The Face of Secondary Education: Students' Perceptions on the Functional Differences Between Schools in Macau

Carlos Vasconcelos-Lopes, University of Saint Joseph, Macao

The Asian Conference on Education & International Development 2017
Official Conference Proceedings

Abstract
After the handover to China, the complexification of Macau educational circumstances, favored by the progressive expansion of free education coverage due to subsidy schemes introduced by the government, and the exceptionally rapid economic growth, due to the liberalization of the gambling market, significant pressure has been felt by local secondary schools in order to accommodate an increasing diversity of student and parental educational aspirations. Concerns are emerging whether the educational system, which is, in essence, a market regulated one, is responding to these new educational demands by providing students and parents with information and options or even by conceding them freedom of choice. Research was conducted to develop and validate a school perception survey that could be used to measure students' perceptions on the main characteristics of the educational offer of Macau secondary schools. The instrument was developed based on an in-depth review of relevant literature. It uses 25 items to capture students' perceptions on the characteristics of schools, reflecting a consensus-based assessment on the most relevant aspects accounting for variation in the education quality students may experience at a school. A reliability and factor analysis of results confirms the reliability and guarantees the validity of a reduced version of the instrument. The most noticeable findings and the final conclusions of an in-depth analysis of the results are presented.

Keywords: school perception survey, secondary education, Macau

Introduction

The nature of work is drastically changing. A worldwide employment revolution is ongoing. Businesses are hiring talent on the Internet, as it's faster and cheaper than the traditional hiring process. They are meeting the labor needs of their projects on a case-by-case basis, rather than by engaging full-time employees. This use of the Internet to find specific skills, in turn, is creating a growing network of freelancers that promote themselves in very creative ways. A growing proportion of individuals are now not only surviving while working independently, they are also thriving.

How does Macau educational system handle this kind of reality, in times when educational systems worldwide are becoming unprecedentedly flexible to meet these dynamics? Is it preparing students for increasingly active and fluid professional lives, with multiple career changes, requiring systematic professional reinvention? Arguably, not much. According to Ouyang, Jin & Tien (2016), Macau educational system locks students into a fairly rigid occupational path early in their teens. "The strict tracking education system and highly competitive college entrance system require students in Macau to make crucial vocational decisions at a very young age" (p. 254).

In market-regulated educational systems, which is the case of Macau (with more than 90% of the schools being private), parental choice should be the major school accountability mechanism. Macau parents and students, however, have reduced access to information with which to judge the educational merits of the educational offer of schools (Chou, 2012). It is in fact very difficult to challenge the educational options that schools decide to make available to them. Even because what seems to matter the most, for the school structure inherited from colonial times, is that educational processes can continue being religiously free of surprises. After all, Macau affluent casino-based economy places low demands on requirements for the quality of education (Chou, 2012).

This study aims primarily at contributing to raise public awareness of Macau educational circumstances. The study will also help the educational community and the educational policy authority to configure better how Macau secondary students, in general, perceive the main strengths and weaknesses of the education they experience at their schools. To an extent that does not require deep examination to be recognized, a better agreement between the educational interests of students and their families and the offer of the mainstream educational providers in Macau can only come about on the basis of a much sharper sensibility of all parties concerned to the functional specificities of the local school structure.

Conceptual Framework

The specific reference frame students were asked to use in the observation of their schools emerged from an extensive search of existing literature on the quality of educational organizations. Each item of the developed instrument simply asks students to assess the strong or weak presence, or absence, of the perceived characteristics of schools that are normally pointed by students, teachers, and parents worldwide as most likely making a difference regarding student learning. Even tough,

the selection of a point of view could not be avoided. Qualitative distinctions between schools can be drawn from many different advantage points.

Perceiving school quality

According to Pang (1999), quality school education has emerged in the South-Western region of China as a popular topic of the educational debate in Hong Kong in the 1990s, after becoming a major educational research interest for Western countries in the 1980s. In Macau, concerns about the quality of school education are only now slowly emerging. This slow local awakening is probably due to the monolithic economic structure of Macau, strongly concentrated on the tourism and gambling industry, which places no significant demands on the quality of school education (Chou, 2012). The economic system simply "does not place enough pressure on the education sector to ensure that the quality of education progresses with the times" (Chou, 2012, p. 106). The reduced pressure Macau society puts on quality school education is probably also explained by "the lack of transparency" of the local school structure (Chou, 2012, p. 101). Parents simply don't have access to adequate information to make smarter decisions in choosing schools.

To make things more complicated, quality school education is a slippery concept (Harvey & Green, 1993). Different conceptions of quality inform the perceptions of different educational stakeholders (Pang, 1999). The ambiguity of the concept of "quality" in education can even be pointed as the protective fence behind which all sorts of irresponsive school structures have been able to remain unaccountable (Harvey & Knight, 1996).

According to Harvey & Knight (1996), citing Harvey & Green (1993), "quality can be viewed as *exceptional*, as *perfection* (or consistency), as *fitness for purpose*, as *value for money* and as *transformation* [emphasis in the original]" (Harvey & Knight, 1996, p. 1). The latter viewpoint was the one adopted by this study. It links the quality of a school to its transformative capability or the quality of the learning of its students. This is also the frame with the highest generalizing potential. The transformative notion of quality is well established in Western philosophy and is also at the heart of the transcendental philosophies of the East (Harvey & Green, 1993). Student satisfaction with school life would be indicative of fitness-for-purpose quality, but it is well known that "Macau students' motivation to learn is not noteworthy" (Chou, 2012, p. 100). Direct links between student satisfaction with school life and the quality of education provided by schools are difficult to establish.

Main dimensions of school quality

The set of items included in the instrument, echoing what students, teachers, and parents tend to mention as having to be in place in an educational setting in order for students to learn,
was intentionally designed fair to Asian educational values, namely to the ones shared by "Confucian Heritage Culture" societies, to which education is not only for individual academic scores and future professional achievements but also for social development and personal self-actualization (Wong, 2001). The items were grouped under five school differentiating categories, namely Curr*iculum Organization & Structure*, *Teaching & Learning Environment*, *Student-teacher Relationship*, *School*

Life & Facilities and *Management & Leadership*. These broad categories reflect a consensus-based assessment on the most relevant factors accounting for variation in the quality of the education students may experience at a school. The specific meaning of each one of these five factors is elaborated below.

Curriculum organization & structure

The first factor includes items describing the curriculum offered by a school. According to Biggs & Tang (2011), one of the major direct, and indirect, determinants of student learning is the curriculum framework the school makes available to its students. Particularly important is the extent to which the curriculum supports conceptual understanding and deep learning. Students must be "able to take knowledge and use it in new ways" (Perkins, 1998, p.13). This requires that students have curricular choices (Glasser, 1990). The items of this category inquire students whether the organization and structure of the courses are good and if there is a good deal of choice over how students go about learning at their school.

According to Pang (1999), another important domain of experience at a school relates to how students perceive the relevance of the curriculum, and even of schooling. Curriculum relevance encourages engagement with the subject matter and deep approaches to learning, which can have a powerful impact on students' progress in learning (Snyder, 1971). According to Glasser (1990), a curriculum perceived as irrelevant leads students to see their education as having little relationship and value to their personal and professional future. Students are therefore also inquired whether most of what is learned at their school is interesting and has "real world" application and if, by studying there, they guarantee a very successful future.

Teaching & learning environment

The second section of the instrument covers the students' perceptions of the teaching and learning environment. The kind of students' approach to studying and their perceptions of teaching are two of the most direct influences on the quality of the learning at a school (Prosser and Trigwell, 1999).

Students differ widely in the prior knowledge and skills they bring to school (Entwistle & Ramsden, 1983). The teaching approaches have, necessarily, to fit the characteristics of the students enrolled. The teaching strategies may vary from, at one end, imparting knowledge and providing hierarchic supervision to student work, and, at the other end, providing guidance to student self-regulated study.

High-quality learning and deep levels of understanding, according to Vermunt (1998), are markedly dependent on the self-regulation of learning. Also, Biggs & Tang (2011) argue that coping with student diversity in the schools of the twenty-first century is largely a matter of making teaching and learning more active. "The learner does not only receive pre-existing knowledge but is actively involved in putting knowledge to work" (Biggs & Tang, 2011. p. 82). Active teaching methods encourage students who don't spontaneously engage in higher order cognitive processing to do it. "Good teaching is getting most students to use the level of cognitive processes needed to achieve the intended outcomes that the more academic students use spontaneously" (Biggs & Tang, 2011, p. 7). The items of this category inquire students whether the

teachers are knowledgeable at their school and whether teachers' explanations really help students grasp things better. Students are also inquired whether teachers don't just give information on the subjects; and whether they are concerned with improving the way students think. Deep and self-regulated approaches to learning also differ considerably from the surface and passive approaches, for example, in the need of detailed manuals and direct supervision from teachers (Vermunt & Verloop, 1999). Students are finally inquired whether the classroom quality of learning materials is high at their schools, if the availability of learning resources is more than enough and whether students really have to understand the subject to get good marks.

Student-teacher Relationship

The third group of items aims at assessing how students perceive the relationship between themselves and teachers regarding assisting, or not, student learning. According to Pang (1999), a very important domain of student experience at a school concerns the student-teacher relationship. A supportive learning environment is extraordinarily dependent on the adequacy of the relationship between students and teachers. Dissatisfaction with it may not necessarily lead to resistance and disciplinary problems. Even successful students may not be deeply engaged or putting forth a high level of effort and commitment.

A distant and indifferent form of interaction is unlikely to be sufficient for making students gaining access to the language and practices of specific disciplines (Hounsell, 1987; Anderson, 1997). As relationship building often requires a profound mindset change in students, it hardly can happen by instantaneous adjustment. It rather is, according to Hounsell (1987), an emergent outcome of a dialogical process. It is best facilitated by teachers taking the students' perspective into account, or by giving them a voice in the process. The items of this category inquire students whether the teachers expect all students to succeed at their school and if they are approachable and provide extra assistance when students need it.

That does not imply assuming that all students' aspirations have to be satisfied. "Students prefer, and act as if there is 'congruence' between the learning environment and their own learning habits. However, (constructive) 'friction' between teaching and learning is often necessary to make students change and to develop their learning strategies" (Vermunt & Verloop, 1999, p. 281). Also, Entwistle, McCune & Hounsell (2002) advocate "the importance of challenging students' existing ideas or beliefs as a way of provoking development" (p. 9). Trying to assess the existence of conditions for the establishment of that kind of judicious communication, students are also inquired whether they receive appropriate workload and study pressure at their school and if students establish a close relationship with them.

School life & facilities

The fourth factor picks up the items related to school resources and facilities. School facilities, despite they are not self-enacting in themselves, can be expected to impact student learning in discernible ways. There is strong, consistent evidence for the effect of basic physical variables (air quality, temperature, noise) on learning (Higgins, Hall, Wall, Woolner and McCaughey, 2005). Some studies also suggest that the characteristics of the physical space (of the classroom, the catering services, the

navigation inside the school, the ICT access, the extra-curricular activities, the school-community extensions, etc.) may all exert non-negligible influence on learning (Higgins *et al*., 2005). The strongest consensus in the literature relates this category to the provision of minimal conditions for learning. Students who are forced to cope with severe constraints created by the lack of teaching and learning resources or inadequacy of school facilities may experience detrimental effects on attainment, engagement, academic self-esteem, attendance and physical well-being (Higgins *et al*., 2005). The items of this category thus inquire students whether at their school students are provided with good quality facilities (classrooms, labs, Internet, library, cafeteria, etc.) and good quality academic support (health services, financial aid, career services, study abroad program, etc.).

Beyond the level of meeting basic standards in this area, the literature also tends to link student self-identification with the school environment, or school connectedness, with quality of school education, seeing it as desirable to promote student wellbeing and to prevent adolescent involvement in a range of health-risk behaviors (McNeely, Nonnemaker and Blum, 2002). In that sense, students are also inquired whether at their school students are provided with beautiful, comfortable and very easy to get around facilities, and a wide choice of extracurricular activities (intramural sport and fitness programs, intramural performing arts programs, student body committed to community service, etc.).

Management & leadership

The fifth, and final, factor brings together all the items helping to create a supportive school climate for learning that the literature roughly relates to school management and leadership. Research has been suggesting that a clear link exists between student learning and perceived strong school leadership. Principal leadership is, according to Edmonds (1979) and also Lezotte (2001), one of the strongest indicators of quality of school education. Strong leadership, according to (Cheng, 2001), is one with a vision. A "vision is a dream" (p. 54), a picture of a promising future for the school, something to strive for, a collective ambition. "The school is perceived as successful when this dream comes true" (Cheng, 2001, p. 55). Visions make a difference on how schools perform differently, and achieve differently, even for schools immersed in the collective Chinese culture, where uniformity and conformity values prevail (Cheng, 2001). The presence of a strong shared vision for the school is apprehended through items asking students whether their school deals effectively with most learning hindrances (such as student and teacher absenteeism, bullying, plagiarism, etc.) and whether the school makes sure that students' raised concerns are well responded.

In the very core of the issue of vision, according to Cheng (2001), is the phenomenon of trust. “Vision is about trust" (Cheng, 2001, p. 66). By primarily serving economic or political interests above the school, or by placing the focus on bureaucratic efficiency, rather than on the educational aspirations of students and the community at large, educational administrators can make schools very unfavorable contexts for the development of visions (Cheng, 2001), and therefore, for the emergence of trust. "Following rules and regulations may easily become the objectives of the school leaders, with little reference to the educational goals of the school" (Cheng, 2001, p. 55). Trust is "the most powerful predictor of school effectiveness" (Mitchell *et al*., 2015, p. 168). A high level of trust among students, teachers, and parents is the basis

for cooperation with one another and for a high level of engagement in teaching and learning (Bryk & Schneider, 2002; Forsyth *et al*., 2006; Forsyth, Adams & Hoy, 2011; Hargreaves, 2007; Leana & Pil, 2006; Price, 2012; Tschannen-Moran, 2014; Van Maele *et al*., 2014).

Factors related to the Chinese culture, according to Wong (2001), may favor a slightly different understanding of the concept of school leadership, not exactly in line with the experience and literature from the West. Gaps of mutual trust between teachers and school principals can be expected to be wider (Wong, 2001). The key factor continues, nevertheless, being the same: trust. "If school heads are faithful to the cause of educating the young … and truthful to their fellow teachers, they will build up trust among them, and the impact would be long lasting" (Wong, 2001, pp. 49-50). Following this line of thought, the items of this category inquire students whether most people at their school trust each other and whether the primary concern of the headmaster extends beyond rules and regulations, into the quality of education and welfare of students.

According to Pang (1999), another very important domain of student experience at a school concerns social interaction, how close the students perceive the classmates, teachers and other people relate. According to Glasser (1990), students have to trust they are immersed in a safe environment, permeated by a sense of social fairness. They must feel free and a sense of belonging to a community that places a high value on learning. Following this line of reasoning, students are inquired whether the value of education for money spent is high at their school, whether they really feel that they belong there and whether they would recommend their school to others.

Methodology

Participants

Participants were students of Macau secondary schools. They were selected diverse regarding age, gender and grade level, in an attempt to match, as closely as possible, the demographics of Macau secondary student population.

Instrumentation

The main measurement instrument used by this study was self-developed, based on an in-depth review of relevant literature. It comprises 25 items aiming at capturing students' perceptions on the characteristics of their school.

The instrument uses a 4-point scale (strongly disagree, disagree, agree, and strongly agree). It was assumed that more points would create excessive intricacy making the survey difficult to respond by participants. It was also assumed that the presence of a neutral response option, like neither agree nor disagree, would facilitate the easy sliding trough questions while offering mindless responses. The fact that respondents are "forced" to deliberate more on their answers provides more detailed insight and makes the results less subjective.

Procedures

The sample was designed following the same two-stage stratified process used in PISA studies (OECD, 2016). In the first stage, individual schools offering secondary studies were selected with probabilities proportional to size, the measure of size being a function of the estimated number of secondary students enrolled in the academic year of 2015-2016 (cf. DSEJ, 2016). 56 schools were selected from a total of 65 schools offering secondary studies in Macau. The second stage of the selection process sampled students within sampled schools. Approximately 1% of students were selected from each school eligible population with equal probability. The number of participating students per school was not allowed to be less than 3, even when the targeted minimum percentage for student-response was met.

The survey was administered outside schools in the Spring of 2017. The participants were informed that the study aimed at measuring secondary students' perceptions on the main characteristics of Macau schools; that the study was absolutely anonymous; and that, even though they had volunteered to respond, they could decide to discontinue their participation in the study at any time. Instructions were provided both orally and in writing. Participants completed the questionnaire, normally, within 3 minutes.

Findings and Discussion

Tests were performed to check the reliability and validity of the developed instrument and its scales.

Reliability

The Cronbach's alpha coefficient was calculated, and a value near .9 obtained, suggesting excellent internal consistency of the items of the instrument. A preliminary analysis of the patterns of correlations between the 25 items of the questionnaire did not recommend the elimination of any item. They correlated fairly well, without any of the correlations being particularly large.

Factor analysis

Both Bartlett's test of sphericity (Bartlett, 1954) and the Kaiser-Meyer-Olkin measure of sampling factorial adequacy (Kaiser, 1974) suggested superb suitability of the dataset for factor analysis.

Despite there were no theoretical grounds for expecting that the factors were not fairly independent, an analysis of the correlation between factors after oblique rotations was conducted. These tests, using several methods of factor extraction and rotation, confirmed that the extracted factors were not markedly correlated. Assuming that the factorial solution was nearly orthogonal (cf. Tabachnick and Fiddell, 2007), a *Principal Components Analysis* with an orthogonal (*Varimax*) rotation was selected as the method of analysis. The Kaiser criterion (factors with eigenvalues greater than one) was the criterion used for deciding on the number of factors to be retained for rotation. A Scree plot was also computed to aid in that kind of decision.

The initial structure of factors that had emerged from the literature review was partially challenged by the factor analysis. An optimized structure, contemplating mostly items loading strongly on only one factor, materialized. This version of the instrument, contemplating 5 factors, each one represented by a significant number of strongly loading items, reduces the initial 25 variables instrument to one with only 20 (Figure 1).

Curriculum Autenticity

Scale 1. Most of what is learned at this school is interesting
Scale 2. The structure of the courses is good
Scale 3. There is a good deal of choice over how students go about learning
Scale 4. Most of what is learned at this school has "real world" application

Student-teacher Relationship

Scale 8. Teachers don't just give information on the subject; they are concerned with improving the way students think
Scale 12. Teachers expect all students to succeed at this school
Scale 13. Teachers are approachable and provide extra assistance when students need it
Scale 15. Students establish a close relationship with teachers at this school

School Life, Resources & Facilities

Scale 10. The availability of learning resources is more than enough
Scale 16. Students are provided with good quality facilities (classrooms, labs, Internet, library, cafeteria, etc.)
Scale 17. Students are provided with good quality academic support (health services, financial aid, career services, study abroad program, etc.)
Scale 18. Students are provided with beautiful, comfortable and very easy to get around facilities
Scale 19. Students are provided with a wide choice of extracurricular activities (intramural sport and fitness programs, intramural performing arts programs, student body committed to community service, etc.)

School Conectedeness

Scale 21. This school makes sure that students' raised concerns are well responded
Scale 22. Most people at this school trust each other
Scale 23. The primary concern of the headmaster in this school extends beyond rules and regulations, into the quality of education and welfare of students
Scale 25. I feel I really belong to this school, I would recommend it to others.

Cognitive Engagement

Scale 11. Students really have to understand the subject to get good marks in this school
Scale 14. Students receive appropriate workload and study pressure at this school
Scale 20. This school deals effectively with most learning hindrances (student and teacher absenteeism, bullying, plagiarism, etc.)

Figure 1. Optimized structure of items.

The new names adopted by some factors in this better internally differentiated framework deserves some explanation.

Curriculum authenticity

A curriculum is described as authentic when it combines relevant and rigorous instructional activities into a cohesive unit (Newmann, King, and Carmichael, 2007). The notion of a relevant curriculum is straightforward. A curriculum is more relevant the more it challenges students with activities and problems whose solution requires the development of real-world problem-solving capabilities. The concept of a rigorous curriculum, or a curriculum that does not underestimate the learning capacity of students, stems from Bloom's taxonomy (1956). A curriculum is more rigorous the more it manages to move students up the taxonomy to addresses higher levels of cognition (Blackburn, 2012). The content of a rigorous curriculum is not just interesting to students; it challenges their critical thinking and creative problem-solving abilities.

School connectedness

"School connectedness refers to the belief by students that adults in the school care about their learning and about them as individuals" (Blum & Libbey, 2004, p. 231). Students feel connected to schools where they feel safe and supported by staff and where expectations for academic success are high. The prevalence of meaningful relationships, based on trust, are, therefore, paramount. Students who feel disconnected from school evidence higher rates of anxiety and emotional distress (Shochet, Dadds, Hamm, & Montague, 2006). Disconnected students tend to be tardy, skip classes, and engage in disruptive behavior.

Cognitive engagement

This unexpected perceptual dimension was almost completely ignored by the preliminary literature review. The student body of a school, and thus the school itself, can be perceived as being more or less cognitively committed. The other possibility, reflecting a low level of cognitive engagement tends to be associated by the literature to behavioral engagement, or normative compliance (Fredricks *et al*., 2011; Luhmann, 1995). Students apparently make a distinction whether the student body of a school is in essence focused on learning, however surface or rote that learning may be, or mainly focused on complying with behavioral requirements (enhancing adherence to classroom rules, obeying directives on class attendance, homework completion, preparation for class, participation in class, attention, concentration, effort, persistence, and avoidance of risk behaviors, such as skipping school, etc.).

Results

The questionnaire was developed to not only to allow participants' quick response to its 25 items but also to allow an easy to grasp presentation of results. Average responses of each item are displayed bellow in a line graph that allows very straightforward inferences (Figure 2).

	Strongly Agree 1	Agree 2	Disagree 3	Strongly Disagree 4
Most of what is learned at this school is interesting				
The structure of the courses is good				
There is a good deal of choice over how students go about learning				
Most of what is learned at this school has "real world" application				
By studying at this school students guarantee a very successful future				
The value for money of the education provided by this school is high				
The teachers are knowledgeable at this school				
Teachers' explanations really help students grasp things better				
Teachers don't just give information on the subject; they are concerned with improving…				
The classroom quality of learning materials is high at this school				
Teachers expect all students to succeed at this school				
Teachers are approachable and provide extra assistance when students need it				
Students establish a close relationship with teachers at this school				
Students really have to understand the subject to get good marks in this school				
Students receive appropriate workload and study pressure at this school				
The availability of learning resources is more than enough				
Students are provided with good quality facilities				
Students are provided with good quality academic support				
Students are provided with beautiful, comfortable and very easy to get around facilities				
Students are provided with a wide choice of extracurricular activities				
This school deals effectively with most learning hindrances				
This school makes sure that students' raised concerns are well responded				
Most people at this school trust each other				
The primary concern of the headmaster in this school extends beyond rules and regulations…				
I feel I really belong to this school, I would recommend it to others				

Figure 2: Average responses of each item by all the students participating in the study.

As it is possible to see, students perceive Macau secondary school structure positively, though not enthusiastically. We can better understand this comprehensive measure of student perception through a simple bar graph providing a very elucidative picture of how Macau students, in general, perceive their schools along the main item aggregating factors identified by this study (Figure 3).

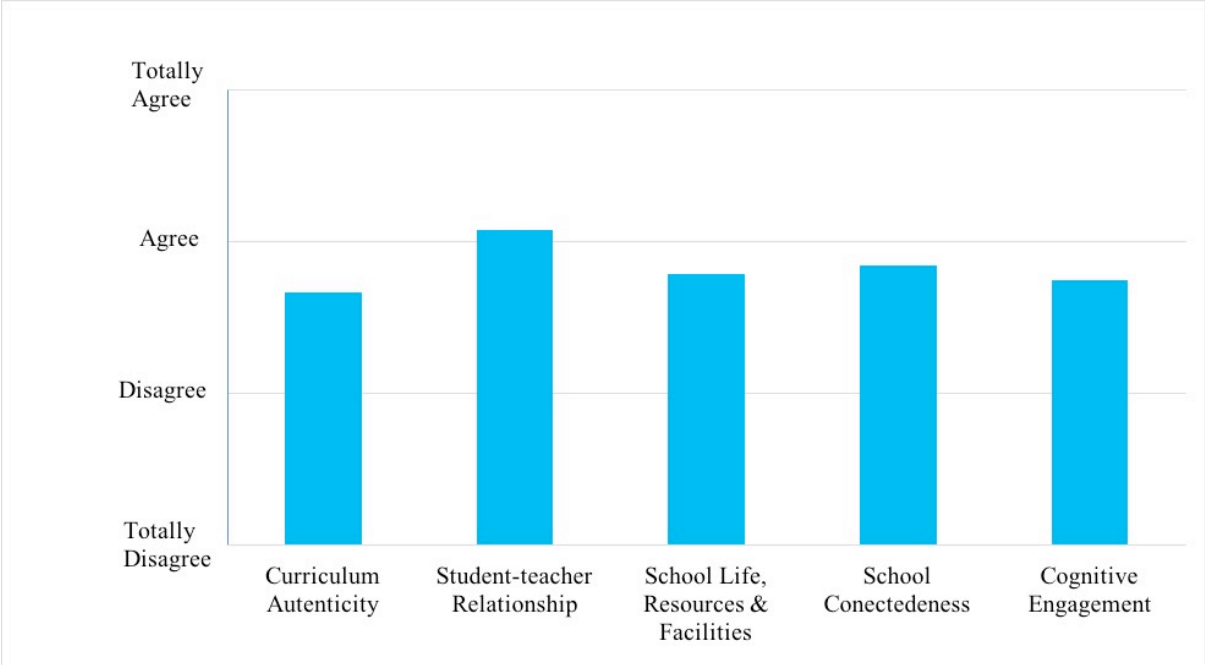

Figure 3. The average score of each factor by all students participating in the study.

The student-teacher relationship is the dimension of school experience students seem to perceive more favorably. Curriculum authenticity, on the other hand, seems to be the area where students' perceptions are the least positive of all. This latter result is disturbing, particularly in the context of Chinese pragmatic orientation and "extrinsic career-based motivation in making educational choices" (Lai *et al*., 2011, p. 282). Chinese pragmatism is well known and superbly illustrated by Deng Xiaoping's statement: "it doesn't matter whether a cat is white or black, as long as it catches mice" (Kesselman *et al*. 2009, p. 64). This result may suggest that the "cat" of Macau secondary school structure is experiencing difficulties in catching some "mice." The result may even contribute to explain why, year after year, so many Macau secondary school graduates choose to drop out the system and further their studies in Taiwan or Mainland China.

This global picture may well not be reflected in the results for specific schools, and no such claims are inferred. The study could not draw distinctions between schools, as the number of participants from each school does not constitute a representative sample of its student body. Nevertheless, the distribution of student perceptions already suggests that significant differences will ultimately be found among schools in Macau (Figure 4).

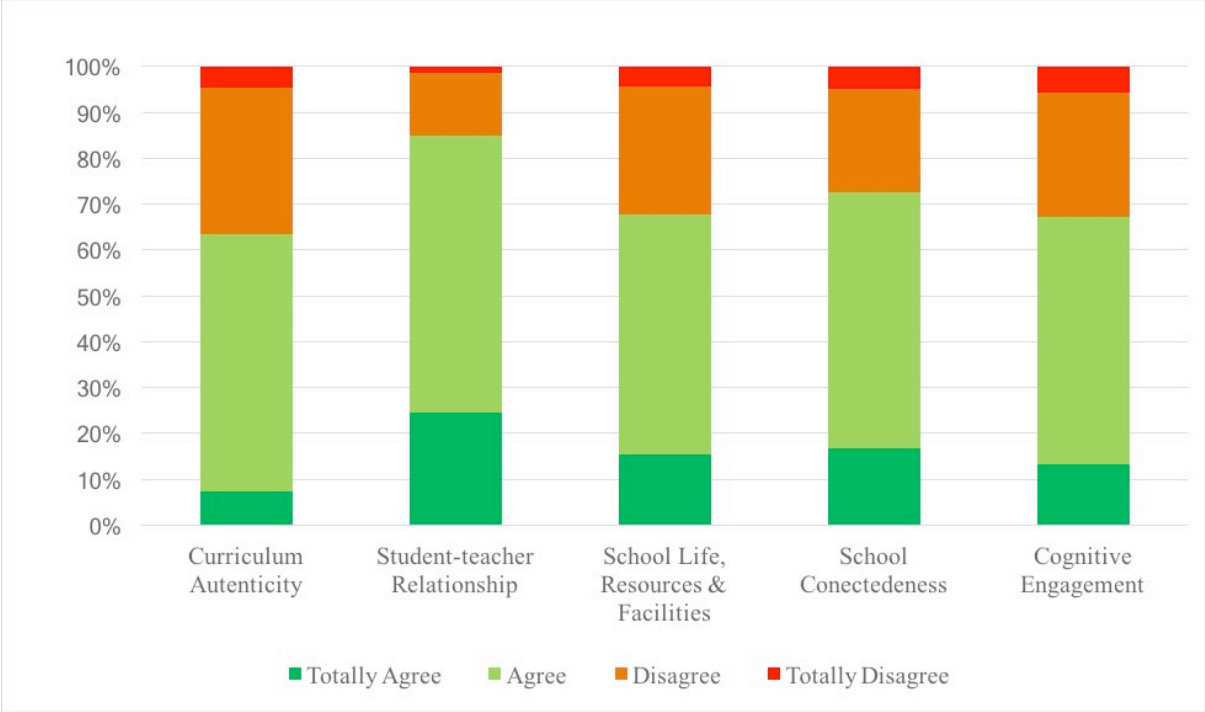

Figure 4. Distribution of responses of each factor by all the students participating in the study.

The perceptions concerning the curriculum and the cognitive engagement of students are the ones where these differences appear to be more striking. The unevenness of results in these areas can be a reflection of the fact Macau keeps being a highly stratified educational system, with schools segregated by the ability of its student body.

Conclusion

Some caution is recommended against drawing sharp conclusions from the above results. This study was not designed to test any hypotheses or theories. The rigorous assurance that the results will generalize to other samples of the same population requires a subsequent move into confirmatory factor analysis, which is clearly beyond the scope of this study.

Despite its exploratory nature, however, the study offers some insight into how Macau secondary school structure is perceived by its students. Results point to the student-teacher relationship being the aspect Macau students perceive more favorably. Results may also indicate the curriculum and the cognitive engagement of students as the two areas of major concern associated with secondary school education in Macau. Any of these dimensions of school effectiveness deserve urgent research attention. Particularly, the latter. Do the perceived levels of cognitive engagement report a flaw in the engagement of many students, or are them an inherent trait of the cognitive engagement expected at some schools? A non-negligible proportion of Macau secondary students, particularly the ones in lower track schools, is likely receiving low-quality instruction.

Student perceptions are valuable tools to inform educational improvement decisions. Despite its limitations, this study suggests that Macau market-based mechanisms of

regulating education may be privileging specific interests of a reduced number of institutional stakeholders and keeping competition between schools far from being healthy and at the service of public interest. While respecting and showing proper deference towards these other interests, all with their own legitimate claims on the educational system, it's possible to argue that there is plenty of room for holding Macau schools more accountable for ensuring that government subsidies are used appropriately and that each and every one of its students is on the path towards knowledge and achievement.

The primary purpose of education is no longer the spread of obedience like it used to be under the conditions of aristocratic societies. It's hardly acceptable that post-colonial education in Macau can accommodate so many students (and schools) disregarding sophisticated learning tied to real-world issues. If a higher proportion of Macau students can see fulfilled their civil right to a world-class education, or simply avoid being subjected to lower educational expectations or alternate standards, this will not only be beneficial to their personal and professional future but, ultimately, to the future of Macau as a whole.

Acknowledgements

I thank Macau Foundation for funding this research, along with all participants in it, including survey respondents, research assistants and everyone who has suggested improvements.

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