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THE CONSTRUCTION OF A LEARNING FIELD BASED ON LEWIN'S EQUATION FOR BEHAVIOR

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ABSTRACT: *The term life space (LS) in topological psychology pioneered by Kurt Lewin is characterized by a holistic mode of thinking and attributes human behavior to the interaction between internal psychological space (i.e., the person) and external physical space (i.e., the environment). The internal dynamic mechanism of the whole life space was illustrated based on Lewin's dynamic psychology which reveals the relation between human and environment and an ecological space for the cooperation and development of teaching and learning, that is, a learning field, was constructed with reference to the operation of life space. In the present study, topological analysis was conducted on the mechanism of action between learners' learning behavior and environment in the learning field. Apart from the construction of the learning field, the study also paid attention to some issues closely related to teaching such as the relation between teaching and learning and teaching and learning methods under the framework of learning field. A parallel cooperative teaching-learning relation was proposed and teachers are recommended to design teaching activities that fit the i+1 pattern by making the best of the potential teaching carriers in the physical environment to arouse learners' learning interest, induce their learning motivation, awaken their inner tension system and finally transform their learning behavior. Learners were encouraged to engage in self-directed and experiential learning with the assistance of objects in the environment so as to achieve better learning outcomes and more efficient learning and eventually to form the habit of lifelong learning. The learning field constructed in the study is the fruit of an attempt to apply Lewin's field theory in teaching domain. The significance of such construction lies in getting rid of the thinking model of regarding coursebooks or even teachers as the intermediate to link teaching and learning and taking the psycho-physical dialogue between learners and environment as the starting point to consider and solve teaching problems.*

KEYWORDS: life space, Lewin's equation for behavior, learning field, teaching-learning relation, teaching and learning method.

INTRODUCTION

Lewin's dynamic theory and a holistic way of thinking provide a new perspective for

the study of human behavior, linking together human desires or needs, goals and obstacles needed to overcome, the implications of which have been revealed with its applications in the fields of psychology, communication and pedagogy. However, relevant studies at home are mostly focused on the interpretation of the field theory, and few applied ones are devoted to exploring the role of inner tension or motivation played in personal development. The present study is an attempt to apply the field theory to the analysis of learners' learning behavior.

It is often found in teaching practice that language learning follows the one-line teaching model of phoneme-grammar-vocabulary, which grammaticalizes and fossilizes language learning. Therefore, an ecological environment for language learning is constructed in order to energize the language teaching and learning. In addition, although teacher-directed and learners-centered teaching principles are followed in the teaching process, the interaction between teaching and learning is actually weakened so that coursebooks and even teachers act as the medium to connect teaching and learning, which to some extent calls for the appearance of a new teaching-learning relation.

A dynamic learning field, a unity of psychological and physical environment, is constructed in the present study based on Lewin's formula for behavior $B = f(P, E)$. Such a three-dimensioned space involving the psychological aspects on the part of learners and the physical environment as well as the psycho-physical dialogue is an ecological context in which language teaching and learning becomes more interesting and learner-friendly. Analyzing learners' learning behavior dynamically and topologically, the present study is not only a test of Lewin's field theory in teaching field, but also provides a new perspective for teaching research. In addition, teaching-learning relation and teaching and learning methods are also discussed in a holistic way with the intention of putting forward a new conception of teaching under the framework of learning field, which may be conducive to the achievement of better teaching results and learning outcomes.

Lewin's Equation for Behavior

Life Space and Tension System

Kurt Lewin is wise enough to examine psychological events from a dynamic perspective and to apply the concept of gestalt to the study of human behavior. His equation for behavior, $B = f(P, E)$, reflects that every psychological event (which manifests itself as personal behavior, i.e., B) depends upon the state of the person (P) and at the same time on the environment (E). Such a proposition is directly related to his Field Theory, which is centered around the idea that a person's life space determines

his behavior. Therefore, the equation is also expressed as B = f(LS), where LS refers to the life space. Lewin (1936) further pointed out that an individual's life space is a dynamic space, relying on a dynamical system, i.e., an inner tension system to stimulate the interaction between part spaces that make up the whole life space. Hence life space and tension system are the two key concepts for further understanding and applying Lewin's field theory.

Life space, as what Lewin has suggested in 1936, has to be characterized by a totality of possible events. In this way, every change of the psychological situation of a person means that certain events are now possible (or impossible) which were previously impossible (or possible) (Lewin, 1936). With regard to the definition of life space, it is worth special attention that the possible events contained in life space are psychologically real events, that is, events with properties that determine the causal relationships between or the conditional-genetic characteristics of objects and events (Lewin, 1936). This echoes the dynamic nature of the life space that all events involved are interrelated and interactive. Therefore, from the standpoint of dynamics, life space can be redefined as the total of possible events that have effects on the individual's behavior under consideration.

The next issue to be thought about is how to derive the behavior of the person from the life space based on these psychologically real events. Lewin (1936) made clear several principles needed to be followed: 1) The Principle of Concreteness. As mentioned earlier, events included in life space are those that have real effects on objects. This principle makes clear the premise of that effect, that is, effects can be produced only by what is concrete, i.e., by something that makes up a real part of the life space and which can be given a definite place in the representation of the psychological situation; 2) The Relational Character of Causal Facts. What this principle tries to explain is that an event is always the result of the interaction of several facts, which has a certain connection with a thesis which gestalt theory has done much to develop in cognitive psychology, namely, the effect of a stimulus depends in part upon the nature of the surrounding field; 3) The Principle of Contemporaneity. This principle is a direct consequence of the first principle that only what exists concretely can have effects, which manifests that neither past nor future psychological facts but only the present situation can influence present events, meaning only what is contemporary can be taken into account in the analysis of human behavior. From the standpoint of dynamic psychology and systematic causation, past events cannot influence present events for the reason that they can only have a position in the historical causal chains, whose inter-weavings create the present situation. Following this principle, life space can be seen as the totality of facts which determine the behavior of an individual at a certain moment.

Since life space involves events that affect people, the content of these events becomes what worth exploring. As mentioned above, there are several subspaces inside the total life space, with each part space containing several psychological real events. In general, the content of the life space (more specifically, of psychological real events) roughly consists of the following parts: 1) the physical environment of the individual, for instance the room where the person is and also the house in which the room is, the city, and even the country; 2) social environment of the individual such as his relationships to other persons, his position and personality, and his own place in society; 3) his longings, ambitions, fears, thoughts, ideals, and daydreams, in short everything that from the standpoint of the psychological existence for this person (Lewin, 1935, 1936). For the sake of subsequent discussion, the first two components may be collectively referred to as the physical environment (or physical space) and the third alone as the psychological environment (or psychological space). In this way, the life space can be viewed as the whole of physical and psychological worlds.

From the perspective of dynamics, there is a dynamic system in individuals' life space, which makes the inside subspaces (i.e., psychological space and physical space) interact with each other to maintain the dynamic balance of the whole life space and make it an activated ecological field. Such a dynamic system resides inside the individual, which, in a dynamic sense, is not an entirely homogeneous unity but a highly differentiated object (Lewin, 1935, 1936). Therefore, it is necessary to distinguish within the person a multitude of different regions whose changes of state are to a certain extent independent of each other. The different parts inside a person vary in the degree to which they are related to each other, which means that there are different and competing forces among parts. The dynamic interdependency (Lewin, 1936) of two regions implies that the state of the one is influenced by the state of the other. There is a great variety of influences which can be used to determine the mutual dependency and position of part regions of the person, of which the change of the state of tension cannot be excluded. The existence of dynamic interdependency illustrates that tension varied only in its degree. A difference in tension tends to produce changes in the direction of a leveling of tension. Therefore, it can be said that tension is a state of a region relative to that of another region and it involves certain forces at the boundaries of the region. Lewin (1935,1936) concluded that certain characteristics of the environment, especially the presence of a goal or the tendency to a locomotion, are connected with a state of tension inside the person. The carrying out of a locomotion or the reaching of a goal can at the same time lead to the release of a tension. Therefore, it is reasonable to say that there are different systems in different part regions of the person whose degree of tension can change relatively independently.

Such a conclusion can be drawn from the above statement that person is the collection of groups of tension systems. With regard to the way in which different tension systems are connected, the account of mutual dependency between two systems is of assistance. For instance, if the one system corresponds to a subgoal of a more inclusive goal, the tension of the part system will then usually cease in case the more inclusive system loses its tension.

The Interaction between Person and Environment

Lewin believes that a number of different and competing forces combine to result in the totality of the situation and a single person's behavior may be different in various situations, as he or she is acting partly in response to these differential forces and factors (e.g., the environment, or E) (Lewin, 1935, 1936 & Shen, 1991:306-312). For this reason, the person (i.e., P) must be considered in conjunction with the environment. Lewin concluded that the desires and motivations within the person, the situation in its entirety, and the sum total of all these competing forces, combine to form the life space. Therefore, to seek the cause of certain psychological event, one has to take the relationship between an object and its surroundings into consideration. To quote Lewin (1936), every scientific psychology must take into account whole situations, i.e., the state of both person and environment, which speaks for Lewin's formula for behavior: $B = f(P, E)$.

All representations of psychological life space are based on the fundamental conception of a particular person in a particular environment. The conception of a person in an environment is one of relative position. The person-environment relation implies categories which in some sense can be characterized as special (Lewin, 1935, 1936). The life space is articulated into regions that are qualitatively different from each other and that are separated by more or less pervious boundaries, among which different kinds of locomotion exist.

Since life space is the unity of physical and psychological space, among which the former specifically refers to the environment (E), and the latter represents the person (P) in the life space, what needs to be dealt with is the locomotion of P and E in the life space. According to Lewin (1935,1936), the person himself is free to move about from one region to another in the life space and he is capable of approaching a goal or fleeing from another person. Besides the person there exists in this life space a great number of psychological facts which also share a certain definite spacial relationship. Not only the person himself can move about within the psychological life space but also many of objects in the environment, for instance, other persons, animals, objects of all kinds

apart from the person under investigation. It is a characteristic of psychological locomotions of person or objects in environment that they are directed toward a certain goal or away from a certain region. If such a locomotion is stopped by an impassable barrier, there may exist a tendency or a force in the direction toward this goal, which is defined as valence by Lewin (1935). Specifically, such kind of valence falls into positive-negative pattern: positive valence calls for the completion of the locomotion from one region to another or the achievement of certain goals whereas the negative one plays the opposite role (Lewin, 1935, 1936. & Shen, 1991:306-312).

In conclusion, person and environment are independent systems with their own inner spatial structure. The two systems are at the same time inseparable parts of the whole life space, the mutual dependency and interaction through the force of valence between which maintains the dynamic balance of the whole space. Lewin's formula for behavior $B = f(P, E)$ demonstrates that human behavior depends on the state of the person and that of the environment. In this equation P and E are not independent variables. The structure of the environment and the constellation of forces in it vary with the desires and needs, or in general with the state of the person.

Dynamically the person appears as a stratified system which has a spatial structure and in which different part regions can be distinguished such as inner-personal regions and the motor and perceptual regions (Lewin, 1935, 1936). The motor and perceptual region has the position of a boundary zone between the inner-personal regions and the environment, which works for the interaction between person and environment in the life space.

Needs or other states of the inner-personal regions can influence the environment only by way of bodily expression or a bodily action (Lewin, 1936), that is, by way of a region which is called the motor region. The position of the motor region as an intermediate between the environment and the inner-personal regions holds for purposeful actions as well as for undirected affective discharges of tension, i.e., for all changes of the environment E resulting from the state of the inner-personal region. With regard to the interaction in the opposite direction, namely psychological changes of the inner-personal region resulting from changes of the environment, an intermediate region again plays its role, which corresponds to the perceptual region, that is, to hearing, seeing, etc. What perceptual system perceives in the environment would trigger such corresponding responses as evoking a desire or eliciting certain needs in the person's inner region. In any case the boundary zone between the inner regions and the environment includes both motor and perceptual systems. The interaction between person and environment in the life space embedded in Lewin's field theory can be

illustrated in figure 1.

The outer elliptic curve in the figure represents the whole life space, within which the three ellipses, from left to right, refer to person (P), the inner tension system and the environment (E). Dynamically the person, as a stratified system, can be roughly composed of such two regions as the inner-personal regions and the motor and perceptual regions, among which the latter serve as boundary zone or intermediate region between P and E in the life space. These two interdepended regions inside P also interact with each other, the interaction between which is closely related to that between the intermediate region and the environment. To be specific, the environment directly interacts with the perceptual region of a person, which gives rise to certain sensory action that arouses desires or needs in inner-personal region of an individual. In the form of motivation, the desires or needs act on the inner tension system, which causes person to experience tension. Such tension can be released when it gets a person's attention and the goal directly related to the motivation is achieved, during which valence actively maintains the balance between the goal and the person's behavior. The behavior of an individual, in turn, as an external bodily expression of desires or other states of the inner-personal regions, influences the environment by way of the motor region.

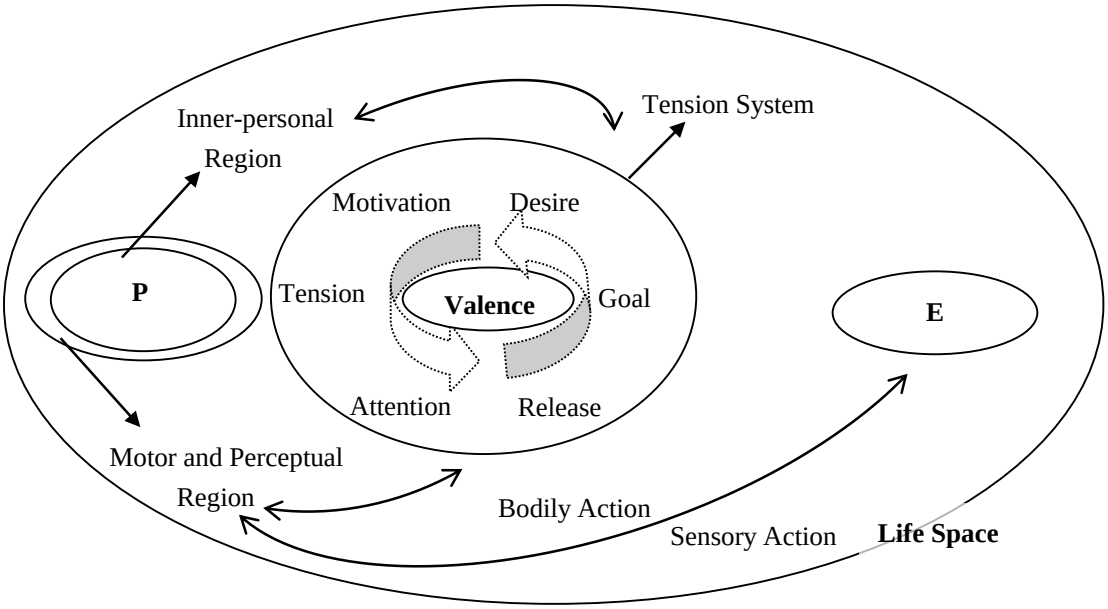

Figure 1. Topological analysis of the interaction between P and E in the life space.

Such conclusion can be drawn that the interaction between P and E within the whole life space always relies on the action of a person, whether they are bodily or sensory,

which are triggered by the tension system inside the person region. Therefore, it can be seen that the inner tension system, a dynamic system, activates the dialogue between P and E and maintains the dynamic balance of the whole life space. In this sense, life space is a psychological field in which human behavior takes place, and the person and environment within the life space are regarded as a dynamic whole in itself.

Lewin's topological psychology reveals the dynamic relationship among person's needs, the goals and the obstacles to overcome to achieve goals, which serves as the basis for studying human behavior and his field theory emphasizes the interaction between person and environment, meaning human behavior is the result of their cognition of the life space. Hence the formula $B = f(P, E)$ contains three layers of meaning: 1) person (P) and environment (E) constitute the whole life space (LS), and E only works when it is combined with the psychological goals of a person; 2) There exist dynamic forces within the life space which demonstrate themselves as either attraction or repulsion. Such forces drive a person to overcome the repulsion and to move along the direction of the attraction toward the goal; 3) such dynamic forces are developed progressively, and the person needs to get over one barrier after another to realize the goal (Lewin, 1936, 1951, & Shen,1990: 39-42).

Such an analysis of human behavior from a dynamical perspective has attracted much attention from fields of pedagogy, psychology and communication. However, the relevant studies are mostly limited to the interpretation of Lewin's field theory and even the few applications are mainly focused on the role of dynamic forces played in personal development. In this paper, learning is regarded as a psychological behavior and a learning field is constructed based on $B = f(P, E)$ to explore the interaction between learners and environment. In addition, some basic issues related to teaching are under discussion and teaching-learning relation and methods with field characteristics are proposed so as to realize the transition from efficient teaching to efficient learning and ultimately to lifelong learning.

The Construction of a Learning Field

Lewin's $B = f(P, E)$ makes clear the dynamic interaction between person and environment. Following Lewin's dynamic psychology and gestalt psychology, this paper, by referring to the concept of life space, intends to construct a learning space or a learning field which is the whole of psychological and physical environment just as the life space is a combination of physical and psychological worlds. In such a learning field, concrete and external objective existence is included in the physical environment and internal and abstract subjective existence is counted in the psychological environment. To be specific, for one specific individual, things outside him, i.e., other

persons and other things, constitute the physical environment and his own psychological and cognitive structure, his thinking methods, life experience and behavioral habits are seen as components of his psychological environment.

In this sense, it can be speculated that education promotes learners' development by stimulating the function of this learning field, and such a function is activated by the interaction or dialogue between person and environment, that is, the operation of the whole learning field depends on the quality of the psycho-physical dialogue.

The Psycho-physical Dialogue

According to Lewin's dynamic psychology, the person and the environment involved in the learning field constructed in the paper are both interrelated and independent. If counted as part components within the field, either the person or the environment can be a dynamic unity, whose internal elements are also involved in the interaction with each other; from the perspective of the whole field, person and environment need cooperate with each other to maintain the dynamic balance of the learning field. However, the person-environment interaction, or the psycho-physical negotiation cannot happen in a vacuum.

The dialogue between person and environment requires both parties to contact with each other by means of a certain activity or behavior. Dynamically the existence of things is the result of different and competing forces within the system (Lewin, 1936). Although the elements of the psychological and physical world are various in kind, the structure and the action principle of these forces are similar. Therefore, it can be speculated that once the force structure of the two worlds combined to form a trend which echoes the two and is bridged by a dynamic medium, the psycho-physical communication is completed. The next issue under discussion is about the nature of this dynamic medium with reference to teaching and learning practices. In terms of the objects involved in the psycho-physical dialogue, one is learners and the other is other persons and things in the environment. Objects in the physical world cannot directly have interactive communication with learners, thus person in the physical environment must engage in this dialogue. In this way, such a psycho-physical negotiation becomes a dialogue between learner and other persons in environment. From a psychological point of view, learners' learning behavior is a result of a series of psychological reactions which cannot be triggered by objects in static environment. Therefore, learners' behavioral changes require certain kind of activation or stimulation (Xing, 2004), which is caused by person in the physical environment. If teaching and learning practices are taken into account, person in environment is actually the group implementing teaching who designs classroom activities according to teaching scheme.

In this sense, such teaching activities are materialized teaching content, which interferes with individual learning in the form of activities and causes the change of learners' learning behavior. Therefore, it is the interaction between the teaching activities designed by the person in environment and the learning behavior of individuals that serves as bridge of psycho-physical negotiation, which causes the resonance of the learning field.

Gestalt of the Learning Field

Following the concept of gestalt and principles in dynamic psychology, this paper replaces the static environment with a dynamic field and portrays it as a learning field, meaning learning occurs in the dialogue between learners and environment and the dialogue is the adaptation between materialized teaching content, i.e., teaching activities, and learners' learning behavior. Either psychological or physical environment included in the whole learning field, as mentioned earlier, is a dynamic system in itself, the component elements within which also dynamically interact with each other. As a result, it is necessary to explore the inner workings of these two subsystems, whose operation is the basis of the dynamic balance of the whole field.

The psychological environment in the learning field constructed in the paper is equivalent in connotation to the person region in the life space designed by Kurt Lewin, inside which a dynamic system exists. Needs or desires or other states of learners give birth to a kind of tension, which subsides as the goal directly related to that needs or desires is reached and increases with the failure to meet that needs. The release or production of tension will be demonstrated through individuals' bodily action, which has influence on the physical environment. The whole process can be explained by the concept of valence put forward by Lewin (1936): the internal needs of the learner is transformed into a drive which guides the individual to realize the goal related to the desire or needs and the force causing such a drive is called valence. In this sense, learners' learning behavior is on one hand attracted by the positive valence of inner needs or tension and on the other hand repelled by the negative valence of the target. Therefore, the valence of the related target increases with the increase in desire, and the increased valence of the goal will in turn further strengthen the degree of desire. Such a desire-valence-goal or needs-valence-target cycle contributes to the dynamic balance of the whole psychological environment. It should be noted that learners' inner needs or desires actually result from the changes in physical environment in which the materialized teaching content in the form of teaching activities triggers the cycle of the psychological environment.

All the things outside a specific person, i.e., other persons and other things, constitute

the physical environment. It has been made clear that the psycho-physical dialogue in essence is a learner-designer interaction, a communication between learners' learning behavior and designers' teaching activities, which means that the physical environment interacts with learners through teaching activities. In this way, person or objects in the physical environment serve for teaching activities, among which one is the designer of teaching activities and the other is the potential carrier of teaching content. Designers need to make full use of the physical objects and condense the teaching content in an appropriate way so that the teaching activities can activate the inner tension system of learners and thus interfere in learners' learning behavior.

The dynamic mechanism within the whole learning field can be illustrated in the figure 2 after the psycho-physical dialogue and the internal operation of the psychological and physical space are clarified. The outer elliptic curve in the figure represents the whole learning field constructed in the present study, within which the three larger ellipses, from left to right, refer to psychological environment, the inner tension system and the physical environment respectively. In this paper, the psychological environment is defined as a psychological space in which learners' own psychological and cognitive structure and their thinking methods, life experience and behavioral habits are included, and things apart from learners, i.e., other persons and other things, constitute the physical environment, within which the person implements teaching and designs teaching activities according to teaching scheme and objects are potential carriers of teaching content. In this sense,

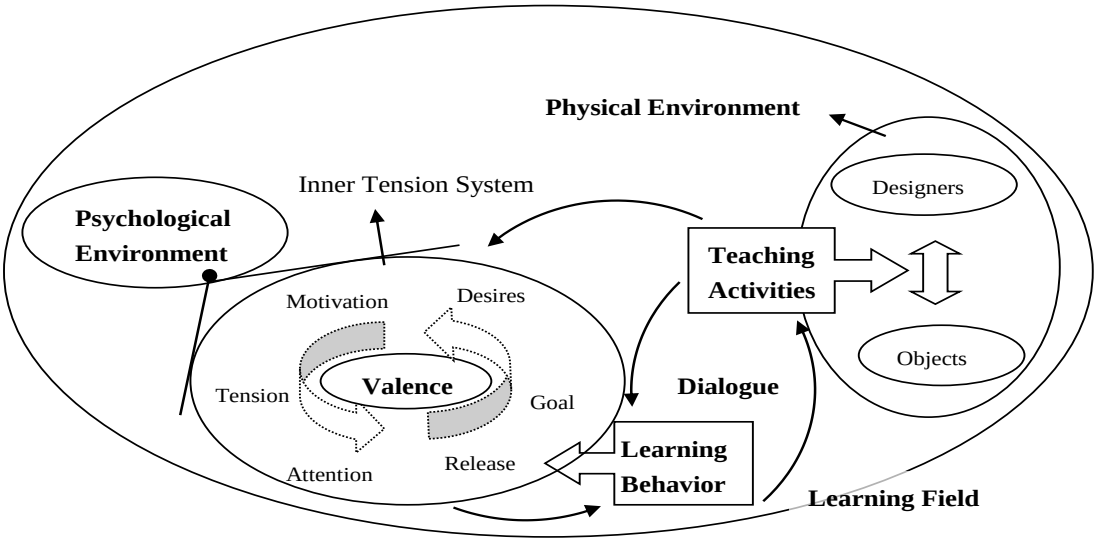

Figure 2. Topological analysis of the interaction between learners and environment in the learning field.

the physical environment is devoted to the production of teaching activities, which interact and interfere with learners' learning behavior. To be specific, such teaching activities, clearly and strongly targeted, always arouse the inner desires or needs of learners, which act on the internal tension system in the form of motivation and further cause learners to experience tension that can be released once the goal closely related to the motivation is reached. During the whole process, valence, the force to lead learners to the goal, serves as a medium to ensure the dynamic balance of the desire-tension-goal-learning behavior cycle, which is to say, learners' learning behavior is on one hand attracted by the positive valence of inner desires or tension and on the other hand repelled by the negative valence of the target. The learning behavior of the learner, in turn, as an external bodily expression of inner desires, influences the physical environment by way of showing where it falls short of the expected learning behavior, which calls for appropriate adjustments to the teaching activities. It can be said that the adaptation and interaction between teaching activities and learning behavior promoted by the inner tension system is the key to the whole psycho-physical negotiation and further activates the whole learning field.

The operation of the whole learning field is based on the dialogue between the materialized teaching content, i.e., teaching activities, and explicit inner desires, i.e., learning behaviors, which is for the reason that static psychological structure requires dynamic tension system to initiate and the internal tension system in turn needs to be induced by the materialized teaching content. According to Lewin (1936), as long as there exist inner desires or needs within the person region, there is a system under tension and the release of such a tension, resulting from the influences of the environment, i.e., the attraction of external goals, provides impetus for psychological behaviors. The so-called materialized teaching content in this paper is actually the outcomes of the task-oriented or goal-drawn teaching that interacts with learners in the form of activities to arouse their internal needs and encourages the bodily expression of their needs.

DISCUSSION

By referring to the concept of gestalt and principles of dynamic and topological psychology, the present study constructs a learning field, a three-dimensional space composed of learners (or psychological environment), the teaching-learning dialogue and designers and objects (physical environment), among which the teaching-learning dialogue is of greater practical significance. Therefore, such basic issues as the relation between learning and teaching and the methods of learning and teaching are under exploration.

Teaching-learning Relation

The relation between teaching and learning, to some extent, affects the teaching results and learning outcomes. Modern teaching research has avoided purely student-centered or teacher-centered teaching idea and adjusted the teaching-learning relationship to a teacher-directed and learner-centered cooperative learning, which takes both the status of students and the function of teachers into account and seems theoretically and logically unassailable.

In the present study, teaching and learning are interdependent and interactive within a dynamic ecological environment, namely, the learning field, in which teaching is related to the objective external environment, i.e., the physical environment and learning is connected with subjective internal environment, i.e., the psychological environment. Teaching activities in the physical environment interact with learners' learning behavior in the psychological environment, connecting the two spaces into a dynamic whole and giving birth to the space for teaching and learning.

It is assumed in the study that teaching practice in nature is a way or means to induce learners' learning. Therefore, in the context of learning field, teaching and learning are essentially the same issue related to the interaction between learners and environment and only varies in the direction of action and the objects involved. To be specific, the direction of teaching is from environment to learners and that of learning is from learners to environment; teaching involves person in physical environment, i.e., the teachers or designers and learning involves person in psychological space, namely, the learners. The relation between teachers and learners is neither a top-down or mentoring relationship nor a primary and secondary relation, that is, either teacher-centered or student-centered, but a parallel relationship sharing the same goal, which is also the ideal teaching-learning relation in the learning field. The parallelism between teaching and learning means that what they try to achieve is the same, that is, to realize the transformation from efficient teaching to efficient learning and finally to lifelong learning.

Such a parallel between teaching and learning serves as the premise of the teaching-learning dialogue and of the psycho-physical negotiation to fully activate the whole learning field and achieve better teaching results. In such kind of relationship, teachers are special learners and need to improve their own teaching practice from the perspective of students or for the sake of learning, while learners are special teachers who test the teaching theory by their own learning processes. The advantage of holding such a parallel relation lies in the fact that if both teachers and learners are engaged in

a dialogue on an equal footing and work to achieve the same goal, the final teaching effect will be as close as possible to the expected teaching results.

In conclusion, the present study intends to build and manage an interpenetrating and inter-integrated totality of psychological and physical environment that promotes common development of teaching and learning. Such a development can be achieved by ensuring the teaching-learning dialogue, that is, the materialized teaching content, in the form of teaching activities, triggers learners' inner desires which express themselves through learning behavior so that the mutual adaptation and cooperation of teaching and learning are achieved.

Teaching and Learning Methods

Under the framework of learning field, the purpose of teaching is for not teaching and that of learning is to learn how to learn; the core of teaching lies in teachers' ingenious design of teaching activities to guide learners to obtain knowledge and that of learning depends on learners' self-study ability to acquire knowledge by themselves with the help of objects in physical environment.

A learning field is constructed to promote the development of learners' psychological structure through a healthy physical environment. Such a development is achieved in the way of psycho-physical negotiation. Therefore, the duty of teachers is to ensure the flow of the dialogue to the maximum extent so that the whole learning field is continuously in a state of activation and capable of giving full play to its effects. To be specific, by making full use of potential carriers of teaching content in physical environment, teachers are required to design teaching activities that would trigger the cycle of desires-tension-target-learning behavior in learners' psychological world. In the whole process, what teachers pursue is the maximization of the positive valence (i.e., the attraction) of inner learning desires and the minimization of negative valence (i.e., the repulsion) of goals to be achieved, meaning teaching activities designed by teachers should be slightly challenging. They contain fulfillable tasks, which indicates that activities should be challenging enough to arouse the internal learning needs of learners to the greatest extent but not too challenging for learners to complete the whole tasks contained in these activities, which, to some extent shares certain resemblance with Krashen's "i+1" principle. That is to say, there are parts of the teaching activities that learners can only complete with the help of others and the role of teachers is to trigger and help learning.

One distinguishing feature of learning field is the attention paid to the role of environmental factors in learning. In this sense, this study advocates experiential

learning on the basis of learning by hand, brain and heart, among which learning by hand is the beginning of learning, and learning by brain is for the cognition of learning, learning by heart is for the comprehension of learning and learning with body is for the experience of learning outcomes. It can be said that these different learning methods represent different stages of learning. Experiential learning is emphasized to help learners go out of the classroom and learn how to acquire knowledge by themselves with the assistance of all objective things including inner mechanisms such as Universal Grammar to ensure learning possibility and implicit and explicit knowledge to arouse learning interest and motivation to make psychological needs manifest through behavior and person in physical environment such the teacher to guide learning direction.

The teaching and learning methods in the learning field is a macroscopic teaching idea, the purpose of which is to arouse teachers' awareness of the influence of environmental factors on learning and to make the best of the physical environment to promote learning. The application of such a teaching idea in teaching practices is not invariable but flexible and varies with the teaching environment and specific learning process.

CONCLUSION

Based on Lewin's equation for behavior, $B = f(P, E)$, a dynamic learning field is constructed which is a three-dimensional space composed of learners (or psychological environment), the psycho-physical dialogue and designers and objects (physical environment). The activation of the whole field depends on the quality of the dialogue between psychological and physical environment, and the impetus of such a psycho-physical negotiation is derived from the inner tension system within learners' psychological space, which is a combination of learners-environment relationship and tension-goal interaction. Following the connotation of learning field, learners' learning in essence is to redesign and reconstruct their inner psychological structure in order to negotiate with real physical structures and teachers' teaching in fact is to activate learners' internal tension system in a proper way (i.e., by means of activities) to induce corresponding learning behavior. In this sense, teaching practice in nature is defined as a way or means to induce learners' learning, and the purpose of teaching is for not teaching but for guiding learners to acquire knowledge by themselves and that of learning is for learning how to learn and how to obtain knowledge independently. It can be seen that teaching and learning share the same goal, that is, to achieve the transformation from efficient teaching to efficient learning and eventually to lifelong learning. In this sense, the teaching-learning relation deviates slightly from the teacher-directed and learner-centered teaching principle advocated by modern teaching research

and moves towards a parallel cooperative relation, in which parallel is the premise for better cooperation to achieve the goal of efficient learning.

The learning field constructed in the study is the application of Lewin's dynamic psychology and field theory in teaching domain, which not only tests the operability of related psychological theory but also enriches teaching theory from a new perspective. In addition, such basic issues of teaching as the teaching-learning relation and methods are also taken into discussion under the framework of learning field. A parallel cooperative teaching-learning relation is proposed to better serve the teaching practice. The design of teaching activities containing performable tasks is recommended for teachers to materialize the teaching content by making the best of potential carriers of teaching in the physical environment so as to achieve better teaching effect. An experiential learning is advocated based on the interaction between learners and environment in the learning field, which encourages learners to acquire knowledge through objects in physical world and experience learning outcomes through bodily sensing.

Such a construction, to be honest, is based on personal understanding of Lewin's field theory and formula $B = f(P, E)$. Due to personal inadequate knowledge reserve and limited cognitive level, there must be imprecise definition and even misinterpretations in terms of the construction process and subsequent discussion: 1) the definition of psychological and physical environment within the learning field needs to be refined. In this paper, the psychological environment is simply equated with the collection of learners' cognitive and psychological structures, thinking modes and behavior habits, while everyone and everything else except learners themselves are included in the physical environment. Such a definition may cause confusion when it comes to specific teaching practices; 2) the teaching and learning methods advocated need to be further proved by teaching practices. The parallel cooperative teaching-learning relation, the teaching method of designing activities containing fulfillable tasks and the experiential learning proposed in the paper are all assumptions, and whether they can hold water is what further research must be devoted to; 3) similarities and differences between the learning process constructed in the study and other learning theories should be pointed out. In the present study, learning is regarded as the result of the interaction between learners and environment, which shows certain similarity to the situational teaching method and constructivist learning theory. Therefore, a comparison between the teaching idea with field characteristic constructed in the study and other learning views should be provided, which is also the concern of the future research.

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