A comparative study of educational strategy between China and the West from the perspective of differentiated instruction

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Abstract. Nowadays, the reasons for the educational differences between China and the Western countries are mainly divided into three levels --- family, school, and individual. And all three of these levels can be attributed to cultural differences. Differentiated instruction (DI) is an important method to respect the individual differences of learners and promote personalized teaching. Through the analysis and research of literature related to DI in China and the West, combined with the conversational analysis of classroom cases, this article summarizes the advantages and disadvantages of DI. DI is a student-oriented teaching strategy that can help students more specifically improve their knowledge and abilities. In addition, because every student is different, it is very difficult to implement DI for each student. The article also shows the importance and necessity of implementing differentiated teaching in education.

Keywords: Chinese and Western Education; Differentiated Instruction; Cultural Differences; Group Teaching; Conversation Analysis.

1. Introduction

The purpose of education is to equip people with the ability to learn themselves throughout their lives and become a person who is needed by society. At the same time, education is also to make people understand the responsibilities and obligations of human society. However, the material and spiritual life of people in different countries has created different cultures, which has contributed to differences in education between countries. Therefore, under the influence of cultural background, some scholars consider the differences in student’s learning styles, some consider the differences in family education, and some consider the differences in teachers' teaching habits.

Nevertheless, it is worth noting that there are few kinds of literature focusing on the differences and outcomes of the methods used by teachers in the East and the West in implementing DI to help students learn better. DI is a talent training teaching activity organized according to the different interest orientations and talent differences. Through such activities, teachers purposefully, planned and organized guide students to learn, promote the rapid improvement of students’ special talents, and make them professionals needed by society actively and consciously. And teachers should focus on the student’s recent development area, providing students with difficult content, mobilize students' enthusiasm, develop their potential, go beyond their recent development area to reach the level of the next stage of development, and then carry out the development of the next development area on this basis.

Although DI is often discussed in the respective education of the East and the West, there is not much to refer to in the comparison of the two areas. Therefore, this article will look at the differences between Chinese and Western education to see how teachers can let students learn better through the DI strategy.

2. Educational differences in the context of culture

2.1 The difference from the aspect of school education

Depending on Ning Liu and Birgit Jana Neuhaus, teachers in different countries have different teaching habits because of different cultures [1]. Through quantitative and qualitative analysis of some experiments, they found that there were more real-life examples of low-order teacher problems...
after learning related concepts in Chinese lessons than in German lessons. German teachers instructed students to analyze the reasoning process of Landsteiner's experiment, while Chinese teachers did not do so. According to the research conclusions, Chinese biology teachers' pay more attention to the learning content and the application of content in real life; German biology teachers put more emphasis on stimulating students' reasoning and divergent thinking. This difference reflects the differences in the cultures of the two countries, one is confusion philosophy, and the other is continental philosophy.

In addition, Xia Li, Liping Chi, Mary DeBey and Arthur J. Baroody provided a qualitative and quantitative analysis of the results was also carried out through questionnaire surveys [2]. The final experimental conclusion showed that the American teachers were relatively less careful because most of them did not set any goals for mathematics and did not use any courses or resources. However, preschool mathematics in the United States seems to be very broad, and less concentrated, and there are no obvious age group differences, which means that American teachers need to study this age group difference more than Chinese teachers. In addition, some emerging curriculums are the mainstream method for 3- and 4-year-old children in the United States, but Chinese teachers are reforming this aspect, and now they also combine teaching with the environment and daily activities.

2.2 Difference from the aspect of individual

Troy, Mark, Parikshit and Arthur mainly examine the differences in the learning styles of Chinese and Australian business students, proving that different teaching options for different students are required in the globalized learning process [3]. This article proves that students from both countries are visual learners, while the difference is that the more obvious weaknesses of Chinese students are intuition and language skills, so they are more likely to become global learners, less proactive and less intuitive.

Depending on the research of Frances, Bland, Anna and Helen some engineering and social science students were organized from Malaysia and the UK to see if the way students chose to study would be different despite coming from different countries but with the same university subject background [4]. After using the Method of The Memletics Learning Styles Quiz, the results show that engineering students have a significantly stronger preference for logical learning styles than visual, oral, auditory, physical or individual learning styles, and visual learning styles are superior to oral and auditory learning styles. The social science background has a significantly stronger preference for social learning styles than a logical learning style. In addition, a comparison of the learning style preferences of the UK and Malaysian engineering students shows that the preferences of UK students are stronger suited to logical and social learning styles, and in Malaysians to a solitary learning style.

2.3 Difference from the aspect of family

Yuan Lina indicated that through the background of reality TV shows and TV series, through the comparison of Chinese and American family education, the difference between theory and practice is found: theoretically, the use of rational and perceptual family education in the United States can strengthen the theoretical guidance of parents on family education and the progress of China's family education concept [5]. In practice, the theory has been put into practice, and the transformation of Chinese family education from "stick education" to "school-based education" has been realized. The article emphasizes the differences in family education, and also suggests that China can learn from the experience of family education in the United States and improve the traditional family education model and concept in China, and the two sides can learn from each other's strong points.

Liu Dandan and Hong Yijiang also did some research on the theme of family education, the book "Battle Hymn of The Tiger Mother " is used as a case to explore the differences between China and the United States’ family education and analyze the reasons, including the purpose, method, and results [6]. Meanwhile, the causes are also summarized, which are values and historical background, traditional culture, and socio-economic conditions. Finally, they gave some suggestions: improving the comprehensive quality of parents, vigorously promoting quality education; the whole society
should actively inherit and carry forward the cultural and educational traditions; the whole society should jointly create a free, democratic and harmonious spiritual space, and create a cultural atmosphere of respect for personality and development of personality.

3. The difference between Chinese and Western DI

3.1 The Analysis of Western DI

The majority of studies indicated that there are many barriers to the implementation of DI. For example, Cheruta Wertheim and Yona Leyser organize 191 pre-teachers to respond to a modified form of the Teacher Efficacy Scale and a 59-item instructional strategies scale [7]. Findings reveal that teachers who teach younger students are more likely to use DI, but they still prefer to modify all students and are less willing to use differentiated instruction.

Similarly, Paul S. George also illustrates teachers are willing to continue the traditional teaching model, even though it is not known whether this is the right way [8]. In addition, he indicated that teachers rarely have time, energy or support to make changes. Nevertheless, the author believes that the importance of implementing DI, because only by doing that can American public schools achieve the traditional core, which is heterogeneous classrooms, and then can do a good job in the democratic democracy advocated by the United States.

Carol Ann Tomlinson offers a new perspective, which is that students react to dislike because the level of learning is different but in the same classroom [9]. And he believes that achieving DI requires school administrators to help teachers clear the barriers to the implementation process, so that teachers can provide schools with the motivation to DI. Wouter Smets, Debbie De Neve and Katrien Struyven also argue that teachers struggled in assessing students’ differences [10]. Moreover, teachers’ responsivity appeared to be determined not only by cognitive traits but also by other types of individual differences.

Ruthanne Tobin and Christine D. Tippett move forward to conclude the possibilities and potential barriers of DI implementation [11]. Findings revealed eight themes about the possibility and potential barriers: Possibilities included pedagogical perspectives, positive student responses, multimodal representations, and student responsibility for learning. Potential barriers included fears and insecurities, constraints, and misconstrued messages.

The above research reflects the difficulties of DI. Although some of the solutions are proposed, they only stay at the theoretical level. Vicki Park and Amanda Dathow narrow solutions into data [12]. By increasing data reference, grouping and DI can be more realized from an objective point of view. The result shows that teachers will make group decisions and make group decisions based on students’ performance, course themes, knowledge, skills and other factors. In this process, the use of data also clearly informs the logic of teachers about differentiated decisions.

A case study has been discussed in the flowing part to understand the application of DI in the Western in more detail

- Methodology
  - Design-based research project goals
  - ESL student’s vocabulary learning
  - Social interaction around differentiated instruction

- Setting
  - this article analyzed an online video and did a case study of the educational phenomenon, using conversation analysis as the data analysis methodology;

Cut1: The teacher introduces at the beginning of the video how she achieves differentiated instruction based on students’ responses by asking certain specific questions. She introduces the rules and requirements in this part before asking the students to read in groups.

Cut2: In this following ESL class, the teacher divided students into several groups to answer questions regarding an article. In the process of answering questions, the teacher guides consciously to help students better understand the knowledge.
Data sources
- Video recording
- Multiple cameras to capture the teacher and students’ body language

This video background is an ESL class, the teacher found that grouping activities during learning can greatly improve efficiency and flexibility and can better educate different students according to the different knowledge they learned. When grouping students, she also considers not only their instructional needs but their emotional and personal needs as well. I chose two cuts of the video to analyze how teachers implement DI.

17:44~19:22, 1:38 for total & 22:50~24:33, 1:43 for total
Original: https://youtu.be/wvT0m8g5k1A
Cut1: https://youtu.be/6mWqtmsHh6I
Cut2: https://youtu.be/rE2MnARoV-M

Cut1:
[[ The teacher introduces at the beginning of the video how she achieves differentiated instruction based on students' responses by asking certain specific questions. She introduces the rules and requirements in this part before asking the students to read in groups. 

TEA = “teacher”; ST1 = “student 1”; ST2 = “student 2”; STS = “students” ]]

TEA: Okay, I'm going to be assigning team points, based on (0.7) discussion, based on (0.7) how well you're talking, So: if you're using nice voices when you talk. Okay, let me ask you something.

TEA: We have been doing our team talk questions this week. Kind of in the way that we practice with the (comic) story, Where: (0.5) I:: say::: okay, let's take (0.2) three minutes to discuss and now two minutes to write.

TEA: How we do it structured, or do you like it better (0.1) to where your team can just move at your own pace.

TEA: I want you to think about that because I want you to decide how we're gonna do it today.

TEA: [Think about it, you know how we're gonna do it, ]

[([ The teacher pointed her fingers at her head and gestured to let the students think seriously ))

TEA: Think about it, think about it you might even wanna just (0.7) give yourself a little ^poke. Just to make sure that you're really thinking about it.

TEA: Okay. (0.3) Give me a thumbs up if you want to do it. The same way we've been doing it be^fore, yester^day, where I give you the structure,

TEA: Or would you like to do it more independently, (0.1) with your teams where you team move at their own pace.

TEA: Give me a thumbs up if [you

ST1: ]

[([keep coughing loudly)]

TEA: want to do it how we did it yesterday.

TEA: [Give me a thumbs up, if you want to do how we
did it yesterday.

STS: [(( Few people gave thumbs up))]
TEA: Give me a thumbs up if you want to move at
your own: team: [pace:
STS: [((More people gave thumbs up, and student who
had coughed stopped coughing))]
TEA: Okay. So if we’re moving at our own team pace,
let me just say this (0.2) I want you to focus
on writing your answers, right? (0.2)
ST2: Yeah.=
TEA: =Yeah? Yeah?
TEA: But you're really gonna need to (0.1) have
some super discussion. So you can write your
super answers okay?
TEA: All right, readers, let's go.

The teacher adjusts the teaching strategies in the classroom, devolves the power to the students,
gives the students a certain degree of freedom and choice, and determines the next stage of the
classroom through the students' feedback. For example, in the video, when most people solve the
problem in their own way through group discussion, The teacher agrees and starts to implement a
typical differentiated classroom. This will enable teachers to better understand students' preferences
so that teachers can make arrangements suitable for students in future classes. It will also make
students feel that this is the way they choose to prefer so that they are more willing to obey the
arrangement of the teacher and improve the participation of students in future discussions. At the
same time, it also makes students become the dominators of their classrooms. They decide how to
learn the knowledge behind them and what methods to solve the problems in the classroom. It is more
convenient for students to find and implement their learning methods. In addition, at this time, the
teacher can only communicate according to the different needs of each group member and can observe
whether each group and group member prefers self-study or needs the assistance of the teacher to
decide the time to stay next to each group and member.

Cut2:

[[ In this following ESL class, the teacher divided students into several groups to answer questions
regarding an article.

TEA = “teacher”; ST1 = “student 1”, a black boy in dark blue; ST2 = “student 2”, a black girl in
white; ST3 = “student 3”, a black boy in white; ST4 = “student 4”, a white boy in white; ST5 =
“student 5”, a black boy named Lucas in dark blue; ST6 = “student 6”, a white girl in white”; STS =
“students”]]

[[ TEA and Group 1 (ST1 & ST2) ]]
ST1: About (0.2) they (0.2) can not find the
(boo’).
TEA: O’kay?:?
ST1: And they ( ) twenty-two.
TEA: Okay. So you’re identifying two different
problems here. Here’s what I want to think
about. (0.1) To, to decide between those Two,
(0.2) who: are the more important characters
of the story? Do you think the trio is more
important? (0.1) or do you think Hotsnot is
more important.

ST2: The Tri[o.
ST1: [The trio,
TEA: Does that help you make a decision?
ST1: Yes.
TEA: Okay, good, good.
[[TEA and Group 2 (ST3)]]
TEA: Nice, so you notice what it didn’t say.

((0.2) First-
ST3: [And right here, it’s uhm::(2.0) it: is: said
tha’ uhm: there was no book:](0.2)
(no…)
TEA: [E.xa::ctly. Yes. Yes.
[[TEA and Group 3 (ST4)]]
TEA: So are we supposed to like this guy:? [Hotsnot:?]
ST4: [No,no,no,[no,
TEA: [You don’t think so? Wh^y?
ST4: Because he ( off). He tri’ to take over the
world,=
TEA: =Okay. Show me where does it say. (0.1) Show
me. (0.2)
Show me the words that make you think
Hotsnot(0.1) not a good guy::
ST4: (He was to himself. )
TEA: Um:: Hey, good. Find it. I want you to show
your team those words.
ST4: Let’s see. it’s over here:. °

[[TEA and Group 4 (ST5 & ST6)]]
TEA: So here’s an insulting man. Lucas, can you
find him in that picture?
ST5: Uh: right there,
TEA: Is he an attractive man?
ST5: ^No.=
TEA: =Is he good looking?
ST5: No. hh
TEA: Is he, you know nice looking?=
ST5: =(He looks like)take a mud bath.=
TEA: =So he looks:, he looks a little evil,
r^ight?
ST5: Ye[ah.
ST6: [Yeah.=
TEA: =Uh:, Can those be cl[ues: to show you
(whether that was special like him?)
ST5: (0.2) (he’ve )
[And (0.2) here
(0.2) (he’s up to [(no good).
TEA: [Exactly. So all you (argue) with up to no
good. Those are very: good words. Can you
put those words (0.1) in your own words
(0.1) when you write your answer.
after agreeing with the views of the student4, the teacher said, "I hope you can show these words to your team members". Then, student4 turns around and says, "let's see. It's over here," to other team members. This reflects one of the advantages of group discussion: it allows members to complement each other according to their known information. Because everyone has different ideas, we will likely look at problems from different perspectives.

Then sometimes, students will ignore some problems, but after listening to the views of other students in the group discussion, they will find more ways to think about issues to fill their thinking holes. Moreover, because they are far away from their students' lives, teachers may forget what difficulties they need to focus on when they first learn this knowledge. But the students who have just learned but have strong learning ability will know what they students lack or where the difficulties are. This will make it easier for students who do not understand. In addition, we can also see that while students with lower learning abilities make profits, students with higher learning abilities and complete knowledge can learn more from them. Group discussion allows some students to be teachers so that they can consolidate their knowledge and improve their communication potential. Moreover, this will make up for the defect that teachers do not have enough time to know about every student so that every student has a higher chance to learn the knowledge. Finally, as tutors, we should pay attention to the need to guide students because students are sometimes shy or have no sense of sharing, so teachers should play an organizational role in teaching students to communicate and learn.

3.2 The Analysis of Chinese DI

The most popular theory of DI in China is based on individual teaching, and because of the late start, the DI began to develop after the promulgation of relevant laws requiring attention to individual differences [13]. During this period, most of the practices in China still draw on the advantages of the Western DI and gradually visualize hierarchical teaching. And most studies are oriented in a similar direction.

In the process of implementation, many problems were encountered like the Western. For example, depending on MA Susu and Yang Jiaqin, there are three problems in hierarchical teaching, which are inappropriate basis, improper teaching strategy, and unscientific assessment [14]. and they concluded that teachers could combine ZPD to propose reasonable and diversified hierarchical teaching strategies.

Zhang Xuebo and Lin Shubing focus on the data to help the implementation of DI, which is as same as Vicki Park and Amanda Dathow [15]. The findings revealed that using data can help teachers follow the basic logic of moving from experience and intuition to norms and objectivity in the process of screening, standard presetting, value judgment, and rulemaking, and try to exclude the influence of their subjective biases.

4. Conclusion

In general, there is little literature to refer to on the specific implementation methods of DI, because there are too many uncertainties in the implementation process, and it is difficult to have a unified directional approach, so the current main research direction is still learning how to practice DI.

The research content of DI in China is relatively scattered and has not formed a systematic theoretical framework. The way to achieve it is more from the perspective of educational resource allocation, and then specific to hierarchical education. The disadvantages of this method are obvious --- it is not only unfair for rural students, but also easy to make education utilitarian, which makes it more difficult to implement differentiated teaching, because of the characteristics of China's test-taking education.

The Western country implements DI with a more specific classroom model. Teachers can translate their ideas into practice, apply them to the classroom, and explore DI through different strategies. However, the research on the cultivation of the DI implementation ability of in-service teachers in
Western countries and the implementation guarantee of in-service teachers in teaching decision-making is also relatively weak.

The purpose of education is to achieve the progress of all mankind, so the realization of DI contributes to the realization of this goal. At the same time, it also contributes to the realization of a fair and harmonious society.

References


