

# Challenges to Adopt Differentiated Instruction in Higher Education in Hong Kong

## 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 problem 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 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][3][4], secondary education [5][6] but a controversial outcome in higher education [7][8].

### 1.2 Rationale for Differentiating

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

39 Adopting the conventional teaching approach to engage and motivate students to learn in a  
40 classroom with mixed abilities can be a challenge [9][10], in which a pedagogical shift from  
41 teacher-centred to student-centred is necessary [1]. DI is now a well-developed approach  
42 that helps to facilitate learning by accommodating students' preferences [1][9][11][12]. This  
43 approach is supported by constructivist theories, cognition, and multiple intelligence  
44 research [13][14][15] to enhance learning motivation [16][17]; and its effectiveness in the  
45 areas of mathematics to second language acquisition [2][3][18][19] has been supported by  
46 numerous educational research studies.

### 48 **1.3 Comparison of the Approaches**

#### 50 **1.3.1 The Conventional Approach**

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

#### 60 **1.3.2 Mixed ability Classrooms**

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

## 72 **2. UNDERSTANDING THE CHALLENGES TO REINFORCE DIFFERENTIATED** 73 **INSTRUCTION**

75 In our recent attempt to reinforce DI in a higher education environment, the action research  
76 mode has been adopted. In the action research study, a total of 319 students and three  
77 course instructors participated in a 13-week English for Specific Purpose (ESP) course. All  
78 students learn English as a second language, and they are all Year 2 student from either  
79 Bachelor of Health Science or Bachelor of Social Science. All three course instructors are  
80 experienced ESP teachers. Pre- and post-study comparisons were made on students'

81 English skills, learning motivation, study approach and learning preference. A significant  
82 improvement in English skills is observed in students with low and average English skills in  
83 the post-test. No significant change is observed in learning motivation but students with low  
84 and averaged English skills engaged in three tiered tasks implemented in class. Student's  
85 study approach is weakly associated with English ability and its change is inconsistent  
86 between the pre-and post- comparison. Sixty-six percent of participating students indicated a  
87 preference for small group activities in class. The action research provides some ground for  
88 future DI implementation in Hong Kong. This paper focuses on the challenges and stressors  
89 identified in both reflective interviews with participating teachers and one-on-one interviews  
90 with participating students.

## 91 **2.1 The Switch from Textbook-centred to Student-centred**

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93  
94 The switch from textbook-centred to student-centred approaches produces unease for both  
95 educators and students. Poedjiastutie and Oliver [21] conclude that educators tend to  
96 adhere to a traditional teaching approach, because they are benefited from the approach. As  
97 the literature reviewed suggests, the adoption of DI strategies can take time [22][23][24][25].  
98 Increasing training opportunities and success experiences in DI will help to facilitate  
99 conceptual changes in educators and to develop some effective differentiation strategies  
100 [26].

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102 Furthermore, individual differences are emphasized in student-centred approaches, such as  
103 DI, but not so much in the conventional approach. Increased exposure to DI learning and  
104 training will help teachers in developing their own differentiating strategies [27] and a  
105 heightened sensitivity to students' learning profiles. An understanding of the complex profile  
106 of students and a plan of action in differentiation can help reveal the teacher's teaching  
107 approach and the progress of professional development in differentiating instruction [28].

### 108 **2.1.1 Conceptual Change**

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

### 117 **2.1.2 Value Alternation**

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120 Personal values shape the perception of reality and sometimes affect judgments. Even  
121 experienced professional educators are not immune from bias. In the interviews of our  
122 previous study, contradicting experiences are reported between the teachers and the  
123 students. From the teachers' perspective, students are unwilling to engage in in-class  
124 activities; students' participation is driven by reward in the tasks, such as assignments for  
125 grades, and tests [29]. Therefore, a great challenge is expected to facilitate small group  
126 activities in class. However, approximately 20% of interviewed students suggested that they  
127 would look forward to a variety of in-class activities. Sixty-six percent of students preferred  
128 in-class group activities in comparison to individual activities. The result suggests that more  
129 than half of participating students look forward to engaging in interactive activities in class.  
130 The long conventional education and training journey might have reinforced a heavy focus  
131 on academic evaluation, in assessing students' learning motivation and learning outcomes.  
132 On the students' end, some of them are trained to value the evaluation score, and the  
133 effectiveness of their study strategies, rather than their enjoyment of learning. By contrast, DI

134 aims to create an enriched and enjoyable learning environment for students to master a skill  
135 within their learning preferences [20]. As such, it certainly takes time for both teachers and  
136 students to alter their perception of learning and to enjoy learning with DI.

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### 138 **2.1.3 Mismatching Learning Goals**

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

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

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

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## 165 **2.2 The Challenges in Professional Development**

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### 167 **2.2.1 Limited Time**

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169 A tight schedule and a packed curriculum are some common challenges to most higher  
170 education teachers in professional development. Ula [30] concluded in a study that teachers  
171 from high education often perceived exhaustion to manage teaching and training at the  
172 same time, resulting in frequently missing training sessions. Moreover, teachers also  
173 perceive stress to help students meet the academic standard while adopting a new teaching  
174 approach. As a result, tension and struggle are unavoidable, which compel teachers to  
175 implement their time-honoured instruction, even though they are aware of the benefits of DI  
176 [31].

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### 178 **2.2.2 Limited Resources**

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180 Limited resources or support from the institution can hinder the adoption of a new teaching  
181 approach. Changes are difficult to be brought about by a single individual, and institutional  
182 support for it is essential. In terms of institutional collaboration with the teacher, Tiongson  
183 [33] suggested that a formal structure and streamlined policy can help to support  
184 collaboration within the faculty. The successful cooperation between administrative,  
185 teaching, research, and departmental operation staff, can be the key to reinforcing a change  
186 in the teaching approach.

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### **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.

228 **4. CONCLUSION**

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

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240 **COMPETING INTERESTS**

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242 Authors have declared that no competing interests exist.

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244 **AUTHORS' CONTRIBUTIONS**

245

246 Prof Thomas YH Chan designed the cooperative research and oversaw the publication  
247 progress, Allison Wong manages literature search, drafts the paper and synthesises the  
248 research findings. Both authors have read and approved the final manuscript.

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## **APPENDIX**