

## **New Initiative in Special Education in Macao: A Curriculum Reform Project**

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*Abstract: The education system in Macao now implements the principle of equal opportunities for learning for all children, including those with special educational needs. This principle gives rise to the notion of ‘one curriculum framework for all’— meaning that all children in mainstream and special schools follow a common curriculum, but with necessary adjustments and accommodations made for those with learning difficulties. This paper reports on a consultancy project initiated by The Education and Youth Affairs Bureau of Macao SAR to guide special schools on curriculum reforms and help teachers prepare students with special educational needs to learn through the mainstream curriculum. Workshops and symposia were conducted for special education teachers to familiarize them with the new paradigm shift. Over a period of 3 years, 33 teachers from mainstream and special schools were involved in writing Supplementary Guides to the mainstream curriculum, and a Learning Ability Progress Framework. By using the Learning Ability Progress Framework, teachers were able to adopt a more student-centered learning approach to conduct lessons that are inclusive of all learners. This reform represents a milestone in progress for special education in Macao as it moves towards a more inclusive subject-based curriculum.*

*Keywords: Inclusive curriculum, Learning Ability Progress Framework, Macao SAR, Special education, Supplementary Guides to Mainstream Curriculum, One curriculum framework for all*

## Introduction

In recent years, most developed countries have experienced the advent of an inclusive education movement that is gradually replacing traditional forms of segregated education (Forlin, 2010; Hegarty & Alur, 2002). This has resulted in many more students with special educational needs (SEN) now attending mainstream schools. This trend toward inclusion embraces far more than students with disabilities by seeking also to provide equal education opportunities for all students regardless of ability, race, religion, and socio-economic background.

Traditionally, students with special educational needs and disabilities have attended special schools, where their curriculum is often very different from that followed by students in mainstream schools. Special school curricula, particularly for those with moderate to severe intellectual disability or autism, tend to focus on functional everyday living skills and preparation for work, rather than studying academic subjects (Ayers, Douglas, Lowery & Sievers, 2011; Westwood, 2018). Currently, the principle of equal opportunity for all has caused educators to argue that SEN students have an equal right to experience mainstream curriculum, rather than having a totally different education (Curriculum Group Dorchester, 2002; Humphreys, 2009; Li, Tse & Lian, 2008). The major challenge to implementing mainstream curriculum in special schools is that the contents, activities, standards, and assessment objectives are designed for the ability level of mainstream students. The learning characteristics of students with special educational needs are not addressed in a mainstream subject-based curriculum (Van der Veen, Smeets & Derriks, 2010; Cheung & Kwok, 2019). This applies regardless of whether these students are in special schools or mainstream schools.

In Macao, the aim of special education, as stated in Fundamental Law of Non-Tertiary Education System, Law No. 9/2006, is:

*... to provide appropriate education opportunity for the development of body and mind to students with special educational needs, to assist them to integrate in the society, to develop their potential* (Macao SAR, 2006, Chapter 3, Sub-section 1, Article 12).

According to data provided by the Education and Youth Affairs Bureau, there are nine schools offering special education curriculum to students with special educational needs. These nine schools have 142 teachers to serve 821 SEN students in the academic year 2018/2019. These schools generally adopt a separate curriculum for their students, not closely aligned with mainstream content. Seeing the need to keep up with development of inclusive education, and with SEN students' rights to equal educational opportunity, the Education and Youth Affairs Bureau of Macao invited the Centre for Advancement in Inclusive and Special Education (CAISE) at the University of Hong Kong to carry out a project to review the existing curriculum practice in schools providing special education and make recommendation on the long-term direction in curriculum reform.

## The Project

A Project team was formed at CAISE comprising 4 retired school principals and 7 expert subject teachers from Hong Kong SAME Network schools (schools that join the SAME - Systematic Approach to Mainstream Education Network) (Li, Tse & Lian, 2009), to take up the request from Macao. The SAME Network schools have over eight years of experience applying the “One curriculum” approach to teaching and learning. The guiding principle that the CAISE Project team followed in reforming the special education curriculum was that all students have the right to an equal opportunity to access education, and that the curriculum should be accessible to students of all abilities (Li, Tse & Lian, 2009; Wearmouth, 2013).

### *Feasibility Study*

Before launching the project, the Project Team conducted a Feasibility Study to confirm the need for reform. They spent three months visiting schools, meeting principals, government officials and teachers. It was found that the schools had traditionally developed their own curriculum according to the abilities of their students. The programmes were different from teacher to teacher and from school to school. Moreover, the curricula in operation were not cross-referenced to mainstream curriculum in any way, and were entirely separate. Interviews were conducted with teachers, and they voiced that they desired to have access to a unified cross-school curriculum and an indication of standards by which to assess the learning of their SEN students. However, the inadequacy in teacher training and the lacking of professionals in particular fields hinder their progress (So, 2005).

The CAISE Project team recommended that a long-term approach to inclusive curriculum should be developed for special education in Macao. This could be done by producing “*Supplementary Guides to Mainstream Curriculum*” (also referred to as ‘*The Supplement*’), to indicate where and how modifications could be made for SEN students. In addition, a series of learning progression levels based on the mainstream curriculum structure would be developed to help teachers identify students’ levels of ability at any stage in their education. This tool was later termed the “*Learning Ability Progress Framework*” (also referred to as ‘*The Ladder*’). The aim of the project then became to provide professional development for linking these resources to classroom teaching.

### *The Objectives*

The objectives of the Project were:

- (a) to promote the concept of "One Curriculum Framework for All" (Li, Tse & Lian, 2009) (a new teaching paradigm to cater for learning diversity) and to translate this into practice;

- (b) to establish a clear direction for development of Macao's special education curriculum;
- (c) to develop “*Supplementary Guides to Mainstream Curriculum*”, so that SEN students at all key educational stages can access, to the best of their ability, the same curriculum as their counterparts in mainstream education;
- (d) to develop a systematic approach for monitoring the progress of SEN students, using the “*Learning Ability Progress Framework*”;
- (e) to provide professional training for special education teachers, including curriculum adaptation, differentiation, and student-centered learning;
- (f) to establish a professional sharing network between special education teachers in Macao and Hong Kong.

### *The Process*

The Project was launched in September 2016 and was conducted in six phases to end in June 2019. In Phase 1 the main objective was to introduce to special school principals and teachers in Macao the approach needed to develop an inclusive curriculum based upon mainstream content. It was emphasized that the curriculum should also embody the cultural attributes of Macao.

In order to establish a consensus among the principals and teachers, professional development workshops were held. It was agreed that the Project would focus on development and adaptation of six subject areas i.e. Chinese, Mathematics, General Knowledge, Science and Humanity, Physical Education and Health, Art, Information Technology. A total of 33 Macao teachers were recruited from special schools to engage in the writing of “*Supplementary Guides to Mainstream Curriculum*” and the “*Learning Ability Progress Framework*” for these selected subjects.

The role of consultants was to monitor the progress, provide professional training and recommendations, and prepare necessary documents. Subject teachers from the SAME Network led the Macao teachers in the writing and editing work of respective subjects.

In Phases 2 and 3, the Project work focused on the writing *the Supplement* and preparing *the Ladder* for the subject Chinese and Mathematics. In Phases 4 and 5, the Project focused on the writing of *the Supplement* and *the Ladder* for the subjects: a) General Studies, Science and Humanity, b) Physical Education and Health, c) Information Technology, and d) Arts, for Macao special education.

In Phase 6, the consultants paid visits to individual schools to provide on-site advice on curriculum management. Schools were asked to prepare a 3-year curriculum development plan based on the application of *the Ladder*. Professional development workshops on student-centered learning were conducted for teachers, and they were asked to try out schemes of work in support

of student-centered learning. A total of 25 teacher workshops and 6 seminars were held to acquaint principals and teachers with the new paradigm.

### *The Over-Riding Principle: One Curriculum Framework for All*

“One Curriculum Framework for All” (Li, Tse & Lian, 2009) means all students, regardless of their physical or mental abilities, should learn through a common curriculum. This is the principle of equal opportunities and the basis for inclusive education. “One Curriculum Framework for All” was the driving force for this Project. The challenge for Macao professionals in special schools is that these schools are separated from the mainstream and do not follow mainstream curriculum. In order for school staff to understand what is possible in changing to a common curriculum across all types of schools, they need exemplars of successful practices. Macao teachers were asked first to study existing mainstream curriculum guides and textbooks. The intention was to make special school teachers fully aware of the importance of the broad and balanced nature of the central curriculum, and to recognize the right of their SEN students to access the mainstream curriculum.

The first task was to determine a subject structure to be adopted and to identify the names of subjects and the curriculum strands to which they belong. It was emphasized that clear reference should be made to different key stages (i.e., expected standards of attainment at different ages) in the mainstream curriculum in Macao. It was soon discovered however that the existing descriptions of subjects and strands did not carry adequately fine-grained detail of these key stages to allow assessment of the slower rate of learning and development found in special school students. The teachers had to consider how each subject could be analyzed into more basic levels of attainment or performance, and then present these as a sequence that can be used to monitor progress of individual students. A “*Learning Ability Progress Framework*” was proposed for each of the six subjects and their strands for identifying the attainment levels. The concepts of using attainment levels with level descriptors was quoted from Performance Scale of United Kingdom (Department for Education, 2017).

### *The Products*

**Supplementary Guides to Mainstream Curriculum.** A major product from the project was a series of “Supplementary Guides” for Macao Mainstream Curriculum. *The Supplements* as compiled by the teachers covered each of the 6 subjects in the central curriculum and included adaptations, modifications and accommodations that could be made for SEN students. It was emphasized that *the Supplements* would provide local professionals with practical strategies for adapting subject matter, and give examples suitable for the culture in Macao.

In the completed *Supplements*, there are also chapters explaining the concept of the project, the worldwide trend in reforming special education, the importance of subject teaching for SEN students, the relationship between “*Requirements of Basic Academic Attainments*” (The Requirements of Basic Academic Attainments are official documents for curriculum framework for formal education of Macao Education System (The Curriculum Development Website, 2016)) and the “*Learning Ability Progress Framework*”. *The Supplements* are to become the reference point for professionals in special schools to understand the rationale of the approach. Hard copies of *the Supplements*, kept in a boxset, were later distributed to all special school teachers in Macao.

**Learning Ability Progress Framework.** Another major product of the project was the “*Learning Ability Progress Framework*” (Appendix 1). This is a series of attainment levels, with level descriptors to show the sequence of learning progression within each strand of the six mainstream curriculum subjects.

The “*Learning Ability Progression Framework*” is organized into 18 levels, with Level 1 (L1) to Level 3 (L3) covering the early sensorimotor stages of development, Level 4 (L4) to Level 9 (L9) describing the range of abilities of students in preschool stages, and Level 10 (L10) to Level 18 (L18) describing progressive learning abilities of a mainstream student from primary One to Junior Secondary Three. It is important to stress that all these levels are Key-Stage free—in other words, a student at any Key Stage may perform at any level. For example, a Key Stage Three (Junior Secondary) student with a moderate to severe disability may still be operating at L2. The teaching for this student should be pitched at L2, not L10 as one would expect for a Junior Secondary student. The design of this instrument therefore enables a teacher to identify the diversity of abilities in a class so that different objectives will be set for different students.

The “*Learning Ability Progress Framework*” (*ladder*) prompts teachers to focus on what SEN students can do, rather than on what they cannot learn. The ability levels provide information on students' real ability in various subject areas and their cross-year learning performance. Equally important, assessment of students' real learning indicates the effectiveness of subject teaching and can provide powerful data for school improvement. School effectiveness should not be measured by how much the teachers have taught, but by how much the students have learned.

In drafting the descriptors of *the Ladder*, teachers consulted another important Macao document, the *Requirements of Basic Academic Attainments*. It was decided that *the Ladder* was more appropriate for assessment purposes and for planning lessons that can address diversity. An important feature of the level descriptors in *the Ladder* is that “Macao-ese” (澳門化) has been used in the wording, drawing on the local experiences and language of the subject teachers from the nine schools.

## **Follow-up strategies**

### *School-Based Curriculum Reform*

It is NOT the intention of the Project to produce a unified curriculum for special schools. Both *the Supplements* and *the Ladder* are important references for schools when they are producing curricular materials, such as schemes of work and lesson plans based on the learning needs of their students. *The Supplements* and *the Ladder* provide information that can assist in translating into practice the aims, objectives, structure, units and learning outcomes of the curriculum.

### *Student-Centered Learning*

Learning should be student-centered not teacher-centered. The ultimate goal of this project is to bring about more effective learning and teaching. This can be achieved if teachers follow the subject guidelines and use the level descriptors in planning teaching activities. The learning objectives and the expected outcomes should be matched with the ability level of individual students. Towards the end of the Project, around 130 special education teachers in Macao assembled to write schemes of work based on student-centered teaching strategies. From this exercise, 20 sample schemes of work were later distributed to all teachers for reference. It was recommended to the nine schools that they should follow up with the writing of more schemes of work using the student-centered approach.

### *Building Professional Network*

Whenever significant reforms are attempted in education, it is always extremely important to establish an ongoing supportive professional network among schools and teachers. This is important for sharing information and for trouble-shooting. Experience tells us that teachers gain positive professional growth through cross-school collaboration. During the three years of the Project, 25 teacher workshops and 6 seminars were held. The 33 teachers from different schools who participated in the workshops had built up friendships with each other and with expert teachers from Hong Kong. By keeping in regular contact, they can act as promoters of curriculum reform in their own schools. Links with five supportive Special Schools (the SAME Network schools) in Hong Kong have also been established.

## **Feedback on the Project**

Towards the end of the Project and during the on-site visits to the schools, the Project Team collected the following feedback from principals and teachers about the curriculum reform:

“The *Learning Ability Progress Framework* helps to assess students' learning abilities. Teachers have a better grounding in preparation of teaching materials and can teach their students in accordance with their assessed aptitude.” (Teacher 1)

The Project opens a new page in special education. The *Learning Ability Progress Framework* provides a *unified tool* to describe the learning abilities of SEN students. It changes society's views on special education, and lets society understand that students with special education needs can be educated. They will be more ready to accept SEN students. (Teacher 2)

“*The Ladder* allows teachers to clearly identify students' learning abilities and help them to achieve their teaching goals by analyzing their performance data.” (Principal 1)

“Schools should focus on student learning.” (Principal 2)

“When designing teaching activities, the learning experience of students should be taken into account and should not be limited by the abilities of students through impression.” (Teacher 3)

“When class structure and teaching materials are in line with those in mainstream education, the self-image of SEN students can be enhanced and their parents will find it easier to accept them being in special schools.”(Principal 3)

“Uniform assessment criteria for all students in public and private special schools can improve the teaching standard.”(Teacher 4)

“The framework has changed the description style of the student's current situation in the IEPs which is more concrete. Teachers can more fully examine the students' learning abilities and give feedback to teaching.”(Teacher 5)

“The workshops encourage teachers to think positively about students' learning abilities, encourage teachers to set broad and balance teaching objectives, enrich teaching content and provide students with different learning experiences.”(Principal 4)

## Conclusion

Curriculum development, especially when it involves reforming an existing curriculum, is a long-term process and commitment. The process needs to be driven by a mission to improve education, and must be guided by a clearly defined direction. In the case of developing a



common curriculum that can be implemented with students of quite different levels of ability, there needs to be some form of learning progression framework that enables teachers to monitor each student's progress and evaluate learning effectiveness. Content in the curriculum needs to be carefully sequenced into units that allow for differentiation and adaptation according to students' ability. It is up to individual schools to build their school-based curriculum using the common core learning units and contents, but adapting them to match the different learning levels of individuals.

This Project has provided strong evidence to show that with a learning progression framework that extends down to the early stage of sensorimotor development, all SEN students can access the mainstream curriculum. All schools, mainstream and special, under the same administration district can develop their lessons and learning activities by using the same curriculum framework but adjusting content and teaching approach to match individual students' levels and abilities. This approach enables students with special educational needs to make progress because the curriculum units are adapted to their level of operation in respective subjects.

This concept of a common curriculum for all students represents a major breakthrough in curriculum design for students with special educational needs. The beauty of the approach is that it can easily be applied in any education system with a central curriculum.

The Macao Project comes at the most appropriate time, when the central curriculum is being formulated and enacted into law. *The Ladder* and the *Supplements* provide the tools for special schools to implement the new law in the context of educating students with special needs and disabilities.

Conflicts of Interest: The authors declare no conflict of interest.

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Appendix

Concept framework of the Learning Ability Progress Framework (*The Ladder*)

Senior Secondary Education	Junior Secondary Education	Primary Education	Infant Education				
Distribution of learning ability of SEN students				The Ladder	Learning ability of corresponding peers	Special Education stages	
Few				L18	Junior Secondary	Senior Secondary	
				L17			
				L16			
Some	Few			L15	Senior Primary	Junior Secondary	
				L14			
	L13						
Most	Some	Few		L12	Junior Primary	Primary	
							L11
	L10						
	Most	Some			L9		Preschool
					L8		
	L7						
All	All	Most		L6	Sensory-motor	Infant	
				L5			
		L4					
All	All	All	All	L3-2	Sensory-motor	Infant	
				L3-1			
				L2-2			
				L2-1			
				L1-2			
				L1-1			