



Challenges to Adopt Differentiated Instruction in Higher Education in Hong Kong

Allison Wong^{a*} and Thomas Y. H. Chan^a

^a Caritas Institution of Higher Education, Hong Kong SAR.

Authors' contributions

This work was carried out in collaboration between both authors. Author TYHC designed the cooperative research and oversaw the publication progress. Author AW manages literature search, drafts the paper and synthesises the research findings. Both authors have read and approved the final manuscript.

Article Information

Open Peer Review History:

This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: <https://www.sdiarticle5.com/review-history/97953>

Opinion Article

Received: 25/01/2023

Accepted: 27/03/2023

Published: 01/04/2023

ABSTRACT

Aims: This paper aims to discuss the challenges and problems faced by teachers in adopting differentiated instruction (DI) at the higher education level in Hong Kong and to address them.

Methodology: The opinion presented in this paper is based on the results of an action research conducted in 2022 and a review of previous research studies in this area. The major problems in implementing DI at the higher education level in Hong Kong are synthesized, and both qualitative and quantitative data from the action research have reflected the challenges in engaging both students and teachers by adopting a student-centred learning approach. The paper synthesizes the fruit of the research to share a deeper understanding of these challenges at a practical level for discussing and exploring the consistent findings across the research study to develop a feasible training program for teachers for professional development.

Results: The paper suggests a long-term cooperation between teaching, research, administrative, and department staff to help overcome the challenges of DI and reinforce it in Hong Kong. It proposes a cooperative research opportunity as an effective strategy for the professional

*Corresponding author: E-mail: aliwong@cihe.edu.hk;

development through practising DI, which will help reinforce the change from textbook-centred to student-centred learning. The paper presents a novel design for a research project.

Conclusion: The cooperative research design presented in this paper has great potential to address culture-related challenges in engaging teachers and students in DI, promoting a student-centred teaching approach, and reinforcing DI in higher education in Hong Kong.

Keywords: DI (Differentiated Instruction); ELP; ESP; higher education.

1. INTRODUCTION

1.1 Differentiated Instruction

The approach of Differentiated Instruction (DI) values the individual differences in learners. A set of learning choices is offered to accommodate students' learning preferences and to address students' learning needs. Differentiating in content, process, and product allows a thorough understanding of the new learning materials, a successful integration of knowledge, and a degree of flexibility to demonstrate the learning outcome [1]. The teaching approach yielded great success in primary education [2-4], secondary education [5,6] but a controversial outcome in higher education [7,8].

1.2 Rationale for Differentiating

Classrooms are filled with diversity as the trend of life-long learning becomes popular. In the past, most degree programmes were highly competitive and higher education was limited to the best secondary school graduates. On the contrary, higher education has now become accessible for students with diverse educational backgrounds in recent decades. It is becoming increasingly common for students from different age groups, socio-economical classes, and educational backgrounds to learn in the same classroom. On the other hand, it is also becoming increasingly difficult for education professionals to accommodate all students' learning needs and to ensure meeting the academic standard as required or stipulated by management. This paper, therefore, focuses on the challenges to teach English for Specific Purposes (ESP) in Asian higher education institutions.

Adopting the conventional teaching approach to engage and motivate students to learn in a classroom with mixed abilities can be a challenge [9,10], in which a pedagogical shift from teacher-centred to student-centred is necessary [1]. DI is now a well-developed

approach that helps to facilitate learning by accommodating students' preferences [1,9,11,12]. This approach is supported by constructivist theories, cognition, and multiple intelligence research [13,14,15] to enhance learning motivation [16,17]; and its effectiveness in the areas of mathematics to second language acquisition [2,3,18,19] has been supported by numerous educational research studies.

1.3 Comparison of the Approaches

1.3.1 The conventional approach

The conventional teaching approach is the mainstream mode of teaching in many education systems in Hong Kong, including higher education. The learning is textbook-based, the teaching is teacher-dominant, and the evaluation system is standardized. In this approach, the student's role in learning is passive, and the role of the teacher in teaching is fundamental and often stressful. The approach also assumes that all students' ability is comparable. As such, the conventional approach might not be the best for classrooms with mixed abilities.

1.3.2 Mixed ability classrooms

The facilitation of learning is a great challenge for teachers of mixed-abilities classrooms. Teachers work under stress to meet the curriculum standards and to engage students in learning. Students with high abilities are likely to meet the curriculum standards, whereas students with low abilities are likely to be left behind. On the contrary, disadvantaged students are likely to achieve academic improvements when the content is at an appropriate level of difficulty, while students with high abilities are likely to become unmotivated. As Tomlinson [20] suggested, when students are different in ability, learning profile, readiness, and development, one size does not fit all in a classroom, calling therefore in such a setting some accommodation necessary to facilitate and bring about effective learning.

2. UNDERSTANDING THE CHALLENGES TO REINFORCE DIFFERENTIATED INSTRUCTION

In our recent attempt to reinforce DI in a higher education environment, the action research mode has been adopted. In the action research study, a total of 319 students and three course instructors participated in a 13-week English for Specific Purpose (ESP) course. All students learn English as a second language, and they are all Year 2 student from either Bachelor of Health Science or Bachelor of Social Science. All three course instructors are experienced ESP teachers. Pre- and post-study comparisons were made on students' English skills, learning motivation, study approach and learning preference. A significant improvement in English skills is observed in students with low and average English skills in the post-test. No significant change is observed in learning motivation but students with low and averaged English skills engaged in three tiered tasks implemented in class. Student's study approach is weakly associated with English ability and its change is inconsistent between the pre-and post-comparison. Sixty-six percent of participating students indicated a preference for small group activities in class. The action research provides some ground for future DI implementation in Hong Kong. This paper focuses on the challenges and stressors identified in both reflective interviews with participating teachers and one-on-one interviews with participating students.

2.1 The Switch from Textbook-Centred to Student-Centred

The switch from textbook-centred to student-centred approaches produces unease for both educators and students. Poedjiastutie and Oliver [21] conclude that educators tend to adhere to a traditional teaching approach, because they are benefited from the approach. As the literature reviewed suggests, the adoption of DI strategies can take time [22-25]. Increasing training opportunities and success experiences in DI will help to facilitate conceptual changes in educators and to develop some effective differentiation strategies [26].

Furthermore, individual differences are emphasized in student-centred approaches, such as DI, but not so much in the conventional approach. Increased exposure to DI learning and training will help teachers in developing their own

differentiating strategies [27] and a heightened sensitivity to students' learning profiles. An understanding of the complex profile of students and a plan of action in differentiation can help reveal the teacher's teaching approach and the progress of professional development in differentiating instruction [28].

2.1.1 Conceptual change

Such a conceptual change is also required in the student, to switch from passive learning to an active-learning role. In the student interview, more than half of respondents relayed their learning satisfaction to teachers' teaching style rather than their academic achievements or learning progress. It hints that students perceive themselves as passive learners and rely on detailed instructions, otherwise they would feel insecure to work on a differentiated task where step-by-step instruction is missing.

2.1.2 Value alternation

Personal values shape the perception of reality and sometimes affect judgments. Even experienced professional educators are not immune from bias. In the interviews of our previous study, contradicting experiences are reported between the teachers and the students. From the teachers' perspective, students are unwilling to engage in in-class activities; students' participation is driven by reward in the tasks, such as assignments for grades, and tests [29]. Therefore, a great challenge is expected to facilitate small group activities in class. However, approximately 20% of interviewed students suggested that they would look forward to a variety of in-class activities. Sixty-six percent of students preferred in-class group activities in comparison to individual activities. The result suggests that more than half of participating students look forward to engaging in interactive activities in class. The long conventional education and training journey might have reinforced a heavy focus on academic evaluation, in assessing students' learning motivation and learning outcomes. On the students' end, some of them are trained to value the evaluation score, and the effectiveness of their study strategies, rather than their enjoyment of learning. By contrast, DI aims to create an enriched and enjoyable learning environment for students to master a skill within their learning preferences [20]. As such, it certainly takes time for both teachers and students to alter their perception of learning and to enjoy learning with DI.

2.1.3 Mismatching learning goals

The mismatching learning goal is found in institutions. Poedjastutie and Oliver [21] reported that institutions focus on enhancing students' vocabulary and grammar skills, but students look forward to enhancing their speaking and listening skills. The mismatching learning goal can have a great impact on in-class engagement.

In our previous study, half of the interviewed students stated their goal was to apply English skills in daily life including understanding the broadcast of their YouTuber in English and communicating with people from a different ethnic background for cultural exchange. Half of the interviewed students stated that they utilize English skills beyond class time for English enhancement. The rest of the students being interviewed expressed that English skills were essential to enhance their professional competence in the future. Moreover, nearly 70% of participating students rated their motivation in English learning as either "very motivated" or "somewhat motivated" on a 5-point Likert scale [29]. Altogether, both quantitative and qualitative data suggest that more than half of participating students set some goals to achieve in English learning, and they are thus motivated to learn.

Mismatching goals between students and teachers could be a cause for low classroom engagement. In our study [29], teachers reported that the engagement was low in some classrooms; students were reluctant to ask questions and to answer teachers' questions. From the teachers' perspective, they believed that some students were serious about their careers, and therefore, were motivated in English learning. Some students were unmotivated to learn as they lacked a goal for achievement and were uncertain of their future career goals. As such, the impact of mismatching learning goals urges some alteration of the curriculum and a switch to student-centred approach for better learning outcomes.

2.2 The Challenges in Professional Development

2.2.1 Limited time

A tight schedule and a packed curriculum are some common challenges to most higher education teachers in professional development. Ula [30] concluded in a study that teachers from

high education often perceived exhaustion to manage teaching and training at the same time, resulting in frequently missing training sessions. Moreover, teachers also perceive stress to help students meet the academic standard while adopting a new teaching approach. As a result, tension and struggle are unavoidable, which compel teachers to implement their time-honoured instruction, even though they are aware of the benefits of DI [31].

2.2.2 Limited resources

Limited resources or support from the institution can hinder the adoption of a new teaching approach. Changes are difficult to be brought about by a single individual, and institutional support for it is essential. In terms of institutional collaboration with the teacher, Tiongson [32] suggested that a formal structure and streamlined policy can help to support collaboration within the faculty. The successful cooperation between administrative, teaching, research, and departmental operation staff, can be the key to reinforcing a change in the teaching approach.

3. A COLLABORATION TO REINFORCE DIFFERENTIATED INSTRUCTION

We propose a research opportunity in supporting teachers' professional development. A good theory can explain the cause and effect of a problem or concern thoroughly, however, the application of a theory may not be effective to solve a problem. Hence, collaboration is advised in processing a revolutionary change.

3.1 The Design of Cooperative Research

To overcome the challenges in reinforcing DI, we are proposing a cooperative research project to work with teachers for DI implementation on two consecutive English for Specific Purpose courses (ESP). The implementation experience and impact of the first ESP course will be discussed and refined for the second ESP course. In this research project, participating Teachers can develop personalized DI strategies for the second and future ESP courses, as such, the project also serves as a great professional development of DI. Furthermore, participating teachers can deepen their understanding of students' learning needs and interests in the two-consecutive ESP courses, and a conceptual change is likely to be achieved.

3.1.1 Duration of the project

The time gap between the 2-consecutive courses allows sufficient time for teachers to integrate DI and the pedagogical approach they favoured and tailor-made the differentiation that fits. In the literature, teachers have different preferences in differentiating instructions for their classes. It would be best for teachers to explore and develop a differentiation strategy of their own. Successful differentiating experience helps to reinforce student-centred teaching approaches such as DI.

3.1.2 The collaboration

Teachers are the ones who work closely with students in education, their observation and point-of-view are golden. The tiered tasks designed by teachers are likely to benefit students at their skill level. With the support of the research team, including the collection of students' opinions, and psychological assessments such as anxiety level and self-efficacy, teachers can avoid bias for professional competence development. The collaboration helps to strengthen a team and to reinforce change at multiple levels in the institution. The cooperation can help smooth the transition when each party is aware the needs of each department and the allocation of resources to reinforce the change.

4. CONCLUSION

All in all, teachers face a lot of challenges in the adoption of DI. Although the positive impact of DI is observed in literature and our previous study, the adoption of DI is hindered. Some difficulties and challenges are identified based on our action research study and are supported by the literature. The adjustment from textbook-focused and student-centred, from conventional to differentiation is urged to accommodate the educational challenge in higher education in Hong Kong and institutional support is required to facilitate the change. The design of collaborative research has a great potential to help relieve teachers' pressure in the adoption of DI, the research component also has a great potential to smooth the pedagogical change and to reinforce professional development in DI.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Tomlinson CA, Imbeau MB. *Leading and managing a differentiated classroom*. Moorabbin, Vic: Hawker Brownlow Education; 2010.
2. Tieso C. The effects of grouping practices and curricular adjustments on achievement. *Journal for the Education of the Gifted*. 2005;29(1):60–89. DOI: 10.1177/016235320502900104
3. Tobin R, Tippett CD. Possibilities and potential barriers, learning to plan for differentiated instruction in elementary science. *International Journal of Science and Mathematics Education*. 2013;12(2): 423–443. DOI: 10.1007/s10763-013-9414-z
4. Magableh ISI, Abdullah A. On the effectiveness of differentiated instruction in the enhancement of Jordanian students' overall achievement. *International Journal of Instruction*. 2020;13(2):533–548. DOI: 10.29333/iji.2020.13237a
5. Pablico J, Diack M, Lawson A. Differentiated instruction in the high school science classroom: Qualitative and quantitative analyses. *International Journal of Learning, Teaching and Educational Research*. 2017;6:30-54.
6. Ocampo DM. Effectiveness of differentiated instruction in the reading comprehension level of Grade-11 senior high school students. *Asia Pacific Journal of Multidisciplinary Research*. 2018;6(4):1-10.
7. Thuen Jørgensen M, Brogaard L. Using differentiated teaching to address academic diversity in higher education, learning and teaching. 2021;14(2):87-110. Available: <https://www.berghahnjournals.com/view/journals/latiss/14/2/latiss140206.xml> Accessed 27 February 2023,
8. Darra M, Kanellopoulou E. The implementation of the differentiated instruction in higher education: A research review. *International Journal of Education*. 2019;11(3):151-172. Available: <https://doi.org/10.5296/ije.v11i3.15307>
9. Tomlinson CA. Teaching for excellence in academically diverse classrooms. *Society*. 2015;52(3):203–209. DOI: 10.1007/s12115-015-9888-0
10. Bondie RS, Dahnke C, Zusho A, How does changing 'one-size-fits-all' to differentiated

- instruction affect teaching? *Review of Research in Education*. 2019;43(1):336–362.
DOI: 10.3102/0091732x18821130
11. Tomlinson CA, Different learners, different lessons. *Instruction*. 2002;112(2):21–25.
 12. Tomlinson CA. *How to differentiate instruction in mixed-ability classrooms*. Alexandria, VA: Association for Supervision and Curriculum Development; 2001.
 13. Felder R, Soloman B. Learning styles and strategies. *Teaching and Learning STEM*. Available: <https://www.engr.ncsu.edu/wp-content/uploads/drive/1WPAfj3j5o5OuJMiHorJ-lv6fON1C8kCN/styles.pdf>
Accessed 23 September 2022
 14. Bornstein MH, Gardner H. Frames of mind: The theory of multiple intelligences. *Journal of Aesthetic Education*. 1986;20(2):120.
DOI: 10.2307/3332707
 15. Vygotsky LS. *Mind in society: The development of higher psychological processes*. Cambridge: Harvard University Press; 1978.
 16. Burkett JA. Teacher perception on differentiated instruction and its influence on instructional practice. *Pro Quest Dissertations and Theses*. 2013;117.
 17. Maeng JLC. *Differentiating science instruction: Success stories of high school science teachers*. Institute of Education Sciences; 2011.
 18. Marulanda M, Giraldo P, Lopez L. Differentiated instruction for bilingual learners. *Annual Conference of the Association for Supervision and Curriculum Development*; 2006
 19. Dooley A. *The effects of differentiated instruction on a fourth grade science class*. MA Dissertation, Ohio University; 2009.
 20. Tomlinson CA. *How to differentiate instruction in academically diverse classrooms*. ASCD; 2017.
 21. Poedjiastutie D, Oliver R. English learning needs of ESP learners: Exploring stakeholder perceptions at an Indonesian university. *TEFLIN Journal - A publication on the teaching and learning of English*. 2017;28(1).
DOI: 10.15639/teflinjournal.v28i1/1-21
Accessed 12 February 2023
 22. Boelens R, Voet M, De Wever B. The design of blended learning in response to student diversity in higher education: Instructors' views and use of differentiated instruction in blended learning. *Computers & Education*. 2018;120:197-212.
Available: <https://doi.org/10.1016/j.compedu.2018.02.009>.
Assessed 12 February 2023
 23. Ginja TG, Chen X. Teacher educators' perspectives and experiences towards differentiated instruction. *International Journal of Instruction*. 2020;13(4):781-798.
 24. Hernández-Chérrez E, de los Á, Galora-Moya N, Hidalgo-Camacho C. Differentiated instruction on reading skills at higher education level. *Cienciamatria*. 2019;6(10):48-65.
Available:
<https://doi.org/10.35381/cm.v6i10.114>
Accessed 12 February 2023.
 25. Pham HL. Differentiated instruction and the need to integrate teaching and practice. *Journal of College Teaching & Learning*. 2012;1:13-20.
DOI: 10.19030/tlc.v9i1.6710
 26. Godor BP. The many faces of teacher differentiation: Using Q methodology to explore teachers preferences for differentiated instruction. *The Teacher Education*. 2021;56(1):43-60.
DOI: 10.1080/08878730.2020.1785068
 27. Hills DC, Sessoms-Penny S. Pre-service professional development for inclusion teachers. *Research in Higher Education Journal*. 2021;40:1-17.
Available: <http://files.eric.ed.gov/fulltext/EJ1296461.pdf>
Accessed 12 February 2023
 28. Xu Z, Shi Y. Application of constructivist theory in flipped classroom— take college english teaching as a case study. *Theory and Practice in Language Studies*. 2018; 7:880-887.
DOI: 10.17507/tpls.0807.21
 29. Chan TYH, Wong A. The other side of the instruction differentiation process: Pressures on the teacher. *Special Education*. 2022;2(43):3399-3413.
 30. Ulla M. Teacher training in Myanmar: Teachers' perceptions and implications. *International Journal of Instruction*. 2017; 10:103-118.
DOI: 10.12973/iji.2017.1027a
 31. Smit R, Humpert W. Differentiated instruction in small schools. *Teaching and Teacher Education*. 2012;28:1152-1162.
Available: <https://doi.org/10.1016/j.tate.2012.07.003>
Accessed 12 February 2023

32. Tiongson MT. Interdisciplinary teacher collaboration for English for specific purposes in the Philippines. University of Sydney Papers in TESOL. 2018;13:29-62. Available:<https://www.sydney.edu.au/content/dam/corporate/documents/faculty-of-arts-and-social-sciences/research/research-centres-institutes-groups/uos-papers-in-tesol/volume-13/article02.pdf> Accessed 12 February 2023

© 2023 Wong and Chan; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Peer-review history:

The peer review history for this paper can be accessed here:
<https://www.sdiarticle5.com/review-history/97953>