Responding to children's learning styles

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Introduction

Learning styles research has given educators new directions for making changes in their classrooms. The single most widespread change has been to open classrooms to more than one approach to intellectual work. Different social groupings, alternative activities, more complex projects have all been introduced as attempts to create opportunities for students to use their various strengths in dealing with course material.

The purpose of this paper is first, to examine some theoretical principles which are considered essential to ensure success when responding to children's learning styles and second, to illustrate through some learning processes the way those principles can be put into practice in the primary classroom.

The activities I will use to illustrate the way we can respond to children's learning styles were piloted in a public school in Bogotá. It was observed that those processes help children learn language aspects as well as given topics of the primary curriculum.

1. What do we mean by learning styles?

Learning styles research is drawn out of studies about the psychological, social, and physiological dimensions of the educational process. It has yet to be precisely (or singularly) defined. Still, scholarly literature provides a range of working models that can help us deal with some of the mysterious terrain between teacher and learner.

To understand learning style models, we can begin by considering that people rely on personally constructed filters to orient their relationships toward the world. These filters are responsive to a variety of factors: age, experience, maturity, cognition, physiology, and so on. Since no one is capable of switching endlessly between all of these filters, it seems obvious that each individual has a unique approach he or she uses to perceive, understand, and plan his or her interactions. Information theory, for example, explains how the world is rich in information and how people are selective of the information they perceive and believe. Our personal way of selecting can be described as our style. In a very real sense, we create our own personal point of view. Some people may tend to respond to auditory information more sensitively than to other kinds (say, iconic).

Richards and Lockhart (1994) refer to learning styles – also known as cognitive styles - as some of the views learners hold about language learning and language teaching. Cognitive styles have also been defined as characteristic cognitive and physiological behaviours that "serve as relatively stable indicators of how learners perceive, interact with, and respond to the learning environment" (Keefe 1979; cited in Willing 1988: 40). Referring to this definition, Richards and Lockhart (1994: 59) add that "cognitive styles can hence be thought of as predispositions to particular ways of approaching learning and are intimately related to personality types".

As can be seen, cognitive style is usually described as a personality dimension which influences attitudes, values, and social interaction. Cognitive styles refer to the preferred way an individual processes information. Unlike individual differences in abilities which describe peak performance, styles describe a person's typical mode of thinking, remembering or problem solving. Furthermore, styles are usually considered to be bipolar dimensions whereas abilities are unipolar (ranging from zero to a maximum value). Having more of an ability is usually considered beneficial while having a particular cognitive style simply denotes a tendency to behave in a certain manner.

2. Types of learning styles

Underlying learning style research is the belief, verified by some studies, that students learn best when they can address knowledge in ways that they trust. For instance, if their orientation to the world draws theory from concrete experience, then they will learn best through doing rather than reflecting. In fact, we may not ultimately confirm knowledge until we have handled it in modalities we strongly trust.

Auditory learners will learn well through lectures; individual learners will gain knowledge from quiet reading. However, these are only two out of a broad array of preferences found among intellectually capable people. When learning experiences are limited to these modes, students who rely on other styles are bound to be less successful. Limited classrooms are likely to inhibit one or more clusters of students whose preferred styles are not given the opportunity to be used (a problem that may be wrongly attributed to lower ability or motivation).

Various cognitive styles have been identified and studied over the years. The classification that follows is based on Winters (1994) who includes the 'play' element into the learning styles typology. Incorporating the 'play' element adds meaning to the issue of applying learning styles in the primary classroom given the fact that children enjoy learning by playing. In the following sections, most styles will be briefly explained and illustrated through a series of processes that can be carried out in the English classroom.

a. 'Plays with Words' (Auditory)
We start with the child who loves to play with language, to tell stories and read and write. This learner is pretty good at remembering names, places, dates, and similar data. If we give this child an opportunity to hear, see and say words associated with the desired outcome, s/he will, readily, learn practically anything of interest to her /him.

b. 'Plays with Music' (Musical)
This type of learner is always listening to music. This person excels at remembering melody, noticing the rhythms of life, and keeps perfect time. Therefore, this learner gets new information via melodies, musical notation, or rhythm as a critical aspect of the delivery system.

c. 'Plays with Pictures' (Visual)
This learner is one who enjoys drawing, designing, and looking at pictures, slides, videos, and films. This learner is especially proficient at imagining, sensing changes, doing puzzles, and reading charts and maps. Information is best absorbed by visualising, using the 'mind's eye', manipulating (working in some way) with pictures and collages.

d. 'Plays with Movement' (Kinaesthetic)
A learner in motion; touching while talking, and using the body to express ideas. This learner is a dancer, plays sports, and participates in producing a variety of crafts. Learning here has to have a kinetic component; interacting with space in some way so as to process, and remember, the new information through the body.

The following example shows how preschool children can be encouraged to pronounce, associate and internalise vocabulary connected to shapes (Cárdenas: 1999, 18). The rhyme can be developed by integrating procedures that respond to auditory, musical, visual and kinaesthetic learning styles (through movement, constant repetition of words, attention to rhythm, and the use of pictures or puppets holding the corresponding shapes).

Rhyme: Circle, square, triangle

Circle, square,
Triangle, yes!
Clap, clap!
Clap, clap!

Circle, square,
Triangle, yes!
Dance, dance!
Dance, dance!

e. 'Plays Alone' (Individual)
This learner really does better alone, pursuing self-defined interests. This person excels at 'knowing' her/himself, follows instincts with confidence, and is original. New information is absorbed best when the projects are individual, self-paced, and singularly oriented.
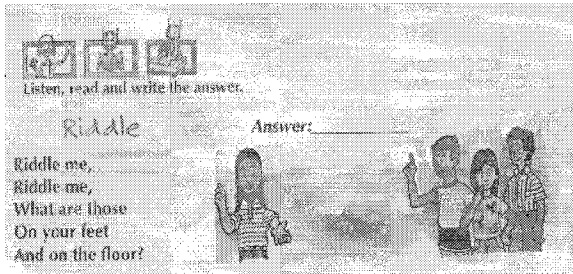
f. 'Plays with Socialising' (Communicative)
Here we have the joiner; the learner who is always with a group of people and talking with friends. Leading others is an obvious skill, along with organising, mediating, communicating and generally understanding people and how to work well with them. We can impart new information to this child by giving opportunities to compare and contrast, interview others with and about information, sharing ideas, and co-operating to accomplish any given task.

g. 'Plays with Questions' (Analytical)
Here is a learner who likes to figure things out by asking questions, exploring, and doing some experimenting. This person is usually good at math, and logic/problem solving. This child learns best when s/he's provided opportunities to classify, categorise, and work with abstractions and their relationship to one another.

In the activity below, we can see the integration of analytical, individual and communicative styles. Children are challenged to test hypotheses while at the same time working at language level by practising given patterns (in this case, prepositions, clothing items and simple present tense). Once they solve the sample, individually or in teams, students can be asked to create their own riddles. Learners can be asked to first work individually inventing a riddle. Then, they can make small groups and take turns reading their riddles to their partners. After that, each group can either create another riddle or choose one of the ones they guessed before. Finally, groups challenge each other in a competition.

Listen, read and write the answer.

Riddle   Answer:_____

Riddle me,
Riddle me,
What are those
On your feet
And on the floor?

(Taken from Cárdenas, De Arce and Duncan: 1999, 16)

3. Using learning styles to teach children: Options for curricular plans

Theoretically, cognitive and learning styles could be used to predict what kind of instructional strategies or methods would be most effective for a given individual and learning task. However, research to date on this problem has not identified many robust relationships.

Despite that, teachers might take different steps to make classrooms more responsive

a. Adding Alternatives

One general strategy that an educator can use to create increased opportunities for students to try different styles is to offer additional alternative activities that supplement or replace traditional ones.

The add-on approach encourages teachers to think of multiple ways to approach the subject and to find ways to create modules that allow different students to find the one most appropriate. We can design multisensory packets comprised of a range of activities that give students a set of options that includes something for the different learning styles. For example, if we want our students to practise expressing measurements, we could guide the whole class to get familiar first with key patterns in a contextualised manner. Then, we could offer students a series of options to choose the one that best suits their preferred learning styles. A menu would look like this:

Options for different learning styles	Activity
Option 1 (For students who play with moving / kinaesthetic and with socialising / communicative)	Form groups of three or four. Move around the classroom and measure four different objects. Get ready to report to the class.
Option 2 (For students who like playing alone with questions / analytical)	Work individually and solve the math problems (a series of math problems are given).
Option 3 (For students who like playing with words and pictures/visual)	Read the tongue-twister and match the pictures. Then, memorise the tongue-twister.
Option 4 (For students who like playing with music / musical)	Read the lyrics of the song and get ready to sing for the whole class.

to student's multiple learning styles. The three levels of instructional strategies that follow offer some overall suggestions of how the curricular plans can be effectively modified to respond to children's learning styles.

Despite the great benefits of adding alternatives, we do have to admit that it is highly demanding on the part of the teacher who would have to figure out alternatives for each learning style around a core topic. Additionally, we should point

out that this alternative sounds great in theory, but not in practice: it is time-consuming and given the load of teachers' work, it is very unlikely that we follow it very often.

b. Learning Cycles

The teacher who wants not only to offer additional opportunities but also to challenge students to develop their learning skills in other learning style preferences can design a systematic set of activities that utilise all learning styles before completing an assignment. This can be done through contract activity packages where activities are arranged to include at least some skills from each of their major learning styles. This model begins by organising the curriculum around central concepts that can serve to integrate a variety of experiences. The following example, taken from Cárdenas (1999, 24-25), illustrates the way we can put into practice this instructional strategy to respond to 6th grade students' learning styles:

Topic: Describing animals

Cycle 1 (auditory and visual styles): Students listen to a passage about sea animals. They read the text and choose the correct picture (see appendix 1).

Cycle 2 (analytical style): Children complete a table with the names of animals corresponding to given categories e.g. mammals, warm-blooded, cold-blooded (see appendix 2).

Cycle 3 (auditory and visual styles): They listen to four poems about some children's favourite animals, read in their books and then say them after the tape (see appendix 3).

Cycle 4 (individual style): Students are given a limited period of time to read the poems again and to find out the names of the animals.

Cycle 5 (individual style): They write the name of their favourite animal. Then, they write some characteristics to describe it.

Cycle 6 (communicative and individual styles): Groups are organised according to kids' preferred animals. They share ideas they bring to the group and then create a poem, a song or a sketch about their favourite animal. Students who do not have partners to work with or who do not want to be in teams, can work individually.

Cycle 7 (auditory and communicative): Studentes share products with the whole class.

As can be seen, the learning cycles alternative is a systematic, program-oriented approach which asks the teacher to go beyond content. In this model we need to organise the course around a model of learning styles that integrates different types of learning activities at each stage of the learning process. Another advantage of this model is that course material becomes structured around themes or problems with the emphasis on how students develop skills using the content. Furthermore, this model allows each student to contribute using his or her preferred style while experiencing other styles.

c. Complex Activities

A third approach to creating multiple learning styles in a course is to organise activities around complex projects. Such projects inevitably demand that students approach a topic with multiple skills. They accept that there are many starting points

and a number of acceptable avenues for successfully completing the activity. When the teacher provides adequate broad terms for the work (terms that permit various social and emotional needs, for example) students can use the approach that best suits them to accomplish the task. Project-based learning, especially when connected to community-service initiatives, provides a typical semester-long, complex activity for students to bring their different preferences together into a co-operative effort. Given the limits of space, I will not refer to project work in detail. Key aspects to applying it can be found in authors like Fried-Booth (1986) and Winters (1994).

Because the wide range of models to applying learning styles concepts in the classroom, the concept of learning styles has gained growing attention from educators because it provides a characterisation sufficiently stable to plan pedagogical strategies. These strategies appear more responsive to students' needs since they seem to provide better learning opportunities. They give fresh direction to alternative teaching and, especially, the three strategies for curricular plans described before are of great help for educators engaged in student-centred practices. Below are listed some general conclusions for teachers that seem to cut across the various models:

- Students will learn better when using preferences in which they are successful.
- Students will be better learners when they can expand their preferences
- When teaching accommodates various preferences, more students will be successful.
- Teachers can construct activities that include specific (and multiple) learning preferences.

This can be done by adding alternatives or completing learning cycles that incorporate all styles or by utilising holistic, complex tasks.

Conclusions

The aim of learning style research is to find clusters of people who use similar patterns for perceiving and interpreting situations. Based on this information, we should be able to adjust educational environments to make them more efficient and successful. The examples we have given show how learning style theory can help us rethink our approach to the classroom. Using learning styles to teach children allows us to develop educational settings that broaden the chances for more students to succeed.

We have emphasised that there are many different learning styles. Identifying our preferred learning style leads to *metacognition* or self-awareness. There is no right or wrong learning style. Although we may prefer one style over another, preferences develop like muscles: the more they are used, the stronger they become. This is of paramount importance since successful students have flexible and integrated learning styles.

Finally, I would like to point out that one consequence of studying learning styles is the recognition that as teachers, we also have our own approaches to the classroom. While these may have become habitual and while we may define the classroom according to our (not student) preferences, we have to acknowledge that our styles will not necessarily suit clusters of students in their classroom. As we attempt to modify our classrooms, we need to begin by exploring our own styles.

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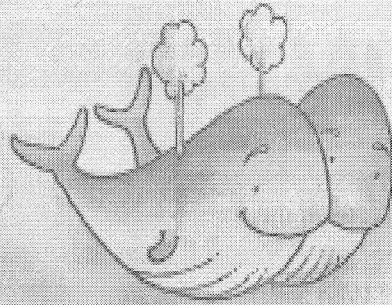
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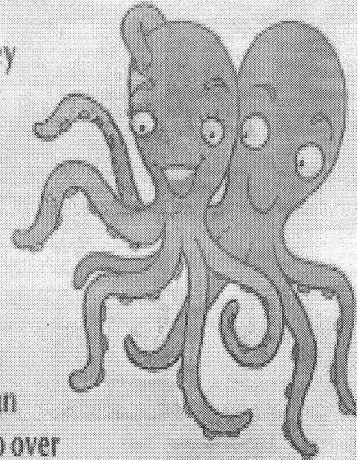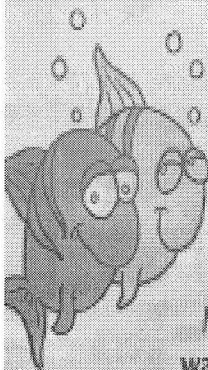
Appendix 1 *(Taken from Cárdenas: 1999, 24)*
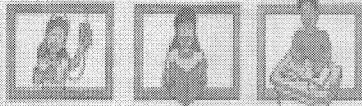
Listen, read and choose the correct picture.

These are intelligent mammals. They breathe air and their blood is warm. They have a pointed beak and a prominent dorsal fin. Their teeth are sharp. These animals don't have molars and incisors.

There are 31 species of these animals. Most of these animals live in Australian waters. The biggest of these animals grows to over 4 meters and can weigh over 650 kg. The smallest is about 1.5 meters long and weighs 60 kg.

They can see well both in and out of the water. They use sounds to communicate. They can hear sounds as high as 150 kilohertz.
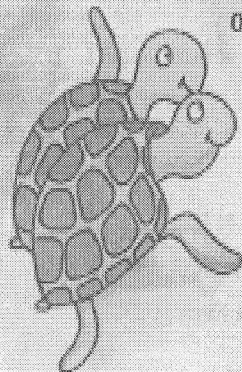
Which animals are they? _____

Appendix 2 *(Taken from Cárdenas: 1999, 24)*

Complete the table with the names of animals.

Animals					
Mammals	Warm-blooded	Cold-blooded	Fins	Beak	Sharp teeth

Appendix 3 *(Taken from Cárdenas: 1999, 25)*

Listen, read and say the poems.

My favorite animal

A

White and gray friend
How big and intelligent
you are!
Agile queen of the sea.
Live many, many years.
Everybody admires you!

B

Friendly, small and agile.
Run and jump very fast.
Oh no! You aren't ugly.
Green friend, jump, jump, jump!

C

Here is my favorite animal.
Oh, my friend!
Run, run with me.
Strong and brave.
Elegant too. You're great!

D

My favorite animal
is happy and strong.
I like it a lot.
It is the dog.