

# Orientation for Field Activity Planning: Contributions of P. Ya.Galperin

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**Abstract** - This work addresses a proposal for guidance for planning field activities based on the Theory of Assimilation by Mental Stages and Formation of Concepts by Galperin. This theory is based on the ideas of Vigotsky and Leontiev, therefore with developmental characteristics. The study presents a discussion on the importance of guidance as a basis for quality learning. It also points out the importance of field classes as a didactic tool that motivates and brings the interactor closer to knowledge and also as a facilitator for those who have learning difficulties through conventional means. As a suggestion, a didactic proposal will be presented for planning field activities according to Galperin's Theory of Mental Assimilation by Steps and Concept Formation..

**Keywords**—Action Guiding Base, Engineering Teaching, Field Activity, Galperin, Teaching Plan.

## I. INTRODUCTION

The present work presents an educational, pedagogical and didactic context regarding the importance of field classes in higher education institutions, from a perspective of the Theory of Assimilation of Mental Actions by Stages and Formation of P.Ya Concept. Galperin, proposing a model for preparing field classes.

Conceptually, the field activity, as an instrument that composes the teaching-learning process in higher education institutions, is characterized as a means that promotes the development of new knowledge or the implementation of existing concepts.

In the choice of a given teaching method, it is important to analyze some variants relevant to field activity planning, such as objectives, student set profile, management of available resources and understanding of theoretical concepts.

According to Carvalho (2011), the orientation of the teaching process directed to development and learning is a social action project incorporated into the curricular project, as it outlines information contextualizing students and seeking the development of all. This social project should include a "model" of orientation, structured in the form of a document based on theory and methodology, evaluations, materials and methods in a way that allows

directing the learning process with awareness and planning, and that builds indicators for self-evaluation of the teacher.

The orientation, according to Talizina (1984) cited by Carvalho (2011, p. 89), directs to an objective and its preparation must meet not only the "intellectual, cognoscitivos particularities of psychic activity, but all aspects of human personality".

[...] depends on the quality of the execution. All situations in which, according to the teaching plan, this action must be used, assimilate the set of demands presented to the action to be formed and simultaneously, the set of properties that respond to such requirements and that must be formed (GALPERIN, 2001a, p. 24).

The central idea of Galperin's Theory argues that the assimilation of new knowledge and skills occurs by stages, stages, following a social stage for the individual, as Vigotsky (1987) explains, from the interpsychological plane to the intrapsychological plane.

For Galperin (2001a), during the orientation processes it is possible to analyze an unknown situation, verifying the rational or functional meaning of the objects, analyzing the consequences and revisions of the action, establishing new paths and measuring and controlling the use.

Given the importance of field activities and their preparation, with such a structure that suggests a didactic use in learning and with that, a better appropriation of knowledge within a given objective, the answer to the following question will be suggested:

How to structure an Action Guiding Base, plan and execute a field activity for higher-level industrial training courses based on P. Ya's Theory. Mr. Galperin?

The article proposes a structured didactic model with an Action Guiding Base for higher education teachers, aiming to plan and execute field activities based on Galperin's Theory of Mental Actions and Concept Formation.

But specifically from this article it will be possible to:

- Classify the Theory of Mental Actions and Formation of Concepts of Galperin and exemplify in the preparation of a field class for higher education;
- Plan a didactic based on the Mental Stages by Stages and Formation of Concepts of Galperin, to plan field activities, as a tool to help the teacher.

## II. P. YA. GALPERIN AND THE THEORY OF PLANNED FORMATION OF MENTAL ACTIONS AND CONCEPTS

The orientation is discussed by many authors, with the intention of conceptually defining the importance of quality for the realization of actions and in the assimilation of new knowledge or concepts. According to Carvalho (2011), the orientation of the teaching process directed to the development of learning is an embedded social action project that, consequently, is associated with the curricular project due to its characteristic of schematizing information and contextualization in the students' environment, directed to the development of all.

Considering that the concepts of the various authors are important, the ideas of Fr. Ya Galperin (1979, 2011b) will be used as the main reference for the concept of orientation in this article, according to Carvalho's understanding (2011).

[...] concept of orientation (the one that directs the learning process through), which is the basis for quality learning. Learning conceived as all activity (practical and psychic), resulting from the appropriation of new knowledge (concepts/ skills and habits) by human beings, or the improvement of these by those who possess them [...]. (GALPERIN, 1979 apud CARVALHO, 2011, p. 91).

Piotr Yákovlevich Galperin, (1902-1988), born in Ukraine of the then Soviet Union, was professor of the Chair of Psychology of the Moscow State University

(EMU), emeritus personality of the Sciences of the RSFSR, head of the Chair of Evolutionary Psychology of the Faculty of Psychology of EMU, therefore the socialist ideas defended by that state influenced the studies. The research developed by Galperin was concerned with Learning Psychology in the school context. Soviet Pedagogical Psychology aims at the integral development of the individual, and is based on experimentation as the main research tool (NÚÑEZ; OLIVEIRA, 2013).

According to Reshetova (2004), Galperin's concern was with learning, development and teaching, and also to Leontiev, Vygotsky's studies on the relationship between teaching and development continued, therefore, the basis of Galperin's theory is in the ideas of Leontev (1988) and Vygotsky (2001, 2005), in the formation of the stages, whose individuals have ways to appropriate knowledge (concepts, habits).

For Vygotsky (2005), internalization occurs at the social (interpsychological) level for the individual (intrapyschological) plane. Thus, mental actions begin at the material external plane and are consciously internalized, in order to obtain the formation of skills and at that moment, constitutive at the mental - internal level. Leontev (1988) explains that this relationship with reality occurs through practical and psychic activity.

"If, for Vygotsky, the main question was what to teach, for Galperin, on the other hand, the focus of attention was on the problem of what to teach and how to teach." (STEPANOVA, 2003, p. 78).

In Galperin's theory, he considers mental actions as objective actions that begin with the support of external objects, which are manipulated, go through a series of steps. Then these actions are carried out at the mental level and, finally, become part of the psyche, following parameters of quality and development of intellectuality. The development of the individual's intellectual is related to the increase of the intellect with new, qualitatively superior actions (NÚÑEZ; RAMALHO, 2017).

### 2.1 The teaching model proposed by Galperin

Based on Lev Vygotsky's Historical-Cultural Theory, Galperin (1976), he proposed a teaching model which he called "Teaching through a step-by-step formation of mental actions and concepts", which is based on the constructions of step learning in the formation of mental actions, within certain organized learning schemes, which according to Rezende and Valdes (2006, p. 1211- 1212)

This teaching model does not require the learner to memorize concepts and formulas, due to the opportunity to

experimentally experience the concepts and their applications in the solution of a problem situation.

The teaching model proposed by Galperin develops regions of the brain that had not been worked by the traditional teaching model, such as consciousness and automatic application, because from the teaching model proposed by Galperin the apprentice has the ability to analyze specific relationships and structures according to their context and develops the ability to use the knowledge acquired in other contexts and related situations, rescuing the concepts presented by the guiding basis of the action.

Thus, the learning process follows a path that begins in external materials, following a logical organization to end with the mental and abstract internalization of knowledge, starting from the choice of problem situation, the action guiding base, monitoring of the activity and the remodeling of all stages of the process. The main objective is not centered on learning simple concepts, but mainly learning to use the references that will be guiding in the action.

For Talízina (2009), within Galperin's theory, the formation of mental actions and concepts is supported by three central ideas: the definition of a guidance system, the establishment of a system of parameters or characteristics that define the levels of development of action and the stages of the formation of mental action and concepts, thus the formation of mental actions and concepts is guaranteed in a planned way.

For Nuñez (2009), Galperin's theory is based on the idea that mental actions are based on external objects that will be worked on in several stages and later, these mental actions will be carried out at the mental level, now composing part of the individual's psyche, for this author Galperin's Theory of Mental Stage Assimilation passes through three well-defined moments.

First moment is focused on seeking the proper form of action.

Second moment is centered on finding the material form of representation of the action.

The third moment is to transform this external action into internal.

Within the characteristics of mental actions it is possible to identify two components that have their own well-defined characteristics, the first is the "execution that is associated with the skill level of the individual and is influenced by the conditions imputed to each problem-situation". The second is "orientation", which depends on the subject's intelligence and is influenced by mental concepts available to the individual to assist him in solving a specific problem-situation.

According to Galperin (1989b), mental actions constitute, even implicitly, an objective and material content, thus the material and mental contents belonging to a single process that results in the progressive development of material aspects in mental appropriations, providing formations of concepts in the material form (action) and, later, for a definitive and mental (internal) form, which will always be related to practice.

Galperin (1976, 2001b, 2011a) disclosed that the results of his studies on the assimilation of new concepts at different school levels are, in general, very close to each other, as follows (CARVALHO, 2011):

The concepts will be assimilated in stages, will not be assimilated suddenly, and will happen at different times among apprentices.

In the process of learning new concepts, the indicators of scientific concepts combine with the indicators of non-scientific concepts and these for a long time alter the scientific indicators.

There is a time for the generalization of the concept, happening progressively, becoming totally insufficient in students with learning difficulties.

## 2.2 The subsystems of Galperin's Theory

The Theory of Mental Assimilation by Stages and Formation of Concepts proposed by Galperin organizes the conversion of concepts into mental actions by three indispensable subsystems (GALPERIN, 1976).

- The orientation
- The steps of assimilation
- Qualitative learning indicators (CARVALHO, 2011).

### 2.2.1 The orientation to the quality of learning

The orientation within Galperin's Theory is highlighted, because it is from it that the individual can determine, among other factors, the quality of learning. This stage was initially called the "stage of formation of the previous representation" and then called "Action Guiding Base" – A. G. B, it is in the orientation that the necessary actions to be planned and developed are conditioned, directing the learning and development of students, as stated in its article Types of Orientation and types of formation of actions and concepts. (GALPERIN, 1986)

The Action Guiding Base (AGB) is a guidance system that directs the learning process, through a series of actions that will be put into practice through an activity, the organization of this set of operations should prioritize a realization of a previously established objective.

Carvalho (2011) shows that Galperin's (1982) investigations compact the numerous forms of orientation into only three types, as follows:

When the individual does not come to form an action-guiding image and the investigator cannot help him, this image is incomplete, and the first type of orientation is obtained;

If the same investigator shows the subject the complete guiding basis of the action and requires an intense investigation of the same, the second type of guidance is obtained;

If the subject constructs a complete guiding image, individually, the third type of orientation is obtained in the task (CARVALHO, 2011. p. 109).

The objective of the ActionGuiding Base is to mediate the material part (represented by the execution components) and the mental part of the action (which covers the components of orientation and execution), facilitating the understanding of the problem situation for assertiveness in decision-making based on concepts that seek the ideal solution (GALPERIN, 1989).

Talízina (1984, 2009) states that the action guiding base is organized, according to Galperin's (1986) publications, referencing the following criteria: a) Degree of generalization; b) Character of the work; c); Way of obtaining. Carvalho (2011) organized these characteristics according to Table 1:

Table 1 - Action Guiding Base Types (A.G.B.).

Good Types	Generalized Character	Fullness	Getting Mode
I	Concrete	Incomplete	Independently elaborated
Ii	Concrete	Complete	It is prepared
Iii	Widespread	Complete	Independently elaborated
Iv	Widespread	Complete	It is prepared
V	Widespread	Incomplete	It is prepared
Vi	Widespread	Incomplete	Independently elaborated
Vii	Concrete	Complete	Independently elaborated
Viii	Concrete	Incomplete	It is prepared

Source: Talizina (1984, p. 89 apud CARVALHO, 2011).

The action guiding base is a proposal of schematic action, one can consider it a model of activity that is associated with the conceptual invariant Talizina (1984). According to Nuñez (2009), the invariant comprises a set of situations-problems whose characteristics and actions for solution are similar, so it must share all the structural and functional parts of the activity (orientation, execution, control). The solution of the problem situation, based on the action guiding base, will encourage the cognoscitive part by exercising the outside regarding the execution, but primarily the cognoscitive internal part (TALÍZINA, 1984).

### 2.3 Types of Action Guiding Bases

Galperin (2011a) established eight action guiding bases, however the deepening of investigations and studies limited only three of them, as follows:

#### a) Type I Action Guiding Base

It does not indicate the actions to be performed or indicates incompletely; Uses isolated indicators at the time of orientation; Disabled; It presents difficulty in differentiating the execution activities in the orientation path; Error test; Formation occurs slowly by the path of disordered differentiation.

#### b) Type II Action Guiding Base

The teacher presents a guiding basis for the complete action; It explains their objective interrelationships, the meaning of the support points and the way in which the action is executed; The student, in general, remains scattered and ends up ignoring the guidelines, returned to "trial and error".

#### c) Type III Action Guiding Base

According to Carvalho (2011), it is notably a type of guiding basis for the most complete action, facilitates the formation of the guiding image by the student, from elements provided that allows him to differentiate tasks within an area, this capacity of differentiation presupposes the orientation of the student, according to the author presents the following characteristics

\*In general, comparing with the guiding basis of type II action, the assimilation of tasks happens in less time; \*Change of the learning process and product; \*The action is performed correctly from the beginning of the process \*It is the basis for the Theory of Assimilation by Mental Steps and Formation of Concepts; \*It consists of tasks; The action is formed faster and more easily.

## 2.4 Assimilation steps for the internalization of concepts and skills

According to Talízina (1984) and Galperin (2011a, 2011b), there are 5 stages (motivational; preparation of the guiding basis; material material; external verbal language (others); external verbal language (si); mental), necessary for the assimilation of mental concepts and actions, these steps may eventually have been fulfilled by some students of the same group, due to the individual development of each one and its cultural construction so far (CARVALHO, 2011).

According to Galperin (2011b) it is necessary that teachers have the practical knowledge of the steps proposed in Galperin's Theory of Mental Assimilation by Stages, it is important that teachers at some point have experienced these steps, so that communication is favorable (CARVALHO, 2011).

### a) Motivational step

Initial stage of the process of assimilation of action, for internalization of concepts and skills was elaborated by Galperin (2011b), the following characteristics are found:

There is not even a type of action related to that which is intended to be taught; \*It is not inserting nor a concept; \*The Action Guiding Base, A.G.B.; \*It is a form of preparation of students for assimilation of new concepts and skills; \*Sharpens the sense of curiosity; \*Motivating for the actions that will follow in the following steps; \*It consists of a first communicative moment between the subject and the object; \*At this stage, the ZDP (Nearby Development Zone) is identified; \*Time to perform an initial diagnosis of the ability to be formed; \*Preparation for the next step.

Galperin (2011a) warns that this motivation will manifest itself differently in the group of apprentices, inherent to the individual personality of each one, their cognitive and affective maturity.

### b) Stage of elaboration of the ActionGuiding Base

According to Carvalho (2011), this stage has the following characteristics:

\*The objective of the action, its object and the reference point system are presented to the learners; \*Establishes direct communication of the teacher with the learner; \*Establishes the A.G.B.; \*There is no concern of the learners to assimilate the concepts and the action; \*It is presented to the apprentices, as should be carried out the operations that are part of the action: orientation, execution and control.

### c) Material/materialized step.

Carvalho (2011), puts out that this stage has the following characteristics:

They rely on objects or their own representations to deal with the content of the concept (material/materialized); \*A new quality is added to the object of study; \*In addition the components of the concept; \*Creation of the study card; \*Comply with the action of material/materialized form; \*Realization of the elements of the activity: orientation; implementation; and control of the action; \*Awareness of the learner of their role in learning; \*Availability of step-by-step detailing regarding the task to be performed; \*Control by the teacher and dialogue between student and teacher is already perceived.

### d) External verbal language stage (others)

It is when the learner decries with his own voice the content of the action \*The action goes through generalization, however it remains not automated and not reduced; \*Speech admits a new function; \*At the end of this step the action begins to be performed. Oak (2011)

### e) External verbal step (itself)

Same as the previous stage, however performed in silence internally; \*The action begins to be reduced, automate sanding quickly; \*That's when the action begins its final step inclusion process. Oak (2011)

### f) Mental stage.

\*Use of content internally within your mind; \*Accelerated development of action automation; \*Held in thought; \*Mental action formed. Carvalho (2011),

## 2.5 Qualitative learning indicators.

Qualitative learning indicators are schemes for quantifying the use of learning (CARVALHO, 2011). These qualitative indicators of learning are related by Galperin (2011a, 2011b): a) - Degree of Generalization; b) - Degree of Consciousness; c) - Degree of Independence; d) - Degree of Solidity; e) - Way of Obtaining.

These indicators will be developed by means of tasks, for Nuñez (2009), it is through these tasks are directly related to the qualifying indicators of learning.

2.5.1 Tasks for the formation of the degree of consciousness

For Nuñez and Ramalho (2012) there are two means of forming the degree of consciousness, by the logical conception of the student's structures of the activity he is performing, in addition to the resolution of tasks, but by the reflection of resolution strategies and by the request for written or oral verbalization of the actions he is

developing, forcing the logical translation of actions and concepts.

#### 2.5.2 Tasks for training and updating the degree of independence

It consists of assisting the student in solving problems with different levels of help, to facilitate understanding, for this a commonly used tool are the study cards, Nuñez (2009) and Nuñez and Ramalho (2012). Even with external help, Galperin (2011b) cited by Carvalho (2011, p.124) expresses that "the student uses external verbal language which will provide the internalization of new concepts which is impossible to achieve independence without moving through these stages".

#### 2.5.3 Tasks according to how to obtain

These tasks are presented to solve the situation given, according to the stage of assimilation of the external plan with the help of cards, in the plane of external verbal language with support, that is, the mental plane, which transits in different stages. But the difference is that independence can reach or not as a quality of activity, as Nuñez and Ramalho (2012) argues (CARVALHO, 2011, p. 124).

#### 2.5.4 Final control tasks

According to Nuñez (2009), it has the purpose of diagnosing the development of students, whether in the formation of concepts, or skills related to what was defined in the objectives, to quantify the use of a heuristic dialogue between the participants.

A theory elaborated by Galperin (2011a) was presented here, which is based on Vigotsky's historical-cultural theory (2005), and which is directed to how to work the concepts. Unlike traditional methods Galperin proposes that the assimilation of concepts happens in well-defined stages associated with the resolution of a determined problem situation, as galperin (1976) explains.

### III. A PROPOSAL FOR THE ELABORATION OF FIELD CLASSES IN THE CONTEXT OF THE THEORY OF ASSIMILATION BY MENTAL STAGES

It is the teacher's task to plan and define resources, and to put together a strategy for students to succeed in learning. It is the duty of teachers to know the context of the students in relation to the theme that will be studied, and to value the students' knowledge, in order to awaken credibility and trust among the agents who will participate in the learning process.

The contextualization with the reality of the students must be continued. Among some actions that can be performed by educators are: to announce the content to be worked, dialogue with students about the contents, verify the domain that students already have on the subject, write down their perceptions, listen more to students, transform them into co-signatories of activities and use motivating materials such as movies, slides, music, newspapers, magazines, field classes, among others, to forward the implementation of this step.

For Talízina (1984), a good strategy is the use of a problem situation. The intention is to create a situation that will support teaching, from the resolution of the problem situation.

The next step is the establishment of AGB. It is important that the teacher clearly defines to the students the objectives related to each proposed task. It is at this stage that the teacher works in the classroom the content of the concepts, which will serve as references or support points during the field activity. "It presents to them how the three operations that form part of the action are performed: orientation (directing to the accomplishment of tasks); execution (accomplishment of the task by the students); (monitoring and regulation of the task by the teacher)" (CARVALHO, 2011, p 117).

The third step, the material/materialized, is the field activity itself, is the part of the execution of what you had planned. At this stage, students will perform tasks during the field activity, using as a basis the material references (original product) or materialized (references to the representation of the object). The use of the Action Guiding Base will guide the activities to be performed by students and will serve as a guide between the contents, which are being worked during the activity

In this stage, the elements of the activity are executed: orientation, execution and control of the action, initiating the student's awareness within the learning process.

According to Nuñez and Ramalho (2015), it is necessary that during this stage the teacher performs the control of the actions that were planned. It is already possible to perceive, through dialogues with students, the establishment of an exchange between student and teacher. At this stage, the students' development in verbalizing part of the content of the concepts of the object of study is also perceived (CARVALHO, 2011).

The fourth and fifth stages, within the theory proposed by Galperin, refer to the stages of external verbal language and internal verbal language. This stage, within the proposal of field activity planning, according to Galperin's theory is composing the moment of the post-field, which

comprises a heuristic conversation with the students or presentations of themes related to field activity, so that they are instructed to verbalize what they have experienced.

The last step is mental, in it the concepts are consolidated. It is at this stage that the student begins to use his/her perceptions in the solution of other problem situations internally for himself (CARVALHO, 2011). According to Galperin (1979, p.13): "almost all real

content of the action abandons consciousness, and what you cannot understand correctly unrelated to others." Therefore, it is the product of the Talizina steps (1984).

To illustrate this dynamic of field activity planning, according to Galperin's Theory of Mental Assimilation by Stages, it is proposed in this work that the teacher elaborate a project of teaching-student work in the socio-historical perspective.

Table 2 - Student teaching work project in the historical-cultural perspective.

Planning		Run	Check	Action
Motivational	DRAFTING OF THE GOOD	MATERIAL /MATERIALIZED	Language. VERBAL INT. AND EXT.	Mental
1) Listing of content and objectives; General Objective; Specific Objectives;	1) Definition of reference points for solving the problem situation	1). Teaching and student actions for the construction of knowledge with teacher mediation	1) Definition of the activity of oral exposure by the student of the experience	1) Student intentions. Manifestation of the new practical posture,
2) Daily experience of the content: a) What does the student already know?: vision of totality b) What interests him?	2) Development of a Type III Action Guiding Base	2) Human resources and materials	2) Heuristic Conversation with Students	2) Student actions. New social practice of content.
3) Definition of a problem situation:	4) Dimensioning of the contents to be worked			3) Teacher's self-assessment

Source: Prepared by the author based on Menegolla and Sant'Anna (2001), Carvalho (2011) and Pavani (2013).

The construction of this teaching-student project, from a socio-historical perspective based on the Theory of Assimilation by Mental Stages and Formation of Concepts proposed by Galperin, generated some reflections and the need to present a proposal that would really facilitate the work of teachers in the task of planning field activities, for students, higher education. For this reason, it is important to demonstrate this practice.

As a proposal for planning a field activity, the concepts already mentioned in this work will be used, which are in line with the Theory of Assimilation by Mental Stages and Formation of Concepts proposed by Galperin. For a better visualization of organizational practice, examples of field activity will be used, as follows:

**3.1 Field Activity: Visit to a Wind Farm**

**3.1.1 Motivational Stage**

The motivation of the students, in a field activity to be carried out in a wind farm happens, in part, in a natural way by the simple fact of the displacement to the place and everything that involves an activity carried out in a group outside the walls of higher education institutions.

However, it is still important that the teacher has the ability to expose this type of activity to the students, using texts, videos, newspaper clippings and example cases.

The teacher should remember that this motivation should not be transformed into excitement, even diverting the students' attention from the objective of the activity, (SILVA; CAMPOS, 2015).

Then, a small multidisciplinary Didactic System (SD) should be set up. Figure 1 demonstrates a Didactic System for a visit to a wind farm, observing the simplicity cited by Menegolla and Sant'Anna (2001), planning must be intricately linked to the reality of the teacher, students and

educational institution, leaving aside the "embellishments" that may complicate the execution or understanding of it

Figure 1 defines the problem situations proposed for the visit to a wind farm, according to the general objective previously determined.

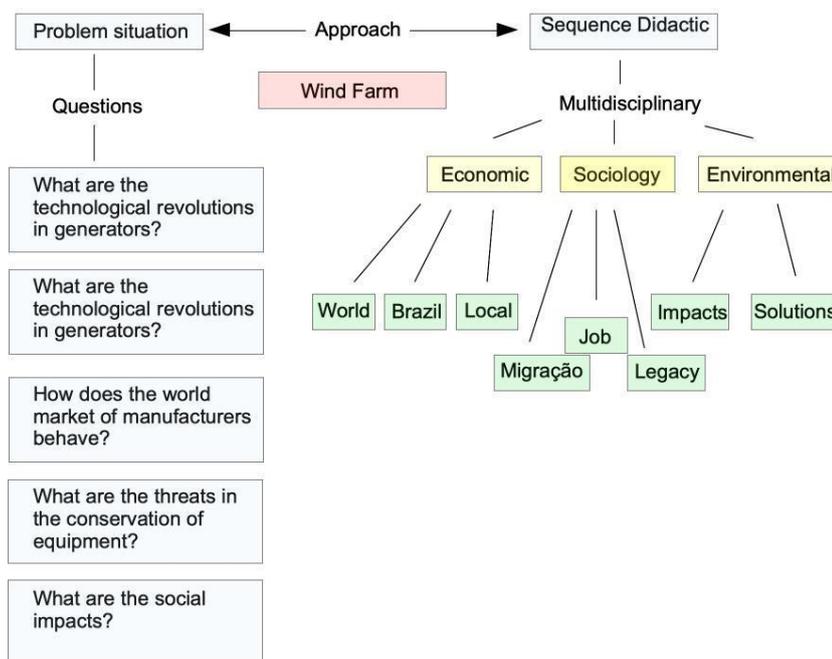


Fig.1 - Multidisciplinary Didactic System

Source: Prepared by the author.

The didactic sequence presented in Chart 3 details all the processes that should compose the planning of a field

activity, observing the "usefulness" according to Menegolla and Sant'Anna (2001)

Table 3 - Didactic sequence for visit in a wind farm.

Title:	Visit to Wind Farm	Reasons:
Target Audience:	Students of higher education of the electrical engineering course.	The didactic sequence should be planned and organized, observing the "usefulness" according to Menegolla and Sant'Anna (2001)
Problem Situation:	What environmental impacts on energy production? How does society behave around a wind farm? What are the market and technological limitations imposed by the world market in the production of wind generators?	Rezende and Valdes (2006, p. 1211-1212)
General Objectives	Identify the main social, economic and environmental impacts involving wind energy production; experience the breadth of this type of investment.	According to Menegolla and Sant'Anna (2001, p. 68)

Class	Duration	Specific objectives	Content	Dynamic	
1	01:30	contextualize, sharpen curiosity, motivate. Present problem situations	Electricity production; Brazilian Energy Matrix; World Energy Matrix; impacts of job and income generation.	Start with the question "where does the energy we are consuming come from?"; texts and video on energy matrix; request research on Brazilian energy development.	According to Galperin's theory corresponds to Motivational Stage, Galperin (2011b); it is the moment of investigation of students' knowledge bases in order to shape actions during the other LUCKESI processes, 2001, p. 108)
2	01:30	Organize landmarks; prepare routines of the visit to the wind farm. Present AGB type III;	Wind energy production and transmission process; Regulatory standard for parks	Submit and comment on requested search results; present the dynamics of wind power production	According to Galperin's theory corresponds to the Establishment Stage of the A.G.B., Galperin (2011b)
3	04:00	Present a working wind farm	Society; economy; transmission network; structure; cabling etc,	Field class in a wind farm; monitoring of students' activities;	According to Galperin's theory corresponds to Materialized Material Stage, Galperin (2011b).
4	01:30	Deliver field lesson reports	Economic, environmental and technological partners	Provide a heuristic conversation of the multiple views among students	According to Galperin's theory corresponds to External and Internal Verbal Stage, Galperin (2011b)

Source: Prepared by the author based on Galperin (1976), Carvalho (2011) and Pavani (2013).

### 3.1.2 Preparation of the Action Guiding Base

The next step, foreseen in Galperin's Theory, is the elaboration of the A.G.B. Action Guiding Base, table 4

presents a suggestion of The Orientation Basis of Action type III, for the activity of visiting a wind farm.

Table 4 - Orientation Basis of Action type III proposed for a visit to a wind farm following the didactics of field activity planning, following the Theory of Assimilation by Mental Stages.

Objective: To visit a wind farm		
Concept Model	Action Model	Control Model
<p>Make a visit to a wind farm observing the indicators of the following problem situations: Technological limitations imposed by the world market; Social impacts; conservation of wind generators.</p>	Economy	What are Energy Auctions
		What is the businessman's network of relationships
		How they are willing and why they have this distribution
		Maintenance
		Location requirements
		Stages of wind farm installation
		Social
	Location	
	Manpower	
	Reflection in Society	
	Negative impacts (	
	Environmental	Applicable Environmental Laws
		Visual impacts
		Sound impacts
	Technical	Type of generators
		Transmission network
		Productive variation in the year
		Production Capacity
		Cabling
		Power of generators
		Transformers

Source: Prepared by the author based on Carvalho (2011).

### 3.1.3 Material/Materialized Step

The next step is the material/materialized. Within the didactic sequence proposed in this work, this stage is contemplated in the third meeting and corresponds to the act of visiting the wind farm.

According to Talízina (1984), the solution of a problem situation using the Action Guiding Base, as a guiding basis in decision-making, will develop the cognoscitive part.

Observations can be made from the moment of displacement to the wind farm, because, in general, it is built in isolated regions, an obligation imposed by law, which preserves sound, visual and environmental harmony.

### 3.1.4 Internal and External Verbal Language Stage

These stages are contemplated in the fourth meeting, whose activities include the delivery of a written report and the presentation of the students' views, referring to the proposed problems situations.

## IV. CONCLUSIONS

This article sought to explain galperin's Theory of Assimilation by Mental Stages and Formation of Concepts, for this, it makes a bibliographic review of the main points of this theory.

The aim of this study was based on the availability of a new perspective in orientation, based on the Theory of Assimilation by Mental Stages and Formation of Concepts of Galperin, which would enable them autonomy in pedagogical practice. Therefore, to be able to aggregate in your school practice implementing your repertoire of knowledge.

It is not intended to impose a new orientation for the action of planning field activities, but rather to suggest a form based on Galperin's theory, which has often been tested in various fields of education and had excellent results.

In this work the concepts of field activity, lesson planning, Galperin's theory, were together in a proposal directing the action to plan field activities according to Galperin's Theory.

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