme in question, while the concepts in the exposition of the new content are the content of the lesson aim.

As previously mentioned, the didactic modalities must be worked out for each phase of the lesson.

Didactic principles:

From the nature of exposing the new content, it will be necessary for each child to be actively involved in the lesson, otherwise the insights to which it is directed cannot be guaranteed for each individual child. Besides activity, as a principle, during this phase, the lesson tempo will be slightly slower because the pupil, **together** with the teacher, must reduce the learning material to its essentials and understand the relationships among these essentials. During this phase, with respect to tempo, the teacher allows him/herself to be led by the quality of the immediate learning result. To influence the quality of the learning result, he/she will individualize, especially be means of individually directed questions and by eliciting commentary from the pupils.

Under this heading, the teacher writes, e.g., **activity, slower tempo** and **individualization.**

Modes of learning

Because this phase primarily involves insights into the concepts central to the new content, the teacher will (depending on the type of lesson) stimulate and direct those modes of learning most appropriate for, and applicable to gaining insight into the concepts. For example, in an explanatory lesson, thinking and perceiving will be central; perceiving to establish a point of focus and thinking to order the point of focus into a profile or relief (i.e., distinctions by contrast). In this case, he/she writes down **perceiving** and **thinking.**

Teaching and learning aids:

As in each other phase, teaching and learning aids are chosen by virtue of the nature of the learning material (e.g., is it meaningful to try to present specific concepts visually?), the level of the pupil's readiness (e.g., will this pupil understand an abstract scheme of a course of action?) and the modes of learning (e.g., which teaching and learning aids can direct perceiving and actualize thinking with respect to the essentials of the learning material?).

During this phase of the lesson, the teaching and learning aids ought to give the pupil the opportunity to use them according to his/her own needs and tempo (e.g., a real object, a model, an apparatus). Because thinking during this phase is implemented more on a reproductive level, aids should be used which link up with representations of already acquired knowledge (e.g., slide projectors, film, diagrams, graphics, tables, schemes).

Under this heading of the lesson plan, the teacher writes, e.g., **model of..., experimental apparatus for a ... experiment, prints** (specified)**, graphs of..., tables of... .**

Actualizing (controlling) the lesson content: during this phase, the concern is with the pupil's control of their insight into the essentials. Under this heading, the teacher explains how he/she is going to decide whether the pupils understand the essentials of the learning material, e.g., by intermittent questions, while exposing the new content, by gradually completing a prepared part of a whole.

During this phase, the pupil should be given the opportunity to handle and use his/her new insights him/herself.

The essential concepts and activity structures of certain learning material (e.g., mathematics, arithmetic, natural science) only can be broken through to real insight to the extent that the pupil practices the essentials until that insight is attained. In this case, the teacher must demonstrate the different practice examples, in terms of which the insight can break through.

During this phase of the lesson, the pupil must be able to schematize the insights, i.e., place them in a synoptic scheme with his/her foreknowledge. The scheme should include the essentials of the learning material, as well as the relationships among them. Naming the new insights also is of importance here--the unambiguous description, articulation, etc. expressed in language requires the pupil to engage in productive thinking (in contrast to reproductive thinking). This entire phase is focused on stimulating and directing productive thinking. The schemes and names to which the entire exposition has led must be explained here.

Didactic principles:

Because this phase is attuned to individual insight into the learning material, individualization is an important didactic principle. In this phase, tempo occurs by virtue of each pupil's own pace and not by following the teacher's lead. For this reason, there is little sense in planning a faster or slower tempo. In each lesson phase, activity is evident, but this is especially so while actualizing (controlling) the content. This is because the pupil must place the essentials of the learning material within his/her horizon of knowledge, and this requires whole-hearted activity. During this phase, differentiation of the content is not yet very prominent because all the pupils must understand the same essentials.

Under this heading, the teacher writes **individualization** and **activity.**

Modes of learning:

Since the concern here is to firm up the insights, in the sense that each pupil must realize the insights him/herself, thinking (especially productive thinking) is particularly important. The

pupils usually are allowed to wrestle with the problem on their own and, thus, discover shortcomings in their own field of experience. However, the teacher does not abandon them to their own fate, but helps each individual pupil by providing supplementary knowledge and skills. He/she continually demands that the pupils themselves search again and again for better insight. The aids only provide direction for finding
possible ways to solve the problem. They give impetus to thinking or, when the pupil has gone astray, they again correct the direction of thinking and, in this way, serve as controlling aids.

Teaching and learning aids:

General aids are not used here. Rather, aids are chosen and used which correspond to each pupil's needs and difficulties. Even so, the teacher must anticipate these difficulties and make sure that he/she has enough suitable aids on hand. Such aids are listed under this heading.

Functionalizing: This phase of the lesson is directed to firming up and making functional [useable] the insights the pupils have acquired during the lesson phase exposition of the new content. This means they must be able to use the insights in similar problem areas with understanding. In this phase, practicing the insights often is called for. This can be seen most clearly where the sequence of work is firmed up in selected practices, e.g., in mathematics and arithmetic. Such practices are explained under this heading.

To be able to use the new insights (to bring them into function; to functionalize them), they must be integrated with the foreknowledge. Integrating the new with existing knowledge requires careful preparation and reflection. This is true for all learning material, but because of the multiplicity of the so-called human sciences (language, history, etc.), the problem of integrating the new is more difficult, e.g., in exposing or presenting the reasons for the settlers of 1820 coming to the Cape of Good Hope, the teacher and the pupils ultimately must integrate this historical event with the Napoleonic Wars and the Industrial Revolution. At the same time, the cultural and, especially the constitutional history of the Cape after 1820, are suggested and put in perspective. The integration of the new insights with existing insights is explained under this heading.

Functionalizing implies applying. The pupil must be able to apply the new insights. The form in which the application can be observed must be carefully planned and considered, and then explained under this heading; for example, application exercises of similar problems, working out one or more related examples, firming up the concept in the pupil's own composition or poem, etc.

Didactic principles:

Once again, activity is central here because each pupil must actively exercise, integrate and apply his/her insights. Here, there especially is a differentiation of the learning material because the teacher changes the forms of exercise and application according to each pupil's potentialities. At the same time, there is individualization. Once again, the tempo cannot be planned beforehand because each pupil will exercise, integrate and apply insights according to his/her own tempo. Here the teacher usually writes **activity, differentiation** and **individualization.**

Modes of learning:

Given the nature of the matter, productive thinking and remembering will be particularly important in this phase of the lesson. The pupil must restructure his/her already acquired insights to integrate and use them, and in addition, he/she must rely on his/her memory to apply them (behave with insight). At the risk of repetition, once again it is indicated that the nature of the learning material, the pupils' level of readiness and the type of lesson will determine which modes of learning must be stimulated and directed during this phase of the lesson. In a general explicatory lesson, **productive thinking** and **remembering** will be written here.

Teaching and learning aids:

In addition to direction-giving aids which encourage thinking, in this phase, it is important that they also be used to determine whether the pupils' insights into the new knowledge are at the level expected. To ascertain this, a diagram or scheme (without words) can be used for a quick and easy review. In this regard, a film, a tape recorder, or a program also are useful.

The pupils must be given the opportunity to practice and apply the new. For this, a chalkboard, unrolled sheets of paper, textbooks, an overhead projector, etc. can be used. Because insight into the concept has already been attained, the aids will only be directed to practicing the insight in new situations. As many new problems and possibilities of application as are feasible must be pointed out, such as field trips, exhibits, films, etc.

The teaching and learning aids involved are written out.

Testing (evaluating): After the end of a lesson or a series of lessons, a teacher must test the proficiency of the pupils' insight into the essentials of the new learning material, or evaluate his/her thinking, creative, activities about the matter. Testing and evaluating are always necessary and, therefore, the teacher must make provision for them in preparing his/her lesson. Testing and evaluating are orienting activities for both the teacher and the pupil. By testing and evaluating the pupils' insight into the essentials of the learning material, the teacher determines their readiness to progress further in the subject. At the same time, he/she informs him/herself of the quality of his/her presenting (unlocking) the learning material (in the sense of effective or authentic learning results by the pupils). By testing and evaluating, he/she also can ascertain which pupils have a need for remedial help, and he/she can set up a remedial program to overcome the difficulty. For the child, testing and evaluating are orienting in the sense that the teacher affirms to him/her that his/her knowledge is satisfactory or unsatisfactory, that he/she has or hasn't attained the expected level of achievement, that he/she is unable to deal with the essentials of the learning material, problematic areas are pointed out to him/her, etc.

It is self-evident that a teacher must prepare the form and content of the testing and evaluating with thoroughness. In the first place, he/she must know precisely what he/she is going to test and evaluate. The test must be structured in such a way that he/she can be sure that it reflects the quality of the pupils' insight into and handling of the essentials of the learning material. The form in which the test is going to be cast also deserves special attention. For example, is he/she going to test by having the pupils fill in or complete a list of questions, by an essay, by a dictation exercise, by a systematic exposition of content, by a qualitative analysis of the pupil's own constructed object?

Under this heading, the teacher provides a complete explanation of both the form and content of his/her testing and evaluating insights.

Didactic principles:

During this phase of the lesson, there are self-activity, differentiation and tempo variation. From the nature of the matter, the pupil him/herself must be given responsibility for his/her insights into the essentials of the new learning material. Responsibility is nothing other than self-activity; the pupil sets his/her insights into motion, he/she mobilizes and directs them to solve related problems. Assignment is at the foundation of testing and evaluating, in the sense that the teacher assigns the pupils to solve problems by means of their insights, to make applications, to search for specific relationships, to draw conclusions, etc.

By virtue of his/her knowledge of the individual pupils' potentialities, the teacher differentiates the assignments; for example, he/she gives simpler assignments to the slower or weaker pupils but gives them more opportunity to exercise insights; for the stronger pupils, he/she gives more varied assignments with respect to depth and breadth. In this way, there is differentiation and individualization.

The nature of the learning material and the form of testing and evaluating determine whether the teacher sets a minimum time limit and whether the pupils follow their own tempo in carrying out the assignments.

Under this heading, the teacher writes, e.g., **self-activity, differentiation** and **fixed tempo.**

Modes of learning:

Because of the nature of testing and evaluating, a special appeal is directed to the pupils' memory and productive thinking. During this phase of the lesson, the pupil must recall his/her insights into the essentials of the learning material and relate them to a problem area, order, integrate and find relationships to be able to properly carry out the assignment. This requires productive thinking which, didactically, is the means for attaining the didactic-pedagogic aim through unlocking reality, i.e., independence and responsibility.

Under this heading, the teacher writes, e.g., **remembering** and **productive thinking.**

Teaching and learning aids:

Because the concern during this phase is with evaluating and testing the pupils' insights, skills, knowledge, etc., teaching aids will be used which correspond to the unique nature of the subject, e.g., tasks, projects, completing or filling in lists of questions. Here the teacher simply writes, e.g., **task, project,** etc.

SUMMARY: THE LESSON SCHEME

In summarizing the above, the lesson scheme is represented as follows:

Localizing information:

Grade:
Subject:
Time:

Grouping:

The teaching aim:

The lesson aim:
The learning aim:
Stating the problem:
    Formulating the problem:
    Problem solution:

The lesson structure:

Form of the lesson:

    Choice of ground form(s):
    Choice of methodological principle(s):
    Choice of principle(s) of ordering the learning material:
    Method(s) of solution:

The course of the lesson and didactic modalities:

Actualizing foreknowledge:

Didactic principles:
Modes of learning:
Teaching and learning aids:

Stating the problem:

Didactic principles:
Modes of learning:
Teaching and learning aids:

Exposing the new content:

Didactic principles:
Modes of learning
Teaching and learning aids:

Actualizing the lesson content:

Didactic principles:
Modes of learning:
Teaching and learning aids:

Functionalizing:

Didactic principles:
Modes of learning
Teaching and learning aids:

Testing (Evaluating):

Didactic principles:
Modes of learning:
Teaching and learning aids:

SOME EXAMPLES OF LESSON WRITE-UPS

The aim of these examples is not to present a "model" to be slavishly followed. Indeed, the examples are not the only ways the themes can be unlocked or presented. The fact is, each teacher, in

unlocking reality reveals his/her own teaching style in his/her teaching activities.

A teaching model only makes sense if a teacher can gauge its basis and boundary, i.e., if he/she can interpret it in accordance with the didactic-pedagogic context underlying the structure of the model. In a didactic sense, this claim holds for all so-called "models" (models, teaching models, learning models, etc.) because, if the "model" does not contain the didactic essentials, it is not really a model of teaching.

What are offered are merely examples of how individual teachers plan to unlock specific content to attain a specific teaching aim.

First example:

Localizing information:

Grade level: 8th grade.
Subject: Geography (introduction to map work).
Time: 35 minutes.

Grouping:

Homogeneous with respect to age and intellectual potentialities but heterogeneous regarding gender.

The teaching aim:

The lesson aim: To unlock or present the concept "direction" and to firm up its description.

The learning aim: To provide an answer to the question, "What is direction and how can one describe it?"

Stating the problem:

Problem formulation: The learners are led via the lesson phases actualizing foreknowledge and stating the problem to pose to themselves the problem, "What is direction and how can one name or describe it?" This problem is written on the left side of the chalkboard.

Problem solution: During the lesson phase of exposing the new content, the following board scheme is presented gradually:

1. (a) The sun rises in the EAST.
   (b) The sun sets in the WEST.
2. Direction is determined by the sun.
3. NORTH is where the sun is at 12:00 (noon) in the Southern Hemisphere.
4. SOUTH is where the sun is at 12:00 (noon) in the Northern Hemisphere.
5. South is in the opposite direction from NORTH.
6. At night, direction is determined by the stars.
   (a) Southern Cross in the Southern Hemisphere.
   (b) Polar star in the Northern Hemisphere.
7. Direction also is determined by a MAGNETIC COMPASS.
8. Direction is described by N, S, E and W.
9. Between two directions, there also is a direction
   N and E: NE
   N and W: NW
   S and E: SE
   S and W: SW
10. Direction is a description of the position of one place with respect to another place on the earth's surface.
11. Direction is described by a compass card as N, S, E and W and points between.

The lesson structure:

Form of the lesson:

Choice of ground form(s): discussion, example and assignment.
Choice of methodological principle: inductive.
Choice of principles for ordering the learning material: symbiotic and progressive.
Methods of presentation (unlocking): During actualizing foreknowledge, the **question-and-answer method** prevails. During stating the problem, **narrating alternating with question-and-answer** are the prevailing methods. During exposing the content, **narrating alternating with demonstrating** prevail. During actualizing the lesson content, **learning discussion alternating with free activity** prevail.

During functionalizing, the primary method is **drill.** During testing, the methods used primarily are **question-and-answer alternating with the textbook.**

The course (phases) of the lesson and didactic modalities:

Actualizing foreknowledge:

The pupils are led by the following questions to actualize their foreknowledge of direction: Where is your house in relation to the school? Where is the City Hall, church, station, etc. in relation to the school? What way must you travel to arrive in Durban, Cape Town, Windhoek, etc.? (In each case the pupil must show where the place is, the direction, by pointing).

These questions give the pupils the opportunity to recall their own knowledge of the relationship between one place and another.

Didactic principles: activity, individualization (questions are directed to individual pupils), fast tempo.

Modes of learning: mainly remembering alternating with reproductive thinking and perceiving.

Teaching and learning aids: the actual City Hall and church spire (which are visible from the classroom). A large aerial photo of the city.

Stating the problem:

By explanation and the question, "You have all shown where your house, etc. is, but what have you really shown?", the pupils are guided to answer the question with the word "direction". The question is now stated in terms of the possibility of accurately showing direction when one cannot do so by gestures, e.g., by means of the following questions:

1. How would you **write to** someone where a place is in relation to where you live?
2. How can a ship in difficulty describe **over the radio** where it is?

Now the pupils are guided to conclude that the names of direction must have a shared meaning. It is now advisable that the lesson problem, "what is direction and how can one name it?" be written on the chalkboard.

Didactic principles: activity, individualization, slower tempo.

Modes of learning: mainly reproductive and productive thinking and remembering.

Teaching and learning aids: none.

Exposing the new content:

By means of questions and narrating, the following facts are established:

1. The sun rises in the EAST.
2. The sun sets in the WEST.
3. Direction is determined by the sun.

Each time, the pupils have to indicate where EAST and WEST are. Maps on the wall with E and W in the correct places are introduced. Also, a map is placed on the floor and an East-West line is drawn through it.

The pupils now are led by the question "Can we also determine the other directions by means of the sun?" to a discussion of methods for determining NORTH with a compass, with a stick in the ground and its shadow, and with a watch. NORTH and SOUTH are indicated, and the NORTH-SOUTH line is affixed to the map on the floor as are the letters N and S to the map on the wall.

The pupils are questioned about how they can determine direction at night. The use of the Southern Cross (Southern Hemisphere) and the Polar Star (Northern Hemisphere) are now discussed and explained.

The question "Can we now say where one place is with respect to another?" leads to a discussion of labeling direction. The other points of direction on the compass card are discussed. For example, by the question, "How can we describe the direction of a place between NORTH and EAST?", the pupils are guided to formulate for

themselves the label NORTHEAST. The same holds for the other intermediate directions.

The compass card, with intermediate directions filled in, is on the floor and the pupils show with it that the directions on the map are literally correct (i.e., really are **on** the earth's surface) when it lies horizontally on the floor, but that we hang the map vertically to work with it more easily. The pupils are guided to deduce that NORTH is always at the top of the map on the wall.

A world globe is now displayed, and the following must be established from questions:

(1) NORTH and SOUTH are the main points and refer to the NORTH POLE and the SOUTH POLE, respectively.
(2) EAST and WEST are not main points but refer to the direction in which the sun rises and sets.

The pupils are guided to deduce that: direction is a description of the location of one place with respect to another by means of N, S, E and W and the intermediate points on a compass card.

Didactic principles: activity, individualization.

Modes of learning: perceiving alternating with thinking.

Teaching and learning aids: maps, globe, magnetic compass and prints of the Southern Cross and the Polar Star.

Actualizing the lesson content:

The pupils are now asked to describe the step-by-step construction of a compass card. During this task, control of the insights is exercised. The correct labeling of the directions of the wind are especially attended to. The pupils are individually called upon to show and to label the directions of the wind.

Didactic principles: individualization.
Modes of learning: productive thinking and remembering.
Teaching and learning aids: model of a compass card, land maps.

Functionalizing:

The insights into direction in constructing a compass card are implemented by the following assignments:

(i) Draw a compass card.
(ii) Determine the direction of the following places from each other according to the principles of direction and their labels (e.g., N, S, SE). Use a land map.
    (a) Cape Town lies to the _____ of Port Elizabeth.
    (b) Port Elizabeth lies to the _____ of Cape Town.
    (c) Johannesburg lies to the _____ of Cape Town.
    (d) Cape Town lies to the _____ of Johannesburg.
    (e) Pretoria lies to the _____ of Bloemfontein.
    (f) Bloemfontein lies to the _____ of Pretoria.
    (g) Kimberley lies to the _____ of Bloemfontein.
    (h) Bloemfontein lies to the _____ of Kimberley.
    (i) Durban lies to the _____ of Pretoria.
    (j) Pretoria lies to the _____ of Durban.
(iii) For the quicker pupils, more difficult ancillary exercises are given.
(iv) Briefly describe the meaning of the concept "direction".

Didactic principles: activity, differentiation and individualization (especially regarding individual tempo and differentiation of exercises).

Modes of learning: productive thinking, remembering, restructuring.

Teaching and learning aids: land map of South Africa.

Testing (Evaluating):

The test completed in the functionalizing phase is evaluated to determine the pupils' insight into the essentials of the learning material. This brief test is collected and corrected after the lesson. For this reason, there is no need to make provision here for didactic principles, modes of learning as well as teaching and learning aids.

Second example:

Localizing information:

Grade level: 10th grade
Subject: Mathematics (greatest common divisor and least common multiple of algebraic expressions).
Time: 40 minutes.

Grouping:

Homogeneous with respect to age and intellectual potentialities but heterogeneous with respect to gender.

The teaching aim:

The lesson aim: To synthesize algebraic expressions by factoring and by correctly defining the concepts **greatest common divisor** (GCD) and **least common multiple** (LCM).

The learning aim: To effectively implement the concepts **least common multiple** and **greatest common divisor** in such problems as combining algebraic factors and using these concepts insightfully in additional problem situations.

Stating the problem:

Problem formulation: Via the lesson phases of actualizing foreknowledge and stating the problem, the pupils are made aware of their inability to determine algebraically the least common multiple and the greatest common divisor without an analysis into factors. Correspondingly, they are guided by the question, "How can a least common multiple and greatest common divisor be determined by analogy with arithmetic examples?" The teacher writes the question on the chalkboard.

Problem solution: During the lesson phase of exposing the new content, the following board scheme gradually is shown:

1. $8 = 2 \times 2 \times 2$
   $12 = 2 \times 2 \times 3$
   $18 = 2 \times 3 \times 3$
   GCD = 2.
   LCM = $2 \times 2 \times 2 \times 3 \times 3 = 72$.

2. $18a^2 - 18 = 18 (a^2 - 1)$
$= 18 (a + 1) (a - 1).$
$18a^2 + 18a + 4 = 2(9a^2 + 9a + 2)$
$= 2(3a + 1) (3a + 2).$
$18a^2 - 15a - 18 = 3(6a^2 - 5a - 6)$
$= 3(3a + 2) (2a - 3).$
GCD = 1.
LCM = 18 (a + 1) (a - 1) (3a + 1) (3a + 2) (2a - 3)

Note: The similarity between the logical construction of the algebraic and the arithmetic example (which the pupils already know) is stressed.

The lesson structure:

Form of the lesson:

Choice of ground forms: discussion, example and assignment.
Choice of methodological principles: initially deductive and then inductive to discover the concepts.
Choice of principles for ordering the learning materials: linear.
Methods of presenting (unlocking): During actualizing foreknowledge: demonstration. During stating the problem: primarily questions-and-answers. During exposition of the new content: primarily demonstration intermingled with questions-and-answers. During actualizing the lesson content: primarily demonstration intermingled with questions-and-answers. During functionalizing: mainly the textbook. During testing: preponderantly textbook intermingled with questions-and-answers.

The course of the lesson and didactic modalities:

Actualizing foreknowledge:

Since the concepts of "factor", "greatest common divisor" and "least common multiple" embrace the core of the foreknowledge, these

concepts have to be clarified again with appropriate questions. Some computational examples will be used as demonstrations after the concepts "greatest common divisor" and "least common multiple" are first analyzed so the meaning of each part-concept also is clear. Such part-concepts as "common", "multiple", "factor" must first be illustrated by simple examples.

Didactic principles: activity, individualization, tempo variation.
Modes of learning: Thinking, perceiving, sensing.
Teaching and learning aids: chalkboard.

Stating the problem:

On the basis of the relevant foreknowledge, which is actualized, the pupils realize that at this stage they can find the greatest common divisor and the least common multiple of arithmetic numbers and simple algebraic monomials. The application of the concepts to algebraic polynomials, however, awakens a feeling of the problematic in the child. By further analyzing the problem, they realize that their already existing concepts need to be generalized and can be applied to algebraic polynomials. Here the relationship between "arithmetic number" and "algebraic expression" must be clearly expressed.

Didactic principle: Guided activity.
Modes of learning: Sensing and perceiving.
Teaching and learning aid: Chalkboard.

Exposing the new content:

The correspondence between the determination of the greatest common divisor and the least common multiple of arithmetic numbers and algebraic monomials is demonstrated by appropriate examples. The difference in presenting the new lies in the fact that the analysis of algebraic expressions into factors presents an obstacle. The difference and similarity can be illustrated for the pupils by a good example:

First step:
Analyze each expression into factors:

Arithmetic example	Algebraic example
8 = 2 x 2 x 2	$18a^2 - 18 = 18(a^2 - 1)$
12 = 2 x 2 x 3	$= 18(a + 1)(a - 1)$
18 = 2 x 3 x 3	
	$18a^2 + 18a + 4 =$
	$2(3a + 1)(3a = 2)$
	$18a^2 - 15a - 18 =$
	$3(3a + 2)(2a - 3).$

Second step:
Look for common factors in all three expressions and numbers. In the arithmetic example, there is only one such factor, namely 2, which is the greatest common divisor. In the algebraic example, there is no common factor and thus the greatest common divisor is 1.

Third step:
Use the arithmetic example to show how the least common multiple of the three numbers is found. Begin by writing down the factors of eight, namely, 2 x 2 x 2. To make this a multiple of 12, the factor 3 is needed (2 x 2 x 3). In considering 18, an additional factor of 3 is needed (2 x 3 x 3) and thus the least common multiple is 2 x 2 x 2 x 3 x 3 which is 72.

Now the algebraic example is used in a similar way to conclude that the least common multiple is
$18(a + 1)(a - 1)(3a + 1)(3a + 2)(2a - 3)$.

This arithmetic example can also be studied with insight by applying concepts from set theory.

Didactic principles: guided activity, guided tempo.
Modes of learning: perceiving and thinking.
Teaching and learning aid: chalkboard.

Actualizing the lesson content:

One or two examples with slight differences are now worked through with the pupils to give them the necessary confidence with respect to the correct explanation and factoring.

> **Didactic principles:** guided and self-activity, guided tempo.
> **Modes of learning:** perceiving, thinking, imitating.
> **Teaching and learning aid:** chalkboard.

Functionalizing:

Suitable examples are now sought which the pupils themselves must do so the newly acquired insights can be exercised. In this assignment, the examples are arranged so that there is a perceptible increase in level of difficulty. A few difficult examples are presented as a challenge for the more discerning pupils.

> **Didactic principles:** self-individualization at one's own tempo.
> **Mode of learning:** thinking.
> **Teaching and learning aid:** textbook.

Testing:

A few problems which cover the whole range of difficulty (re factoring) can be presented to the pupils to evaluate their level of achievement. It should always be kept in mind that each problem must test the essentials of what is presented (unlocked).

> **Didactic principle:** self-individualization.
> **Mode of learning:** Thinking.
> **Teaching and learning aid:** copies of the examination.

Third example:

Localizing information:

Grade level: 12th
Subject: Afrikaans (Literature).
Time: 40 minutes.

Grouping:

Homogeneous with respect to age, subject choice, intellectual potentialities and gender (girls).

The teaching aim:

The lesson aim: The striking imagery in the "Ballad of Grayland" by D. J. Opperman.

The learning aim: To sharpen insight into the way a creative poet goes about characterizing persons in their regular day-to-day existence in the city.

Stating the problem:

Problem formulation: Through actualizing foreknowledge and stating the problem, the pupils are guided to state for themselves the problem, namely, "What image(s) are evoked by gray, grayness, gray land?"

Problem solution: Appreciation as well as explication are dealt with in this lesson; therefore, the poem first is read in its entirety by the teacher.

The lesson structure:

Form of the lesson:

Choice of ground forms: conversation, example and assignment.
Choice of methodological principles: initially inductive, later deductive.
Choice of principles for ordering the learning material: Symbiotic and linear.
Methods of presentation (unlocking): During actualizing foreknowledge: question-and-answer method. During stating the problem: mainly narration intermingled with question-and-answer which also are maintained during actualizing the lesson content. During functionalizing: question-and-answer. During testing: the textbook.

The course (phases) of the lesson and didactic modalities:

Actualizing foreknowledge:

Foreknowledge is stimulated by means of questions about a ballad that was dealt with previously. After this, questions are asked of the pupils to guide them to the new content.

For example:
What is it like early in the morning in the winter in the center of the city? Can we compare this with Johannesburg? What is the difference? Is the name **Gold City** still appropriate? What image currently is most conspicuous when one thinks of Johannesburg?

Why is the image of grayness considered? What is the composition of the color gray? What is the effect of a gloomy, gray day on a person?

> **Didactic principles:** activity, individualization (questions are directed to individual pupils), quick tempo.
> **Modes of learning:** remembering, reproductive thinking, imagining, sensing and perceiving.
> **Teaching and learning aid:** a large photo of Johannesburg taken early in the morning.

Stating the problem:

In terms of their own experiences, the pupils are guided by the question How does Opperman create a striking image of a person in "Grayland"?

> **Didactic principles:** activity, individualization, slower tempo.
> **Mode of learning:** productive thinking.
> **Teaching and learning aid:** textbook.

Exposing the new content:

The entire poem is read to the class in a moving way.

> **Didactic principles:** activity and individualization.
> **Modes of learning:** sensing, perceiving, productive thinking.
> **Teaching and learning aid:** textbook.

Actualizing the lesson content:

By narrating, part I of the poem is explained further. With several examples, how a young man goes to the city by train, what his impressions are and how he must perform tiring and irritating work are described. Each stanza is a quick, flashing image of what happens to him. He/she changes jobs very quickly. He/she doesn't like the ugly city; he is in continual conflict: a splendid and touching comparison is when he stacks oil drums on each other and this seems like the cells of a honey-cake but they are empty and not full of sweetness like a honey-cake; for him his work is meaningless and sterile. There is a precise correspondence between the quick hands which grasp and fold together paper in a candy factory and the fast movement of hands playing a piano; but one brings pleasure and the other monotonous drudgery.

From the personifications in the sixth stanza of saws that "scream", chisels that "chatter", cars that "nag", we hear the irritation and frustrations of the young man who again has changed jobs. The image allows his growing resistance to become a real experience, especially when he finds himself in trouble.

> Didactic principles: individualization, activity, slower tempo.
> Mode of learning: productive thinking.
> Teaching and learning aid: chalkboard.

Functionalizing:

Exercise of insights occurs by dealing with part II with the pupils, but by the question-and-answer method.

> Didactic principles: activity, differentiation and individualization.
> Modes of learning: productive thinking, restructuring.
> Teaching and learning aid: textbook.

Testing (Evaluating):

Part III can be given to the pupils as an assignment to determine their insight into the essentials of the learning material. However, in this case, a composition with the heading, "Me, my brothers and sisters", is given to the class by which they are linked to the

generally human confrontation with a world in which they continually must give an account of themselves.

Didactic principle: self-activity.
Modes of learning: from imagining to productive thinking.
Teaching and learning aids: none.

Fourth example- (From Caroline Griffith, Edu 111, 1986)**:**

Localizing information:

Grade level: 4th grade.
Subject: Health (introduction to nutrition).
Time: 50 minutes.

Grouping:

Homogeneous with respect to age and intellectual ability but heterogeneous with respect to gender.

The teaching aim:

The lesson aim: To define the four food groups and show how they are used to make a balanced meal.
The learning aim: To answer the question, What foods make up a balanced meal?
Stating the problem:

Problem formulation: The pupils are led, through the lesson phases, actualizing foreknowledge and stating the problem, to ask themselves what foods make up a balanced meal? This question is written at the top of the chalkboard.

Problem solution: During the lesson phase of exposing the new content, the following lesson scheme is presented gradually:
(a) There are four basic food groups
(1) the **meat** group consists of red meat, poultry, fish and eggs.
(2) the **bread and cereal** group contain foods which are

- Example added by me and does not appear in the original text—G.Y.

made from grain.
(3) the **fruit and vegetable** group contains fruits, vegetables and foods that are made from them.
(4) the **dairy** group contains foods that are made from milk.

(b) A balanced meal contains foods from each of the groups.

The lesson structure:

Form of the lesson:

Choice of ground forms: discussion, example, assignment and play.
Choice of methodological principle: deductive.
Choice of principles for ordering the learning material: symbiotic.
Methods of presentation (unlocking): The **question-and-answer method** is used during actualizing foreknowledge and stating the problem. During exposing the new content, **narrative alternating with question-and-answer methods** are used. **Drilling** is used during actualizing the lesson content, and **demonstrating followed by free activity** are used during functionalizing. Testing consists of evaluating the insights displayed by the pupils in the menus they were asked to plan in the functionalizing phase.

The course (phases) of the lesson and didactic modalities:

Actualizing foreknowledge:

The pupils actualize their foreknowledge of nutrition through the following questions: What did you have for breakfast this morning? Did anybody's mother or father serve them candy, popcorn, or soda pop for breakfast? Why do you think your parents don't serve those things at mealtime? What kinds of foods do your parents serve at mealtime? In each case, several pupils are called on so that discussion among the pupils is encouraged and guided by the teacher. The previous questions encourage the pupils to call to mind their previously learned knowledge about what makes up a healthy meal.

Didactic principles: activity, individualization, and fast

tempo.
Modes of learning: remembering and thinking.
Teaching and learning aids: none.

Stating the problem:

The teacher explains that from the pupils' answers regarding what they normally eat at mealtimes, it seems that their parents are trying to provide balanced meals. The teacher then chooses a few examples of balanced meals from the pupils' answers and asks them if they notice any trends in the types of foods served. During a following discussion in which they attempt to categorize the food in each meal, they are guided to ask themselves the question, What foods make up a balanced meal? This question is written on the chalkboard.

Didactic principles: activity, individualization and decreased tempo.
Mode of learning: thinking.
Teaching and learning aids: none.

Exposing the new content:

By lecturing and asking questions, the following facts are presented:

(a) There are four basic food groups.
    (1) the **meat** group contains red meat, poultry, fish and eggs.
    (2) the **bread and cereal** group contain foods which are made from grain.
    (3) the **fruit and vegetable** group contains fruits, vegetables and the foods that are made from them.
    (4) the **dairy** group contains foods that are made from milk.
(b) A balanced meal must contain foods from each of the four food groups.

A chart showing examples of foods in each of the four groups is used as a visual aid (Not shown here). As each food group is presented, the teacher gives specific examples of foods in that group and asks the pupils to give additional examples.

Didactic principles: activity and decreased tempo.

Modes of learning: perceiving and thinking.
Teaching and learning aids: chart showing examples of the four food groups.

Actualizing the lesson content:

The teacher presents pictures (or 3-D models) of balanced meals and asks the pupils to name the meat, vegetable, etc. in each meal. Then he holds up pictures (or models) of individual foods and asks the pupils to name the food group that each belongs in.

Didactic principle: activity.
Modes of learning: perceiving, thinking, remembering.
Teaching and learning aids: pictures and/or models of balanced meals and individual foods.

Functionalizing:

The pupils are asked to use their knowledge of the food groups and how they combine to form a balanced meal by writing a menu for a balanced meal. The teacher may encourage them to plan a meal for a particular occasion such as Thanksgiving or St. Patrick's Day and choose foods and decorate their menus accordingly.

Didactic principles: activity and individualization.
Modes of learning: thinking, remembering.
Teaching and learning aids: paper, colored pens, scissors.

Testing:

Each pupil's menu from the previous phase is evaluated in terms of whether he has succeeded in putting together a balanced meal. By doing so, the teacher can determine each pupil's insight into the essentials of the learning material, i.e., the four food groups and their combination into a balanced meal.

See previous phase for **didactic principles, modes of learning** and **teaching and learning aids.**