



ORIGINAL PAPER

Using students' different learning styles to enhance classroom interaction

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Abstract:

The aim of our article is to analyze the individual characteristics of learners and to differentiate our teaching methods in order to promote the success of as many students as possible. Taking into account the specificities of each one, it may be possible to reduce the intra-group variance in order to form moderately heterogeneous teams in order to promote the development of interactions between learners which are likely to have a positive effect on the quality of their learning. These different learning styles clearly show that each learner has distinctive characteristics for the appropriation of knowledge. This is why we must admit that learners do not achieve the same performance with the same type of teaching. Considering learning strategies adapted to each style helps the learner to process and to perceive information. The diversification and multiplication of learning activities make it possible, on the one hand, to mobilize resources according to the context, and on the other hand to consolidate and to strengthen learning. The teacher's role is therefore also to construct new pedagogical situations that are sufficiently varied to lead the student towards new developments of his knowledge and especially of himself, as a personality.

Keywords: *learning styles; teaching practices; motivation; teamwork; grouping.*

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Introduction

The quality of learning and academic success directly influence teaching practices. Indeed, the challenges related to the evolution of knowledge, the growing heterogeneity of students, the pressing needs to train a qualified workforce, the rise of technologies requires constant adaptations of educational practices in order to guarantee their quality. However, the teacher alone cannot be held responsible for the success of the targeted learning, his responsibility being defined in terms of resources put in place to ensure learning. The student has therefore an important role to play in terms of academic success. Thus, if it is important to identify teaching practices that promote learning, it is just as important to draw attention to the privileged learning modes.

Teaching is not the same as learning. Teaching styles refer to modalities of didactic communication; learning styles are modalities of problems solving. Learning style and cognitive style are distinct concepts, even though they are often confused. For purists, cognitive style is innate and stable while learning style results from innate and acquired knowledge and can therefore evolve through experience. Learning styles are not the expression of a rigid typology that claims to classify individuals into strict categories (like classic typologies). In fact, they only reflect a particular aspect of the complexity of individuals.

We cannot prioritize learning styles. Just like in the sports field, there is no strict relationship between style and the quality of performance. So there is no such thing as a right way to learn or solve a problem. We are all different, but complementary. Any attempt to „normalize” the intellectual approach of a learner, any attempt to prescribe an ideal and orthodox learning style is a normative fantasy that does not qualify to teach.

For centuries, teachers have classified students according to their grades in exams. For decades, psychologists have classified subjects according to their I.Q. Perhaps it is time to complete these assessments with less prescriptive approaches, less hierarchical, where the promotion of diversity takes precedence over selection through compliance. The research into learning styles might help.

At school, as in a company, the identification of learning styles should enable an optimal use of skills, more effective communication and the constitution of more efficient student groups.

Theoretical perspectives on learning styles

From a social constructivist perspective, the learner builds his knowledge through active interaction with his physical and social environment. In this context, social interactions are essential, and can be the origin of a questioning of the initial representations. However, the variety of learning situations, in which the specificity of the content, of the situations and of language activities occupy a decisive place, has led various authors to consider that the other dimensions of the social, such as the involvement of the subjects in the task, the psycho-emotional aspects, the quality of communication skills, play a role in the efficiency of interactions.

The social constructivist approach of learning does not reject the individual aspect. It is moreover this taking into account of the constitutive dimensions of the individual and of the learning situation that will guide the direction of our research. For this purpose, the learning style corresponds to a constitutive dimension of the learner.

According to Schmeck (1988), a learning style is a predisposition in some students to adopt a particular learning strategy independently of specific requests of the

learning task. The learning style accounts for the regularities in a student's behavior, which are related to the learning achieved by this student.

Operationally, Barbe and Swassing (1979) defined learning style as the relative ability of an individual to achieve an academic task according to the main perceptual modalities. Knowledge of the learning style is not meant to make the learner a prisoner of a label. It allows to design and open up new ways of learning in order, from the student's point of view, to become a more effective learner. For this purpose, knowledge of the learning style can lead to greater self-awareness.

According to Hermann (1990), individuals are attracted to activities that allow them to exercise their preferred brain functioning modes, and their performance at work, as during studies, will be higher if their profile is in line with the content of the tasks requested. The notion of learning style is based on the idea that individuals have different ways of learning, that is to say of perceiving, storing, processing and rendering information, of building a knowledge base. According to studies on the impact of learning styles on academic performance, the learner will achieve a better performance if the learning environment in which he operates is congruent with his style.

The theory of self-determination has gradually established itself in recent years to explain the behavior of individuals in various contexts including that of education. Learning difficulties have long been designed uniquely as resulting from deficits in the intellectual efficiency of learners.

The work of Binet (Binet & Simon, 1916) was intended to identify children who, due to their cognitive deficits, were part of a special education. The individual differences were appreciated according to a unique dimension: mental age. Binet had the intuition of qualitative differences when describing, for example, the different functioning modes of his two daughters, which he never suspected presumably of any debility.

With Piaget's theory (1953), a few decades later, the deficits in the structuring of logical-mathematical thought will be diagnosed as the cause of the learning difficulties. Although it is not a theory of learning, the genetic epistemology of Piaget has had great success in the world of education and training. In particular, it served as a basis for research on social aspects of learning but also for the design of teaching methods intended to raise the operation level of poorly qualified adults.

The study of elementary mental processes, to which was devoted for a long time the research in general cognitive behavior psychology, has resulted in the observation that knowledge of these processes provided little information for explaining the individual differences of performance. Differential psychology, for its part, has focused on studying, beyond individual differences in efficiency, differences in the form that take, in different individuals, their behaviors in the resolution of a problem. This line of research has shown that there are stable inter-individual differences in the way of perceiving and memorizing information, of producing hypotheses, of making a decision. Cognitive styles are the dimensions underlying these observed differences. It's about differences in the form of cognitive functioning because cognitive styles of an individual are in part independent of his level of cognitive efficiency.

David Kolb's description of learning styles is by far the most widely used. Kolb (1984) proposes a theory of learning which is intended to be a synthesis of the work of John Dewey, Kurt Lewin and Jean Piaget. Drawing a parallel between the development of scientific theories and the way in which an individual appropriates a new notion, Kolb proposes a cycle of learning passing through four successive and ordered phases. From a

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concrete experience of the sensitive world, the person will engage in a reflective observation on this experience, which will lead him to an abstract conceptualization (which can be seen as a reorganization of his representations), generating new hypotheses which will be tested during an active experimentation phase, the source of a new concrete experience which thus completes the cycle.

Kolb posited that every learner is characterized by the preference he gives to one of the four phases of the learning cycle. These preferences are evaluated using a questionnaire that positions the individual on two bipolar axes: one constitutes the concrete / abstract dimension and the other the active / reflexive dimension. This positioning in the space defined by these two dimensions allows Kolb to offer four types of learners:

- the divergent (concrete-reflexive), identified by his capacity of imagination and his „emotional intelligence“;
- the convergent (abstract-active), who likes to apply ideas;
- the accomodator (concrete-active), who chooses facts to theory and action to meditation;
- the assimilator (abstract-reflexive), focused on concepts and theories.

Kolb validated his model by studying the distribution of these four types in various groups of students. For example, he finds the majority of students in humanities studies are divergent, while engineering students are more often convergent.

Learning styles research, which dates back to the 1930s, began in Western Europe and the United States and has really taken off over the past five decades. During this period, the density of research work fluctuated, but has experienced a revival for several years, no doubt linked to the trend for cognitive psychology.

In recent years, an individualization of teaching as well as a desire to meet the personal needs of the student have increasingly encouraged the educational community to consider the contribution of the learning style. Defined by Legendre (1988) as modifiable preferential mode via which the subject likes to master a learning process, solve a problem, think or, quite simply, react in a teaching situation, the style makes it possible to identify the modes of access to knowledge that the learner favors in his learning.

Learning styles are diverse and it goes without saying that they can be listed in many ways and be the subject of various studies. Thus, according to Duckwall, Arnold and Hayes (1991), these modes are categorized according to four approaches. The first of these approaches deals with independence or dependence on the field of learning (Witkin, Moore, Goodenough and Cox, 1977). Styles are defined as individual characteristics and reflect a stable preferential mode. The second approach considers the way in which the person acquires and uses information in his learning. The learning style is conceived as being modifiable and as part of a cycle or an experiential learning process (Kolb, 1984; Honey and Mumford, 1986; Magolda, 1989). A third approach studies preferences according to context and learning experiences (Rezler and Rezmovic, 1981). Finally, a fourth approach touches on the affective aspect of learning style and includes concepts such as motivation (Entwistle, Hanley and Hounsell, 1979).

Styles can also be grouped according to three main assessment procedures: direct observation of performance, subject self-observation or rapport, and self-assessment (Lavault, 1992). The first of these procedures involves directly observing a subject performing one or more formal tasks (Witkin, 1977). In a self-observation procedure, it is the subject himself who indicates the frequency of his behaviors

(Lamontagne, Lamontagne and Lamy, 1982), while in a self-assessment procedure, the subject expresses his opinions or judgments by giving his perception of his actions (Kolb, 1984; Honey and Mumford, 1986; Rezler and Rezmovic, 1981).

Teacher's perspective on learning style

From the teacher's point of view, knowledge of students' learning style awakens what he must do to teach them. For example, this knowledge may allow the development of strategies to try to correct what is lacking in the learner's learning process.

When a teacher understands the concept of learning style and applies what he knows to his relationships with students, they are more likely to benefit from their school experience and perform well (Butler, 1987). By providing students with options based on these styles, the teacher can create a supportive atmosphere that maximizes the academic potential of each student.

Indeed, the study of different learners and of their style makes it possible to understand how knowledge of a style improves the achievement of competence in a learning process. The students who would be most successful are those in whom there is an adequacy with the external conditions of learning (proposed pedagogical formulas) and their most marked inclinations to acquire particular knowledge or to develop specific skills. In this sense, it will be a question of harmonizing the teaching formulas with the preferences and characteristics of the student so that the latter has access as surely as possible to the object of learning.

Far from a simple classification where everyone takes note of the category to which they belong to confirm membership and justify resistance, the integration of learning styles promotes the quality of teaching and maximizes learning. Also, by borrowing this approach, we move away from the „classic” reaction of believing that learning styles will help us as educators or researchers to „classify” the students to whom we speak. Far beyond this attribution of labels to learners, an increased knowledge of learning styles should, in our opinion, be used to question and explain preferences and ways of doing that are present in learning and education.

In fact, this leads us to question the benefits and limitations of learning situations inspired by learning styles. In connection, one may wonder about the value of making students with different learning styles interact when performing academic tasks.

Cooperative learning and teamwork

Cooperative learning and teamwork are learning situations that lend themselves well to interaction and, therefore, to the possibility of bringing together different styles of learners.

Teamwork involves bringing students together to get them to accomplish a common task in order to achieve a common goal. Teamwork promotes positive interdependence and individual empowerment, which makes work more efficient and rewarding. Teamwork encourages interactions between students. The environment characterized by trust, respect and the importance of interpersonal relationships promotes risk-taking, transparency, communication and support between students.

The teacher must take special measures to balance the status of the students, to avoid that the interaction is dominated by those with high status and that the others do not withdraw from the task (roles, treatment of multiple skills, attribution of competences). To succeed in the task, students must appeal to the diverse resources of

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all team members. Students who lack speaking skills and those who generally do not enjoy speaking might naturally avoid going with more advanced students who have better speaking skills. Teachers need to consider when it would be best to place students in heterogeneous groups. There is a possible link between students' satisfaction and their perception of learning in multi-level classes. If a student feels that he is learning, he will be satisfied with the activity that helped him learn something. When we group together students of different levels, these students may think that the activity does not target their specific needs. An activity can meet the needs of students of a particular level, while others will be frustrated or bored.

Types of cooperative learning groups

There are several types of grouping possible for teamwork, each of these formulas having its advantages and limitations. We will briefly describe four here: random grouping, affinity grouping, grouping by proximity and teacher-formed grouping.

Random groupings accustom students to working with several other students of different personalities, thus reproducing social work, where teammates are rarely chosen. This type of grouping allows the student to acquire social skills such as tolerance, respect and valuing of differences. Groups can be formed using, for example, colored cards. The teams will then consist of students with cards of the same colour or with different colours. This type of grouping makes it easy to modify the number of students of each team. Indeed, it is a kind of grouping that does not require any affinity criteria. You just have to take into account the number of students in the class.

Grouping by affinities lets students group together as they wish. Certain situations require resorting to this type of grouping. The teacher will use affinity grouping when, for example, a climate of trust and complicity must reign during exchanges, when students are called upon to express feelings or discuss subjects that affect them personally. Students are more comfortable working with those with whom they share common interests, because the motivation and intellectual performance of our students are conditioned by the emotional security that the educational environment provides them, and this is what we want to obtain in a cooperative learning environment.

In teacher-formed grouping, the teacher reserves the right to form teams. This operating rule in cooperative learning must be known by the students and must be previously explained. In fact, the students should know that, for certain activities, it is possible to group together either at random, by proximity, by affinities or by fields of interest. For other assignments, it is rather the teacher who determines the composition of the teams. We therefore inform the students that, for certain activities, the teacher will consider the abilities and aptitudes of each student in order to build effective and productive teams.

It seems that four is the ideal number to form a learning team because it allows, on the one hand, to maximize interactions and on the other hand to guide and monitor all group members. However, teams of two students lend themselves well to exchanges and specific assignments of short duration. Teams of three can sometimes be problematic since there is often a tendency to isolate or ignore the third student. As a general rule, the larger the team is, the more difficult it becomes to lead it.

Students can be given a free hand to choose a subject or a theme that interests them, or they can be asked to choose from among the proposed activities the one they want to prepare. Then they are asked to regroup according to the chosen activity. We

can, of course, first place the students in teams and then invite them to choose together the activity to be prepared. However, it should be noted that the two types of grouping allow different objectives to be achieved. The first respects the personal tendencies of the pupils and arouses their motivation and their commitment. The second allows students to learn to make concessions and introduces them to the practice of consensus, which are high-level skills. The teacher must clearly define the cooperation objectives to be achieved before choosing the type of grouping for a given activity.

Groupings by proximity can be used in a specific stage during the activity, it can be useful to bring two students together for a short time in order to allow them to compare or verify their work, to exchange information and to support each other. The student is asked, for example, to discuss with his neighbour, to give him an explanation. He is then invited to listen carefully to his classmate's explanation. The student can also be told to exchange his copy with his neighbour in order to identify and correct possible mistakes. We can also propose the student to read the text of his neighbour and check if the work is finished and well documented.

In fact, the ideal grouping in cooperative learning must respect a certain heterogeneity. We can then consider variables such as strengths from an academic point of view; the cultural and linguistic diversity or the gender of the students. Personalities or any other considerations that could facilitate the formation of balanced learning teams can also be taken into account. It is therefore very important for the teacher to plan the groupings of the students, keeping in mind the objectives to be achieved, since the grouping supports this objective and has an influence on the quality of the work accomplished.

Positive interdependence and individual responsibility

Positive interdependence is the most important component that can ensure both cooperation and mutual aid within the group. According to Johnson & Johnson (1989) interdependence takes place when students realize that they are related to their teammates and they cannot succeed unless their colleagues succeed and (vice versa). They must coordinate their efforts with those of their teammates to complete an assignment.

There is positive interdependence when the success of a student increases the chances of success of others. Positive interdependence stands out from other forms of relationships between team members, such as independence, which provides a context where the work of one does not affect that of others, or negative interdependence, which occurs when the achievement of a student's goals is only possible if others fail to reach theirs. Unlike other forms of work, positive interdependence maximizes the learning of all members, the sharing of resources, the mutual support and the celebration of common successes.

Closely linked to positive interdependence, individual responsibility constitutes a second component of cooperation. We speak of individual responsibility when students feel responsible for their learning and perceive that their own effort, participation and commitment to the assignment, are essential to achieving the goals set for the team. To improve team cooperation, each member must be aware that he cannot rely on the work of others to succeed in the task. Since the motivation is not the same for all members of a team or of a group, it is necessary to create mechanisms to ensure that each student is encouraged to do his part by maximizing his potential. To achieve this objective, it is necessary that the responsibility of each member of the group be obvious

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and clear (for example, give each member of the group a different colored marker by specifying that all colors must be present in the final product).

Student accountability does not mean that every student should make an equal contribution to that of others, but rather significant and corresponding to his capacities. It is therefore necessary to organize activities that allow students who have not yet mastered certain skills to perform tasks easier, while not neglecting their importance in achieving the common goal. We can also make an appeal to various other means in order to consolidate the meaning of responsibilities such as being observed by the teacher, the appropriate distribution of roles, congratulations and encouragement.

It is also possible to develop a sense of individual responsibility by resorting to formative assessment. By assigning a team score based on individual scores, we can make everyone in the group feel responsible for the performance of the team. The feedback period after each activity, also allows each member group to reflect on his own performance, on his participation as well as that of his teammates, or to know what the others think about it. Knowing that their individual contribution will be judged by others, encourages students to increase their efforts, thereby positively influencing their behavior and their responsible investment.

However, these feedback periods must remain constructive. Finally, the members of a team can, before an activity, write a contract that binds them each other. In this contract, each member agrees to do his part of the work and specifies the behaviors he will adopt to get there. Thus, each student is responsible for his own learning and also responsible for helping teammates achieve the common goals of the group.

Group learning pedagogy gives less importance to the role of the teacher who, by letting the learners participate actively in their own learning, becomes a resource person, a facilitator, an expert, an observer. He is no longer the only person to impart knowledge. He simply offers his help and support to the group members. The teacher's interventions in group learning pedagogy must be limited to bare minimum. It is therefore not necessary to intervene to prevent but to adjust or encourage if necessary. Likewise, learners must be trusted in their own capacities to monitor their learning.

Conclusions

In an oral and situational language teaching, the activities are almost always carried out in teams. Most of the time, these teams are formed on the basis of personal affinities in the classroom. One of the first advantages of teamwork is that it places the student in a climate of emotional security. Learners who work in pairs or in teams can develop the skills necessary to plan, organize, negotiate and reach consensus. Even the beginner learners are able to develop these skills, since they can benefit from collaborative teamwork.

Knowledge of the learning styles of learners, as they are revealed by a self-descriptive questionnaire, can be useful for identifying potential sources of difficulty. Thereby, for example, during a training where the pedagogy is based on group interactions, we can assume that a learner who perceives himself to be little socializing has some risks of feeling uncomfortable, which is sure to have an effect on his performance.

Another example, another individual, with an independent style, will undoubtedly have difficulties in following a very rigidly programmed education. We see all the interest, from a consulting perspective, to identify the styles that a person prefers,

to help him become aware of them and to put these styles in relation to information regarding the characteristics of the formation that the person is considering.

Learning styles are a valuable contribution to the psychoeducational diagnosis, on condition that they are considered as generators of hypotheses as well as other factors and not as the convenient explanation of the difficulties of learners and teachers.

It is undoubtedly reasonable, in the early stages of learning, to ensure that the content to be assimilated is presented to the learner under a shape that suits him best, that is, a form that is congruent with his style. The first phases of learning are often those where the learner must face all the difficulties: lack of familiarity with the content, ignorance of the most effective strategies, making contact with the learning environment, whether physical (premises, equipment) or human (teacher, classmates).

However, learning, especially if it is professional, aims to make the learner capable of adapting to situations that have their own system of constraints. The pedagogy will therefore consist of relying on the vicariousness of styles of learning in order to transfer the learner from his „spontaneous” style to other styles that will prove to be more effective in a professional situation. We should also note the importance of the level of cognitive efficiency in taking into account the pedagogy of learning styles: it has been observed, for example, that students whose intellectual level is rather low need very structured teaching methods while these methods are less effective for rather high level students. The latter succeed better when they are exposed to „liberal” methods.

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