Asia Pacific Education Review
2003, Vol. 4, No. 2, 161-169

An Exploratory Study on Singaporean Secondary School Students' Perceptions of Choral Learning

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This paper explores 122 secondary school students' perceptions of the choral learning environment. A survey questionnaire was developed taking into consideration the responses of a pilot study in which students were requested to list what they liked and disliked about the choir. The participants rated their degree of agreement on a five-point scale on psychosocial and other perspectives of choral learning. Three research questions were posed: (1) What are Singaporean secondary school students' perceptions of choral learning? (2) Are there any gender differences in their perceptions of choral learning? (3) Are there any across school differences in their perceptions of choral learning? The findings of the study were discussed from the perspective of Singapore's education and learning environment research.

Keywords: Choir, learning, Singapore, secondary school students, holistic education.

Singapore's education and holistic development

Since 1997, Singapore's educational system has introduced gradually new initiatives aimed to develop every child holistically. The aspiration to educate every child holistically was spelt out implicitly through three national initiatives, and became more explicit in a learning outcome document and its subsequent call for developing every child's potential. The three initiatives were released between April and June, 1997.

The Thinking Schools and a Learning Nation (TSLN, Goh, 1997) framework was read by the Prime Minister at the 7th International Conference on Thinking, with the intent to call for a nationwide involvement in developing a culture of learning beyond high academic achievement (June, 1997). Among the highlights was the need to foster creativity, critical thinking, and problem solving competence. The National Education (NE) program (Lee, 1997) focused on implanting the sense of belongingness among the young. The Information Technology (IT) Master plan (Teo, 1997) implemented programs to up-grade the IT facilities of educational institutions as well as the IT competence of teachers and students.

The essence of these three initiatives was then integrated into a document, the Desired Outcomes of Education (DOE) (MOE, 1998). The DOE spelt out ideal educational outcomes in terms of competencies of students at various school levels and in cognitive (TSLN and IT Master plan) and affective (NE) domains. Subsequent discussions at the policy level focused on compulsory, preschool, early childhood, and special education. The inception of the Ability-Driven Education (ADE) paradigm (MOE, 1999) attempted to integrate the above-mentioned initiatives, educational outcomes, and discussion.

The ADE delineated more explicitly the importance of individual differences, the uniqueness of every child, and opportunities for all. Along this ADE paradigm, the School Excellence Model (SEM, 2003) was incepted to empower school leaders to identify their staff's strengths and niche

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areas for improvement. Underlying this model was the awareness of promoting staff welfare and students' wellness. The move to holistic education has been piecemeal and gradual. At times, it has appeared challenging, as the philosophy of holistic education might not flow smoothly into a culture of education rooted in a competitive system that implements streaming and ranking.

Co-curricular Activities and Choral Learning

In a holistic educational framework, Singapore's educational system aspires to a system in which every student should be given the opportunity to develop optimistically and fully in intellectual, emotional, and interpersonal domains (MOE, 1998). To achieve this, intermediate outcomes of education are delineated. Among them is the cultivation of appreciation of aesthetics through not only the formal classroom curriculum but also the co-curricular activities (CCAs) that each individual school organizes. The CCAs serve as healthy recreation. Students learn, through participation in CCAs, some forms of self-discipline and teamwork. The ultimate aim of CCAs is to develop the student's physique and character.

Our paper examines secondary school students' perceptions of choral learning. We identified choir as our domain of study, as it has been a highly regarded non-academic activity. In line with the nation's aspiration to nurture every person's creative competence in multiple disciplines, choir or music programs have received substantial support. Choral programs in the secondary schools are developed with the support of the Music Department of the CCA branch at the ministerial level. The support ranges from providing professional instructors attached to schools and organizing complimentary workshops for potential choir teachers, to exposing students to large-scale national events, such as the Singapore Youth Festival (SYF) Central Judging, and the National Day Parade.

After six years of elementary education, Singaporean students, based on their Primary School Leaving Examination (PSLE), are streamed to Express, Normal Academic, and Normal Technical streams. They then take the Ordinary level of examination after four years (Express and Normal Technical) or 5 years (Normal Academic) of secondary schooling. Singapore secondary schools introduce choices in the subject areas and CCAs. For university admission, in 2003, CCAs were given a considering status in addition to the nationwide examination results.

Under the ADE paradigm, students are expected to be active in academic and non-academic disciplines. The introduction of CCAs, for instance, was meant to relate student learning to multidisciplinary exposure and alternative assessment. Specifically, the CCAs can help implant students' awareness to be responsible, healthy, socially engaging, and culturally sensitive citizens. Students learn to take part actively by making choices. They are exposed to authentic experiences that will likely help uncover and develop their potentials in non-academic domains.

Other Rationales for the Study

Our study examined students' perceptions of choral learning from their personal and interpersonal perspectives, as well as from their interactions with the subject (e.g., contents and structure), their physical environments, and school expectations. A person's perception of the learning environment is constructed with reference to his(her) contact and experience with multiple factors. The factors include alternative curricula (Welch & Walberg, 1972), alternative school (Fraser, Williamson, & Tobin, 1987), student and teacher perceptions of the same classroom environment (Fraser, 1984; Raviv, Raviv, & Reisel, 1990), the class (Anderson & Walberg, 1972), and type of school (e.g., spiritual or government, Dorman, Fraser, & McRobbie, 1994), just to name a few. Gender, a social category, to some extent can influence a person's view of the learning environment. Studies revealed gender differences in learning environment perceptions. It was found that male pupils preferred a competitive learning environment, in contrast to female pupils' preference for personal and cooperative learning environments (Byrne, Hattie, & Fraser, 1986; Owen & Straton, 1980). Females also held more favorable perceptions of their classroom environments than males (Fraser, Giddings, & McRobbie, 1995; Fisher, Fraser, & Rickards, 1997; Henderson, Fisher, & Fraser, 1995).

A school class is regarded as a social system (Getzel & Thelen, 1972). The classroom-learning environment is made up of psychosocial factors such as student cohesiveness, self-esteem, confidence, sense of belonging, and motivation (Goh, 2002). A student's learning process is affected by the interpersonal relationship s/he has with his (her) teacher (Brekelmans, Wubbels, & Brok, 2002). The learning environment and learning performance are affected by the interrelationships and communications among all members in the classroom community (Doyle, 1979; Goh & Fraser, 2000).

Hence, it is indispensable to ensure a positive classroom climate for effective learning.

Recently, in Singapore, most of the studies on learning environments employed adopted questionnaires (Fraser, 2002) or were conducted in laboratory environments (Goh, 2002; Wong, Young, & Fraser, 1997). Researchers in the field of learning environments, in the past several decades have selected methods to uncover psychosocial aspects of the classroom-learning environment: direct observation, the assessment of student and teacher perceptions, and case studies (Walberg & Anderson, 1968). Questionnaires have been designed to assess student perceptions of specific teacher behaviors (see e.g., Woods & Fraser, 1995). Survey papers (see e.g., Fisher & Waldrip, 1997) have been developed to assess culturally sensitive learning environmental factors.

Our study on choral learning was exploratory in nature. Instead of using adopted questionnaires, we employed open-ended questions to uncover secondary school students' views of choral learning. Based on their responses and researchers' observations, we designed a questionnaire to examine the following research questions: (1) What are Singapore's secondary school students' perceptions of choral learning? (2) Are there any gender differences in their perceptions of choral learning? (3) Are there any across school differences in their perceptions of choral learning?

Method

Participants

In total, 122 secondary school students participated in a paper-and-pencil survey. They were students from two suburban public schools. There were 83 (68.1%) female and 39 (31.9%) male students. The participants attended weekly choral lessons under the school's non-sport co-curricular activity. Their mean age was 13.6 years old with a standard deviation of .9 years. Nearly half of them (n = 62) were from a school that had an established choral program, whereas the other half (n = 60) were from a school with a new choral program.

Survey

The survey was developed with main reference to the outcomes of a pilot study participated by 80 secondary school students (age range: 12-17 years old), who attended regular choir lessons to obtain their responses on what they liked and disliked about choir. The students were requested to write one event or aspect each, of what they liked and disliked about choir. In approximately 10 to 15 minutes the students wrote their responses on a piece of paper. The responses were categorized according to themes: "myself" (e.g., I love to sing, and I like to express my feelings), "my instructor" (e.g., she teaches well, and she is caring), "my peers" (e.g., they are friendly, and they are confident), "the choir learning process" (e.g., it is fun), and "choir learning outcomes" (e.g., choir provides us the opportunity to perform). In addition to the outcomes of the pilot study, the researcher communicated with the choir instructor, and added some other relevant items and categories such as the contents of the choir lessons, its structure, and the school's expectations.

The questionnaire for the main study had two sections. Section 1 included items related to demographic information: age, gender, and school and self-report questions related to interest in the choir, and benefits of participating in the choir. Section 2 comprised items describing experiences of choral learning in the following aspects: my-self, my instructor, my choir peers, my school, and the choir contents/structure (see Yee, 2003, for the complete list).

Procedure

The questionnaire was distributed to the participants during one of the choral meetings between September and October 2002. The participants first filled in demographic information, and indicated their interest in the choir (yes or no). They then rated the degree of agreeableness of items that described their choral learning on a 5-point scale with anchors of 1: strongly disagree, 2: disagree, 3: agree somewhat, 4: agree, and 5: strongly agree. The following instructions were shown: "*You are invited to fill out a survey that intends to find out your view of choral learning. Your response is voluntary and confidential. There is no right or wrong answer. Please rate the items using a 5-point scale. The rating you choose should correspond closely to your view. Thank you for your participation.*" A sample item was employed to demonstrate how the participants should circle their responses. On average, the participants spent about ten to 15 minutes to complete the questionnaire.

Results

The descriptive statistics of mean and standard deviation were computed for all items. The skewness and kurtosis of the items were examined. As none of the items had a value of skewness or kurtosis of 1.64 and above (Bauer,

1984), the data were subjected to factor analyses and t-tests. The estimate of Cronbach's alpha for the items related to choral learning (part two) was high, at 0.97. When alpha reaches 0.70 and above, we assume that internal consistency of the instrument exists (Cortine, 1993).

Items with a mean value of 3.5 and above were

Table 1. *Secondary students' views of choral learning: Factor analysis and Cronbach's alpha*

	Factor loading	Var.	Eigen-Value	Alpha
Myself		30.9	9.6	0.89
I love to sing	0.85			
I like to express my feelings through singing	0.81			
I like to learn more songs	0.71			
I would encourage more students to join the choir	0.64			
I would choose to remain in the choir, even if I have a chance to change to another co-curricular activity	0.64			
For me, the choir is fun	0.61			
My instructor as classroom manager		11.5	3.6	0.86
Selects suitable materials and resources	0.88			
Has a clear voice	0.84			
Is a role model	0.77			
Monitors our progress closely	0.68			
Sets appropriate expectations	0.59			
Rewards our performance appropriately	0.50			
My choral peer		8.5	2.7	0.87
Are friendly, share resources willingly	0.84			
Approachable/easy to make friends with	0.77			
Are united/like each other	0.74			
Are co-operative/work together closely	0.70			
Are confident/have high self-esteem in choir	0.66			
Are motivated/enjoy singing together	0.65			
My school		5.6	1.7	0.81
Encourages the choir to take part in competitions and concerts	-0.80			
Involves the choir sufficiently in school events	-0.80			
Is proud of the choir	-0.75			
Sets appropriate expectations of the choir	-0.66			
The choir contents/structure		5.0	1.5	0.86
The songs are challenging	0.76			
The length of the session is just right (not too long)	0.75			
There is sufficient number of scores for everyone	0.75			
The pace of learning is just right	0.73			
The songs are well selected	0.69			
The schedule of the choir is appropriate (I can cope with it)	0.69			
My instructor as facilitator		3.8	1.2	0.79
Expects us to work in a group co-operatively	0.76			
Gives us opportunities to share our strengths and weaknesses	0.74			
Is caring/allows for trial and error and accepts our mistakes	0.55			

subjected to further analysis. In total, 31 items were factor analyzed and accounted for 65.1% of variance. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO-MSA, 0.84) and the Approximate Chi-squares (2191.775, df. = 465) from Bartlett's test of sphericity (BTS) were calculated at p less than .0001 significant level for each of the scales. The rotation method used was the Oblimin with Kaiser normalization, and the extraction method was the principal component analysis. Items with a factor loading of 0.30 and above were selected for interpretation. Cronbach's alphas for the six factors were 0.79 and above. Table 1 outlines the results of factor analysis and alphas. The co-relations among factors were between -0.30 and 0.40, mainly around 0.20 and 0.30.

The items of each factor were summed, and the sum was divided by the number of items to yield new scores, where mean, standard deviation, final cluster centers and discriminant matrix were computed (see Table 2). Cluster analysis sorted the participants into two groups or clusters. Thirty-seven (30.3%) participants belonged to cluster C1, with a final cluster center for all categories, less than 3.5 except the category "my instructor as classroom manager". Eighty-five (69.7%) participants were grouped to cluster C2, with a final cluster center for all categories, more than 3.7. The distance between C1 and C2 was 2.2. Discriminant analysis on the two clusters yielded a high percentage (93.4%) of original grouped case being correctly classified.

The two sample independent t-test was computed for the six factors using the new scores. The t-test yielded significantly different results for female (M = 3.90, SD = 0.80) and male (M = 3.51, SD = 1.01) participants for the category of "myself" (t = -2.28) at $p < 0.05$ level. The same t-test was computed to find out differences between the participants from a school with an established choral program (school 1) and a school with a new choral program (school 2). Participants of school 1 scored significantly higher than their counterparts of school 2 for three categories at the 0.005 and 0.05 levels. (1) Myself (school 1: M = 4.03, SD = 0.62; school 2: M = 3.51, SD = 1.04; t = 3.40), (2) choral curriculum (school 1: M = 3.77, SD = 0.67; school 2: M = 3.43, SD = 0.87; t = 2.47), and my choral peers (school 1: M = 3.63, SD = 0.67; school 2: M = 3.28, SD = 0.80; t = 2.58).

A 2 x 2 (gender, school) multivariate analysis of variance yielded main school effects (F 121, 1 = 3.41, $p < 0.005$). Tests of between-subjects for category of choral contents yielded main effects for school (F121, 1 = 11.62, $p < 0.005$) and school versus gender (F121, 1 = 5.15, $p < 0.05$). The same tests also yielded between subjects effects for the categories of myself (F121, 1 = 11.35, $p < 0.005$) and choral peers (F121, 1 = 5.14, $p < 0.05$).

Discussion

Perceived Choral Learning

The secondary school students rated moderately high choral learning, the perspectives of their instructor (as classroom manager and facilitator), their interest in singing and the choir, their school support for the choir, their peer involvement in the choir, and the contents or structure of the choir (see Table 1). This finding is in line with the research framework of the classroom environment, that learning is influenced by psychosocial factors such as self-engagement as well as teacher, peer, and school involvement (see e.g., Fisher & Waldrip, 2002). From means, the Singaporean secondary school students in our study acknowledged highly the instructor's role as a classroom manager, and the instructor's role as facilitator. The participants' responses confirmed findings of previous studies on Singaporeans' perceptions of teacher roles as facilitators in secondary schools and as

Table 2. *Mean, Standard Deviation, Cluster Centers and Discriminant Structure Matrix*

	M	SD	Final cluster center, C1	Final cluster center, C2	Discriminant structure matrix
My instructor as classroom manager	4.11	0.59	3.70	4.28	0.43
My instructor as facilitator	3.90	0.68	3.41	4.11	0.45
My school	3.77	0.77	3.24	4.00	0.50
Myself	3.77	0.89	2.93	4.14	0.67
The choir contents/structure	3.60	0.79	2.88	3.92	0.63
My choral peers	3.46	0.75	2.87	3.71	0.50

Note. Distance C1-C2 = 2.2; n (C1) = 37, n (C2) = 85; functions at group centroids, C1 = -1.81, C2 = .79.

classroom managers across school levels (Tan, 1999). They agreed moderately with their school's support for choral sessions, their interest in the choir, and the choral structure and contents. They were critical in terms of their peers' social competence and confidence, and rated the related items moderately low (see Table 2). Their ratings for physical environments and other teacher roles (e.g., teacher as creator or innovator) were low (M below 3.5; see Yee, 2003). Future studies should revisit the connotations of their low ratings on physical environments and other teacher roles. Do the low ratings indicate lower significance or less importance, or do they imply the absence of quality?

About one third of the participants (n = 37, 30.33%) belonged to the cluster (C1), where final cluster center values for nearly all categories were moderately low (between 3.41 and 2.87). Of the total participants in this group, nearly three quarters (n = 26, 70.3%) were from the school with a newly formed choir and choral program (school 2). More than two thirds of the participants belonged to the cluster (C2), where final cluster center values for all categories ranged between moderately high (3.71) to high (4.28). Of the total participants in this group, sixty percent (n = 51) were from the school with an established choir program and a long history of choral culture (school 1). The composition of members according to gender was similar for the two clusters, resembling the percentage of female and male participants of the study. This finding seems to suggest that school choral culture to a certain extent influences the participants' views on choral learning in relation to the instructor's behavior to their motivation or interest, the school's support, their peers' social and personal competence, and the choir's structure and contents. We shall discuss this observation further in the forthcoming session under the sub-heading "School Difference".

Gender Difference

Female participants in the study rated nearly all categories higher than their male counterparts. The former group rated the category "myself" significantly higher than the latter. Our results supported findings of the earlier research, that females held more favorable perceptions than males, of classroom environments (Fraser, Giddings, & McRobbie, 1995; Fisher, Fraser, & Rickards, 1997; Henderson, Fisher, & Fraser, 1995). Research has shown that a competitive learning environment is the preference of male students, whereas preference of female students' is for a personal and cooperative learning environment (Byrne, Hattie, & Fraser, 1986; Owen & Straton, 1980). Future studies should attempt to capture the culture of a competitive learning environment.

School Difference

From means, the participants in our study differed in their perceptions of choral learning significantly in three aspects: myself, school, and choral curriculum; those in School 1 rated higher than those in School 2. To find out differences in the participants' perceptions across schools, we referred to the self-report responses with regards to voluntary or assigned participation. Two thirds to three quarters of the participants in School 1 joined the choir voluntarily (n = 41, 66.1%) and were encouraged by others (n = 45, 72.6%). One-third of them were assigned to join the choir (n = 120, 32.3%). In contrast, less than half of the participants from School 2 voluntarily participated in the choir (n = 29, 48.3%) and were encouraged by others (n = 26, 43.3%). Instead, sixty percent (n = 36) of them were assigned to the choir, i.e., they were not given a choice.

We attribute the differences in perceptions of choral learning in the areas of personal interest (myself) and the quality of choir members' participation (how committed the choral peers were in learning together) to the presence of choice in school 1 and absence of choice in school 2. Our field observations noted the following remarks. In School 1, recruitment of choir members was based on students' personal interest and through the encouragement of teachers or peers. Joining the School 1 choir was on a voluntary basis. However, in School 2, all first year secondary school students were subjected to an audition or a selection test for some CCAs, including the choir. Once the student has passed the audition, s/he would be subjected to being allocated, regardless if s/he was interested in the choir. The student could appeal to opt out, but only a handful of them succeeded.

The two schools engaged the same instructor. Hence, there was no difference in the students' ratings of their perceptions in this area.

The participants from School 1 had a significantly higher rating than their counterparts in School 2 for choir contents and structure. In School 1, the choir was allowed to have the choice of pieces (including spiritual songs), and to pace the rate of learning. In contrast, school 2 had a structured schedule of learning and limited the selection of songs. The results of our study show that school culture to a certain extent influences students' perceptions of learning.

Holistic Education

There was nearly no difference in percentage for statements related to "choir creates opportunities to make friends" (school 1: n = 58, 93.5%; school 2: n = 56, 93.3%), and "choir nurtures creativity" (school 1: n = 43, 69.4%; school 2: n = 41, 68.3%). Nearly all participants regarded the choir as a social activity to get to know new friends, and two-thirds of them considered choral education as part of creative education. To establish a positive and creative choral learning environment, we refer to Wills' (1995) recommendations for dance, for some insights. Taking the Singaporean choral learning environment into perspective, it is imperative to establish a non-threatening and professional relationship and communication between the instructor, the school, and the choir members. The three parties must come to terms to set common goals to optimize the choir members' learning outcomes.

From the self-reported responses, the majority of the participants in School 1 agreed to the statements that "choir makes their day fun" (n = 54, 87.1%), "choir removes stress" (n = 50, 80.6%), and "choir enhances intelligence" (n = 54, 87.1%). A lesser percentage of the participants in School 2 agreed to these statements: "choir makes my day fun" (n = 36, 60%), "choir removes stress" (n = 30, 50%), and "choir enhances my intelligence" (n = 44, 73.3%). We can attribute the positive perceptions of choral learning of the participants in school 1 to the presence of choices in choir participation, learning pace, and rich choral contents and flexible structures. Future studies should explore these aspects further.

In line with the aspiration of holistic education, choral education can serve as an additional outlet for group therapy, meeting the needs of students, providing them with the freedom of emotional expression, social support, and cognitive management skills. Group therapy in the informal choral setting can provide opportunities for emotional experiencing, self-expressiveness, cathartic experience, social acceptance and support, guidance, and training in areas of social deficit (see also Shechtman, 2002). Future research should examine how the choir in the context of group therapy can promote students' wellness, enhance positive emotions, wisdom, health, and creativity.

Concluding Remarks

Our exploratory study suggested that the school as a system entails a specific and dynamic organizational culture. In adopting national policies and initiatives, schools impose their values and expectations that influence their students' perceptions and consequently, their quality of learning. The investigation of students' perceptions awakens us to the inter-relations between external factors (e.g., schools' culture, organization, and structure of curricula) and students' personal views (e.g., perception). With open-ended questions and direct classroom observations, items generated captured the essence of the learning environments from the communication styles of the students. The phrases and sentences were structured according to the style of expressions of Singaporean secondary school students. To develop a culture-sensitive questionnaire, the present exploratory study should be extended to a large number of secondary school students across streaming levels (e.g., express, normal academic, and normal technical). Similar surveys should be carried out in other CCA and non-CCA settings. A general questionnaire based on Singaporean educational philosophy, initiatives and policies, as well as classroom climates can be cross-validated with the existing learning environment questionnaires. In line with the aspirations of holistic education, students should be engaged actively in co-forming their learning climate. Developing questions from the students' perspectives is one of the many methods. It can and should be accompanied by direct classroom observations and interventions, interviews and dialogues, to name a few.

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Received September 2, 2003
Revision received November 24, 2003
Accepted December 15, 2003