
**Life Skills Development and School Connectedness Among
Senior Secondary Students in Hong Kong:
Brief Report on Follow-Up Survey**

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ABSTRACT

In November 2007, the Life Skills Development Project Team in Hong Kong conducted a questionnaire survey of 12,241 senior secondary students to determine their level of self-efficacy in applying life skills for academic, personal-social, and career development as well as the relations of students' self-efficacy to school connectedness. In November 2008 a follow-up study was conducted involving 5838 senior secondary students in 38 secondary schools in Hong Kong. This report summarizes the results of the follow-up survey. This survey had two purposes: firstly to determine any association between students' self-efficacy scores obtained in November 2008 (Time 2) and a range of student characteristics collected in November 2007 (Time 1); and secondly to assess any changes in students' level of self-efficacy after a period of 12 months. The findings indicated that school connectedness and parents support are associated significantly with students' level of self-confidence in applying life skills in all areas in Time 2. Comparing the scores of students in Time 2 with their scores in Time 1, the students' self-confidence in applying life skills was relatively stable. The findings suggested that the S.5 students had increased slightly in their personal-social life skills but declined slightly in their confidence in applying career life skills. The S.7 students had increased slightly in their personal-social and academic life skills. Brief suggestions for school intervention and support are provided.

Key Words: self-efficacy; life skills; school connectedness, family support, guidance and counseling; Chinese; academic development; personal-social development; career development

INTRODUCTION

Life skills are the everyday competencies that facilitate an individual's academic progress, personal and social development, and positive career planning. Examples include study skills, work habits, interpersonal relationship skills, knowledge of self and others, self-management and leadership skills, financial management, decision-making, problem solving, career planning, job hunting, and career goal setting (Gysbers & Henderson, 2000; Yuen, Lau, Leung, Shea, Chan, Hui, & Gysbers, 2003). Gazda, Childers, and Brooks (1987) suggest that such life skills are essential in four key domains, namely: family, school, community, and work.

Locally and internationally there is a growing concern that students often seem to lack adequate life skills (e.g. College Entrance Examination Board, 1986; Education Commission, 2000a; Watts, 2001), yet in an ever-changing society it is essential that all students become confident and competent in applying these skills. It is recognised now that schools (and guidance programs within schools) play an essential role in supporting students' life skills development.

Researchers have only recently begun to examine life skills development of students in schools and to determine the environmental and contextual factors that influence acquisition and enhancement of these skills. The evidence to date seems to support a view that there is a positive relationship between an individual's competence in life skills and his or her emotional adjustment (Darden, Ginter, & Gazda, 1996; Darden, Gazda, & Ginter, 1996); and it is believed that deficits in life skills may contribute to delinquent behavior (Farrell & White, 1998; Orpinas & Horne, 2006).

Most of the research studies to date have involved adolescents, and it is evident that for optimum personal development and autonomy as learners, students of this age must monitor their own level of competence in acquiring and applying such life skills and must work toward improving these skills and understandings where this is necessary. That is to say, all secondary students need to develop

positive beliefs about their own *self-efficacy* in applying life skills. ‘Self-efficacy’ is the term used by psychologists to describe an individual’s perception of his or her own competence and confidence in particular activities or endeavours (Bandura, 1997; McInerney & McInerney, 2006; Tsang & Hui, 2006).

Supporting Life Skills Development

There is evidence to suggest that life skills acquisition can be facilitated through appropriate education and training (Gazda et al., 1987; Gazda, Ginter, & Horner, 2001; Gottfredson, Jones, & Gore, 2002). For example, from the mental health counseling perspective, Gazda et al. (1987) developed a ‘life skills training’ (LST) model for use in comprehensive mental health promotion within the general population; and in the context of schools in the US, school guidance services responded to a need for proactive intervention by developing comprehensive programs. In 1970’s, Gysbers led a project to assist every American state in developing guides to implement counseling, career guidance, and placement programs in schools. The project set the course for the development and implementation of a K-12 comprehensive guidance program in the 1980’s and early 1990’s (e.g. Gysbers & Henderson, 2000; Lapan, Gysbers, & Sun, 1997; MacDonald & Sink, 1999).

Although the practicalities of teaching or training life skills are not the central focus of this particular study and report, it is still worth mentioning that the comprehensive guidance program referred to above consists of three key elements: content, organizational framework, and resources. Content consists of student life skill competencies grouped under the career, educational and personal-social domains. The organizational framework consists of structural components and program components. The program components include guidance (life skills) curriculum, responsive services, individual planning, and system support. The resources include personnel, financial and political resources. There are two goals in the comprehensive school guidance program, firstly to “assist students to acquire competencies to handle current issues that affect their growth and development” (Gysbers,

1998, p.46) and secondly, develop career consciousness in students to help them visualize and plan their future life roles, settings and events in order to make informed personal and career choices, and relate these to the present life events (Gysbers & Hendersen, 2006).

Using Bandura's self-efficacy theory (Bandura, 1997) researchers in the US have also attempted to develop measures to assess student performance within this framework (Lapan, Gysbers, Multon, & Pike, 1997). The findings suggested that life skills self-efficacy scales such as these could be used for evaluation of the effectiveness of guidance and support programs in schools.

School Connectedness

The term 'school connectedness' is often used synonymously to 'school bonding', 'school climate', 'teacher support' and 'student engagement', etc (Blum, 2005). Resnick, Bearman, Blum, et al. (1997) acknowledged the importance of studying school connectedness because this is the only school-related variable that was predictive for every single outcome. Thomas and Smith (2004) suggest that school connectedness is a modifiable factor for students' learning and development.

Whitlock (2006) conducted a research on school connectedness and the quantitative aspect revealed school connectedness was determined by four independent variables of meaningful roles (whether students are given the chance to be involved in the school), safety (students' perception as to whether the campus is safe and they would not be harmed), creative engagement (students are able to participate in causes of interest to them and to show off their talents) and academic engagement (students are able to perform and achieve in academic work). In her focus group analysis, she found that four domains, would emerge when the participants talked about the construct. The first domain, adult-youth relations, pertains to the students' perception that their teachers are willing to provide time and assistance to them and be caring enough about their life and development. The second domain, institution-youth relations, refers to the youth's perception that the school administrators are fair and rules are sensible enough to comply. The third domain, academic engagement practices,

refers to the students' opportunity to engage in academic tasks that can actualize their talents and bring about positive learning outcomes. Lastly, academic pressure is the students' perception of whether tests and the resultant stress are excessive. If they are excessive they would tend to diminish one's connectedness to school.

The Hong Kong Context

In Hong Kong, the government policy documents on comprehensive guidance programs have emphasized a need for systematic planning of developmental, preventive and remedial guidance activities along the lines of "whole person development and learning for life" (Education Commission, 2000b; Education Department, 2001; Education and Manpower Bureau, 2003). The comprehensive student guidance program includes four components: policy and organization for creating a caring culture; support service for teachers and parents; personal growth education for developing the life skills competencies of all students; and responsive services such as early identification of students at risk, and individual and group counseling (Lee, 2003).

In secondary schools, school guidance has also evolved from a remedial approach to a comprehensive developmental guidance and counseling program approach (Yuen, 2001). In a recent survey with secondary teachers, the findings suggest that some guidance activities, including guidance curriculum, individual planning, responsive services and system support, have been implemented. Class-teachers, guidance teachers, career teachers, life education co-ordinators and school social workers are performing multiple roles and are actively involved in various domains of guidance activities (Yuen, 2006). In an on-going research project supported by the Hong Kong Research Grants Council, the present research team has already conducted focus group discussions with upper primary and junior secondary students to explore students' perceptions of their own life skills development, and of the value of specific guidance activities in schools. The findings suggest that students' working relationships with teachers and with peers in school have positive impacts on their life skills

development (Yuen, Hui, Gysbers, Chan, Lau, Shea, & Leung, 2006). In addition, the present research team developed guidance curriculum materials and a set of inventories measuring Chinese adolescents' perceptions of self-efficacy in academic, personal-social, and career and talent development. Initial validation studies have shown the construct validities and internal consistencies of these measures to be satisfactory among Chinese adolescents (Yuen et al., 2004a; Yuen et al., 2004b; Yuen et al., 2004c; Yuen et al., 2005). Measures have also been designed to assess teachers' perceptions of the level of implementation of guidance programs in their schools (Yuen, 2006).

In a main survey using these scales to investigate students' self-efficacy beliefs related to their own life skills (conducted in November 2007), a total of 13,243 senior secondary students (S.4=8594; S.6=3490; missing data= 143) from 84 secondary schools took part. This report provides information from a follow-up survey of 5838 senior secondary students (now in S.5 & S.7; S.5=4189; S.7=1619) 12 months after the initial survey. In the following report the first survey is referred to as 'Time 1' and the follow-up survey as 'Time 2'.

Research Questions

1. To what extent are senior secondary students' self-efficacy scores in Time 2 related to student characteristics collected in Time 1 (i.e. parent education, parental support and control, community involvement, time spent on extra-curricular activities, time spent on homework, and school connectedness)?
2. To what extent have senior secondary students changed after a period of 12 months in their self-efficacy beliefs concerning their own ability to apply life skills in various domains of academic, personal-social, and career development?

METHOD

Main Survey (Time 1)

Participants and Procedures

In November 2007, the Life Skills Development Project Team from University of Hong Kong conducted a questionnaire survey of senior secondary students. One hundred schools had been randomly selected from the Education and Manpower Bureau's list of secondary schools in various regions of Hong Kong. Eighty-eight schools agreed to participate in the study and eighty-four schools returned completed questionnaires (response rate of 95.5%).

In each school, classes of students were selected randomly and invited to participate in the survey. In total, 12,241 students completed the questionnaire (boys = 6,065; girls = 5,968; gender data missing on 208 students). Data indicated that the sample included students from the school years S4 (70.2%) and S6 (28.5%).

The students were asked to complete the *Life Skills Development Self-Efficacy Inventories (Senior Secondary Form)*, which includes the Academic Development Self-efficacy Inventory (AD-SEI), Personal-Social Development Self-efficacy Inventory (PSD-SEI), and Career Development Self-efficacy Inventory (CD-SEI). Details of these instruments are described below. The complete instrument can be referred to in the Appendix.

Data Collection Instruments

The *Life Skills Development Self-Efficacy Inventories (Senior Secondary Form)* were designed by the present research team specifically for senior secondary students in Hong Kong. They comprise 3 main scales covering academic, personal-social and career life skills (see Appendix). Each of the

three main self-efficacy scales identified in Table 3 contains within it a number of smaller sub-scales representing different clusters of skills or behaviours. Each sub-scale contains 4 items together with a Likert-type rating scale. The instruments had been used in number of other studies with samples of senior secondary students, from which adequate evidence for validity and internal consistency of the instruments was obtained (Yuen, Gysbers, Hui, Leung, Lau, Chan, Shea, & Ke, 2004a; 2004b; 2004c). The psychometric properties of Life Skills Development Self-Efficacy Inventories for the present sample are presented in Table 3.

The School Connectedness Scale (SCS, Yuen et al., 2008) consists of 8 items measuring connectedness with teachers and peers on a 6-point Likert scale ranging from 1 (strongly disagree) to 6 (strongly agree). Higher scores reflect greater connectedness. Based on a literature review of school connectedness (e.g., McNeely, Nonnemaker, & Blum, 2002; Whitlock, 2006) and the focus group data, the items were written by the first author of this report and validated by an expert panel of guidance professionals and educators for use in this study. The psychometric properties of the School Connectedness Scale for the present sample are presented in Table 4. .

The Parent Support Scale and Parent Control Scale (PSS and PCS; Coker & Borders, 2001) are four-item instruments measuring parents' support and control from the adolescents' perspective. Items are rated on a 6-point Likert scale ranging from 1 (strongly disagree) to 6 (strongly agree). Higher scores reflect greater parental support and control. The *PSS* and *PCS* were translated into Chinese by the first author of the present study and back-translated by an independent translator. Items were reexamined and modified to ensure the meanings of the Chinese version were comparable to the original version. The psychometric properties of *PSS* and *PCS* for the present sample are presented in Table 5.

Personal Data Form

Student characteristics were solicited by means of a personal data form included with the survey questionnaire. Students' school *grade levels* were coded using S4 = 1, S6 = 2; *gender* was coded as male = 0, female = 1. Students were also asked to indicate the levels of their parents' education (reported separately for mothers and for fathers) selecting a description from 7 categories ranging from 'no formal education' through to 'university post-graduate education'. Students are asked to indicate whether they were born in Hong Kong. If not, their number of years since arrival in Hong Kong. To measure involvement in various leisure activities, students were asked to estimate in minutes their average time spent daily in physical exercise, leisure reading, and electronic games. Students were also asked to estimate in hours their average time spent per week in homework, revision, extra-curricular activities, and in voluntary service activities.

Details of the students and their characteristics are presented in Table 1.

Follow-Up Survey (Time 2)

In November 2008, the Project Team conducted the follow-up questionnaire survey of a sample of S.5 & S.7 students who participated in the survey in November 2007. Questionnaires were sent to 60 secondary schools that had agreed to participate in the follow-up.

The *Life Skills Development Self-Efficacy Inventories (Senior Secondary Form)* was used again for the follow-up. In the follow-up survey in November 2008 (Time 2), 5838 students now in S.5 & S.7 in 38 secondary schools returned completed questionnaires.

Analysis of data

The researchers were able to match Time 1 with Time 2 questionnaires for 4050 students' (1754 boys and 2253 girls; gender data missing on 43 students) by their date and month of birth and their class number, as indicated in the personal data form. Data collected on the educational level of participants' mothers and fathers revealed that 25.1% and 25.6% respectively had only primary or no education, 32.4% and 30.3% respectively had middle school education, 32.6% and 29.8% had high school education; and finally 7.8% and 11.8% respectively had some college education. Thus, the characteristics of the matched sample on such parameters as gender and parents' education closely approximated those of the cross-sectional sample. The personal particulars of the samples are shown in Table 1.

To answer research question 1, the students' scores for life-skills self-efficacy in Time 2 were correlated with the quantitative measures representing student characteristics at Time 1. Owing to missing data from some students on the specified student variables it was not possible to process data for all 4050 students. Correlation was conducted therefore for approximately 3785 cases for which complete data sets were available (See Table 6).

To answer the research question 2, the means and standard deviations for the total scores and for subscale scores were calculated, covering self-efficacy in the domains of academic development, personal-social development, and career development in Time 1 and Time 2. Paired sample t-tests were conducted to test whether the changes in self-efficacy scores in Time 1 and Time 2 were significant. Approximately, 29 paired-comparisons were available for processing. (See Table 2)

RESULTS

Research Question 1: To what extent are senior secondary students' self-efficacy scores in Time 2 related to the student characteristics collected in Time 1?

Pearson Product-Moment correlation yielded information summarized in Table 6. It can be noted at once that the majority of correlation coefficients are small, although in most cases statistically significant. It must be remembered that conducting correlation calculations with a large sample size quite often produces such a result, with very small coefficients being deemed significant. It is necessary therefore to apply common sense when determining which correlation coefficients are large enough to be of genuine interest. With this in mind, Table 6 reveals that across all three domains of life skills there is a positive correlation of approximately .204-.355 between senior secondary students' self-efficacy scores and their parent support, peer connectedness, and teacher connectedness. It would appear that students' positive relationships within the family and within the school situation are mildly associated with higher life skills self-efficacy. A smaller but interesting positive correlation can be noted between amount of time spent in revision of schoolwork and the scores for self-efficacy in life skills, particularly in the academic and personal-social domains. This suggests perhaps that some students with well-developed life skills realize the value of giving time to such revision. A small but significant *negative* correlation can be observed between time spent in playing computer games and life skills self-efficacy scores. The association, although weak, is evident in the academic, personal-social and career domains. All other student variables depicted in Table 6 are only weakly or negligibly associated with self-efficacy.

Research Question 2: To what extent have senior secondary students' changed after a period of 12 months in their self-efficacy beliefs?

Means, standard deviations and difference scores for the self-efficacy main scales and subscales at Time 1 and Time 2 are presented in Table 7. In both Time 1 and Time 2 most mean scores for the subscales are above 4.00 (out of a possible 6) indicating that in general the students had, and continued to have, a reasonable (although *not great*) confidence in their own ability to apply life skills. A score above 5.00 (e.g. Avoiding Drugs, Excessive Drinking and Smoking) would suggest a high degree of confidence in applying life skills. A score less than 4.00 among S.7 students (e.g. Time Management; Study & Exam Skills) would suggest a lower degree of confidence in applying life skills.

Over the 12-month period the academic and personal-social main scale and most subscale means (with the exception of 'Being a Responsible Learner; Avoiding Drugs, Excessive Drinking and Smoking') reported in Table 7 the Time 2 scores are higher than the Time 1 scores, indicating a very slight increase in students' confidence in self-efficacy. Of the 20 paired differences, 9 were significant at the $p < .01$ level and 3 at the $p < .05$ level for the S.5 matched sample; 12 were significant at the $p < .01$ level and 4 at the $p < .05$ level for the S.7 matched sample.

The significant decline ($p < .05$ level) was noted in the main-scale total scores for 'career development' domain among S.5 students. This decline in confidence in career life skills self-efficacy, although not large, seems to reflect a genuine and important change that occurs in a significant number of students as they progress from S.4 to S.5. Possible explanations for these changes are presented later.

DISCUSSION

Eggen and Kauchak (1997) have referred to adolescence as a 'period of uncertainty' in which individuals are struggling to establish their own identity and to recognise their own roles, strengths and weaknesses. It is understandable that adolescents may begin to feel a little less sure of their own abilities as they gain greater experience in life and become more emotionally and cognitively capable of reflecting upon their own skills, attributes, successes and failures. The current trend in Hong Kong is to consider students' 'holistic development', so the academic, personal-social and career life skills self-efficacy of the students have also been considered in this study. It has been encouraging to find that students' self-efficacy in applying life skills to career, personal-social and academic aspects were rather stable over the one year period. The effect sizes of the matched differences between Time 1 and Time 2 were all found to be below .20 (Table 7), indicating only a slight change.

There is some evidence in the literature to suggest that individuals coming from secure and supportive home backgrounds and with a strong network of friends, tend to cope best with the challenges emerging during adolescence (Ormrod, 2000). This may in part account for the positive correlations between parent support, connectedness to peers, connectedness to teachers, and life skills self-efficacy, identified in this study (Table 6). While schools can do little to improve relationships between members of dysfunctional families, they can do much to foster positive and supportive relationships among teachers and students, and among the students themselves in the school situation. Ormrod (2000) cites studies that indicate the great importance of close friendships within the peer group for healthy emotional and mental growth during the difficult period of adolescence.

There is little doubt that the observed slight decline in S.5 students' confidence in their own ability to apply career life skills can be attributed mainly to normal psychological development when adolescents are in transitions from high school to college or work. The possible reasons for this decline include the likelihood that by the time a student reaches S.5 he or she has become much more aware of the need

to start thinking about employment when they leave school, together with a growing realization that they must try to develop any strengths, abilities and interests they may have. Pressure from parents, and perhaps for school staff too, may have heightened this awareness to the point where some students may become anxious and a little less confident in their own abilities to meet these challenges. Many students enter senior secondary schools without any clear idea of their future goals for employment. According to Marcia (1980), adolescents need a period of time to explore various options for themselves in terms of possible careers and employment before they can achieve a true sense of direction. Teachers and guidance staff should be sensitive to this uncertainty about career planning and talent development in some students. Such students will benefit from practical advice at this time, and may need to be channeled into guidance activities specifically designed to help students focus on preparation for work and life beyond school. They may also need to be encouraged to participate in extra-curricular activities that help to develop special interests and talents.

On the more positive side, there are slight increases in confidence over the period of one year were within the Personal-Social Development Scale, in which the total 'difference score' did reach statistical significance for both S.5 and S.7 students ($p < 0.01$). Although it is often reported that adolescents lose some of their self-esteem, and worry about their personal appearance and their worth, there was no real evidence of this in this study. The students have maintained a reasonable level of confidence in their ability to communicate effectively with others, to respect and accept others, and to establish friendships with the opposite sex.

It is also reassuring to find that both S.5 and S.7 students have slightly increased in their academic self-efficacy related to 'academic planning' and 'learning from friends'. For the S.7 students, they also reported slight increase in 'time management' and 'study and examination skills'. However, both S.5 and S.7 students appear to be less confident in Time 2 in 'being a responsible learners'. This may be a result of examination pressures and stress in S.5 and S.7.

CONCLUSION

The results of this follow-up survey reveal relative stability in students' life skills self-efficacy over a period of one year as the students progressed from S.4 to S.5 grade and S.6 to S.7 grade. The areas in which slight decreases in confidence were most evident were related to students' career development. There were slight increases in confidence in aspects of personal-social and academic development.

It was mentioned above — and is repeated with emphasis here — that the mean scale item scores for this sample of S.5 and S.7 students tended to be ranged from 4.14 to 4.45 out of a possible 6 in the *Life Skills Development Self-Efficacy Inventory*. This suggests that S.5 and S.7 students' level of self-efficacy is 'reasonable', but certainly cannot be regarded as high. There is no room for complacency regarding students' automatic development of life skills. It is clear that schools need often to provide additional activities and support to ensure that all students develop and maintain effective life skills through adolescence, particularly in the domains of academic development and career development. Fostering positive peer relations and teacher-student relationships in school would appear to be one important priority within such activities.

This study has focused on the association between *student characteristics* and the development of life skills self-efficacy. Future studies should examine more closely the association between life skills development and *school characteristics*. In particular, we need to consider the possible beneficial effects of comprehensive school guidance programs including youth activities (Wood, Larson & Brown, 2009), classroom interventions (Clark and Breman, 2009) and individual career/life planning (Ho, Leung, & Chui, 2009; Lindahl, Long, & Arnett, 2002). To what extent are these programs effective in supporting and advancing students' life skills development over time?

Additional research is needed to clarify the complex relationships between changes in life skills self-efficacy, student characteristics and *school characteristics* (Lapan, Gysbers, & Petroski, 2003). There

is a need therefore to conduct qualitative case studies and longitudinal research of sufficient duration to study the long-term effects of guidance and counseling programs in Hong Kong. It is hoped that the opportunity will arise to collect such data at regular intervals over a longer period of time.

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Table 1
Personal Particulars of the Students in the Time 1 and Time 2 Samples

	Time 1 sample		Time 2 Sample		Matched follow-up sample	
	Frequency	%	Frequency	%	Frequency	%
Grade						
S.4	7162	70.1	-	-	-	-
S.5	-	-	4189	72.1	2845	70.1
S.6	3062	29.9	-	-	-	-
S.7	-	-	1619	27.9	1205	29.7
Gender						
Boys	4938	48.3	2680	45.9	1754	43.3
Girls	5193	50.8	3066	52.5	2253	55.6
Missing data	93	.9	92	1.6	43	1.1
Immigrant status						
Born in HK	7745	75.8	4290	73.5	3045	75.2
Not born in HK	2397	23.4	1488	25.5	976	24.1
Missing data	82	.8	60	1.0	29	.7
Mother's educational Level						
No formal education	400	3.9	251	4.3	155	3.8
Primary	2013	19.7	1206	20.7	861	21.3
Junior secondary	3159	30.9	1847	31.6	1312	32.4
Senior secondary	3501	34.2	1873	32.1	1322	32.6
Postsecondary	588	5.8	320	5.5	234	5.8
University	161	1.6	80	1.4	58	1.4
Postgraduate	118	1.2	70	1.2	25	.6
Missing data	284	2.8	191	3.3	83	2.0
Father's educational Level						
No formal education	325	3.2	213	3.6	132	3.3
Primary	2036	19.9	1268	21.7	905	22.3
Junior secondary	3146	30.8	1730	29.6	1226	30.3
Senior secondary	3146	30.8	1709	29.3	1207	29.8
Postsecondary	841	8.2	457	7.8	334	8.2
University	238	2.3	137	2.3	93	2.3
Postgraduate	181	1.8	102	1.7	53	1.3
Missing data	311	3	222	3.8	100	2.5

Table 2
Means and Standard Deviations from Personal Data Forms

Type of Activity	S.4 &S.6 Sample in Time 1 (n=9356 students)		S.5 &S.7 Sample in Time 2 (n= 5031 students)	
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>
<i>Daily activities (minutes)</i>				
Physical exercises	33.19	46.40	28.66	39.90
Reading	33.19	46.40	29.57	40.07
Electronic games	75.91	103.10	62.02	86.52
<i>Weekly activities (hours)</i>				
Time spent in home work	6.46	7.07	5.91	5.89
Time spent in revision	4.40	6.10	7.06	9.04
Time spent in extra-curricular activities	1.08	4.45	.60	2.77
Time spent in voluntary services	2.84	5.77	1.99	4.40

Table 3

Psychometric properties of the *Life Skills Development Self-Efficacy Inventories (Senior Secondary form : Time 1 and Time 2*

Scale and Sub-scale	Time	Item means mean	Item variances mean	Reliability		Fitness Index					
				Cronbach Alpha	χ^2	df	CFI	SRMR	RMSEA 90% CI		
Academic Development	1	4.16	1.16	.944	10507.232	160	.917	.046	.080 (.078-.081)		
	2	4.18	1.07	.947	5558.112	160	.916	.048	.082 (.080-.084)		
	Time Management	1	4.01	1.18	.827	45.628	2	.997	.010	.046 (.035-.058)	
		2	4.03	1.08	.829	15.965	2	.998	.008	.037 (.022-.055)	
	Study & Examination Skills	1	4.03	1.16	.811	126.260	2	.991	.017	.078 (.067-.090)	
		2	4.05	1.05	.825	62.322	2	.992	.016	.077 (.062-.095)	
	Learning from Friends	1	4.09	1.17	.859	44.757	2	.998	.009	.046 (.035-.058)	
		2	4.15	1.08	.864	61.284	2	.994	.014	.077 (.061-.094)	
	Educational Planning	1	4.06	1.26	.841	17.709	2	.999	.006	.028 (.017-.040)	
		2	4.11	1.17	.844	22.490	2	.998	.009	.045 (.030-.063)	
	Being a Responsible Learner	1	4.62	1.01	.786	158.303	2	.986	.021	.087 (.076-.099)	
		2	4.58	.96	.795	98.890	2	.984	.023	.098 (.082-.115)	
	Personal-Social Development	1	4.42	1.00	.968	105632.91 2	1710	.688	.061	.078 (.077-.078)	
		2	4.43	.92	.970	26869.990	1710	.859	.043	.056 (.055-.057)	
		Understanding Self	1	4.30	1.06	.701	11.078	2	.999	.007	.021 (.010-.034)
			2	4.31	1.00	.700	9.708	2	.998	.009	.028 (0.12-.046)
Understanding Others		1	4.56	.84	.717	447.165	2	.945	.047	.148 (.137-.160)	
		2	4.45	.85	.760	92.211	2	.981	.025	.095 (.079-.112)	
Avoiding Drugs, Excessive		1	5.39	.91	.846	30.632	2	.998	.008	.037 (.026-.050)	

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Drinking and Smoking	2	5.35	.96	.855	26.362	2	.997	.010	.049 (.034-.067)
Marriage & family Responsibilities	1	4.55	.94	.791	164.437	2	.980	.028	.090 (.078-.102)
	2	4.57	.88	.795	64.434	2	.990	.018	.079 (.063-.096)
Handling Setbacks	1	4.36	.89	.794	237.968	2	.977	.028	.116 (.105-.128)
	2	4.36	.84	.806	90.882	2	.986	.022	.094 (.078-.111)
Health & Physical Training	1	4.25	1.05	.769	57.772	2	.994	.013	.053 (.041-.065)
	2	4.26	.97	.778	58.992	2	.989	.018	.075 (.059-.092)
Cooperation & Team Spirit	1	4.41	.82	.766	250.552	2	.975	.029	.111 (.100-.123)
	2	4.40	.77	.778	188.688	2	.966	.034	.136 (.120-.153)
Leadership Skills	1	4.11	1.05	.846	21.079	2	.999	.006	.031 (.020-.043)
	2	4.12	.99	.850	11.631	2	.999	.006	.031 (.015-.049)
Management of Stress & Emotion	1	4.27	1.16	.747	20.232	2	.998	.009	.030 (.019-.043)
	2	4.28	1.08	.762	7.800	2	.999	.007	.024 (.008-.043)
Self-Evaluation Skills	1	4.38	.92	.790	11.991	2	.999	.006	.022 (.011-.035)
	2	4.40	.86	.803	3.013	2	1.00 0	.004	.010 (.000-.032)
Thinking & Expression Skills	1	4.32	.85	.769	20.518	2	.998	.008	.030 (.019-.043)
	2	4.34	.80	.783	30.668	2	.995	.013	.053 (.038-.071)
Sexual Knowledge & Relationship	1	4.44	1.14	.872	4587.555	2	.813	.100	.476 (.465-.488)
	2	4.46	1.02	.870	2036.526	2	.833	.094	.450 (.433-.466)
Leisure Time Management	1	4.58	.93	.838	149.910	2	.990	.017	.086 (.074-.097)
	2	4.55	.87	.845	42.851	2	.995	.012	.064 (.048-.081)
Financial Management	1	4.20	1.41	.697	393.148	2	.952	.047	.139 (.128-.151)
	2	4.26	1.25	.693	89.362	2	.956	.045	.133 (.116-.149)
Personal Goals Setting	1	4.24	1.00	.811	1216.841	2	.915	.061	.245 (.234-.257)
	2	4.28	.94	.814	765.499	2	.897	.067	.275 (.259-.292)

Career Development	1	4.36	1.00	.963	17996.918	237	.896	.043	.086 (.085-.087)
	2	4.30	.94	.967	8852.235	237	.906	.040	.085 (.083-.087)
Career Planning	1	4.43	1.00	.834	33.022	2	.998	.008	.039 (.028-.051)
	2	4.35	.97	.854	25.502	2	.997	.009	.048 (.033-.066)
Gender Issues in Career	1	4.47	.98	.792	46.851	2	.996	.011	.047 (.036-.059)
	2	4.38	.92	.815	27.825	2	.996	.011	.051 (.035-.068)
Training Selection	1	4.39	.95	.840	115.506	2	.993	.015	.075 (.063-.086)
	2	4.31	.91	.850	47.973	2	.995	.013	.068 (.052-.085)
Job Hunt Preparation	1	4.22	1.12	.831	435.002	2	.973	.035	.146 (.134-.157)
	2	4.20	1.04	.844	249.780	2	.972	.036	.157 (.141-.174)
Job Hunting	1	4.35	1.04	.812	55.650	2	.996	.011	.051 (.040-.063)
	2	4.29	.98	.82	55.149	2	.993	.015	.073 (.057-.090)
Career Goal Setting	1	4.29	.93	.858	45.434	2	.998	.009	.046 (.035-.058)
	2	4.26	.89	.862	27.024	2	.997	.009	.050 (.034-.067)

Note: CFI = Comparative fit index; SRMR=Standardized root-mean-square residual; RMSEA = Root mean square error of approximation;

CI=Confidence interval, Time 1 n = 10224, Time 2 n = 5031

Table 4
Psychometric properties of *School Connectedness Scale*

Scale	Time	Item means mean	Item variances mean	Reliability			Fitness Index		
				Cronbach alpha	χ^2	df	CFI	SRMR	RMSEA (CI)
Connectedness to Peers	1	4.62	1.13	.793	61.375	2	.996	.013	.054 (.043-.066)
	2	4.04	1.35	.816	22.466	2	.998	.010	.043 (.028-.059)
Connectedness to teachers	1	4.05	1.33	.843	94.010	2	.994	.013	.067 (.056-.079)
	2	4.55	1.13	.860	17.899	2	.998	.007	.038 (.023-.054)
Total Scale	1	4.34	1.23	.851	669.258	19	.980	.028	.058 (.054-.062)
	2	4.30	1.24	.869	315.116	19	.986	.029	.053 (.048-.058)

Note: CFI = Comparative fit index; RMSEA = Root mean square error of approximation; CI=90% Confident Interval; Time 1 n = 10224, Time 2 n = 5031

Table 5
Psychometric properties of *Parents Support Scale* and *Parents Control Scale*

Scale	Time	Item means mean	Item variances mean	Reliability		Fitness Index			
				Cronbach alpha	χ^2	df	CFI	SRMR	RMSEA (CI)
Parents Support	1	3.19	1.75	.790	3126.692	2	.824	.131	.392 (.381-.404)
	2	3.21	1.67	.797	2441.072	2	.772	.150	.466 (.450-.481)
Parents Control	1	3.52	2.09	.699	63.917	2	.991	.016	.055 (.044-.067)
	2	3.49	1.93	.724	29.200	2	.994	.014	.049 (.034-.066)

Note: CFI = Comparative fit index; RMSEA = Root mean square error of approximation; CI=90% Confident Interval; Time 1 n = 10224, Time 2 n = 5031

Table 6

Correlations between life skills self-efficacy scores in Time 2, and senior secondary student variables from Time 1

Variables	Academic Self-efficacy in Time 2 (n=3797)	Personal-Social Self-efficacy in Time 2 (n=3638)	Career Development Self-Efficacy in Time 2 (n=3785)
Gender	.018	-.016	-.018
Age	.013	.008	-.025
Immigrant status	-.002	.020	-.004
Mother's education	.074***	.069***	.095***
Father's education	.064***	.067***	.065***
Parents support	.228***	.226***	.204***
Parents control	.074***	.080***	.087***
Connectedness to peers	.265***	.355***	.307***
Connectedness to teachers	.267***	.300***	.260***
Physical exercise	.017	.097***	.075***
Leisure reading	.033*	.039*	.048***
Electronic games	-.118***	-.082***	-.081***
Homework	.087***	.062***	.053***
Revision	.144***	.102***	.087***
Voluntary services	.075***	.081***	.059***
Community extra-curricular activities	.055***	.078***	.066***

Note. * $p < .05$, ** $p < .01$, *** $p < .001$, two-tailed; gender coded Male=0 Female=1; Immigrant status coded Born in HK= 1 Not born in HK= 0

Table 7
Changes in Self-efficacy Scores of Senior Secondary Students from Time 1 to Time 2

Scales (<i>italic</i>) and subscales	Time 1 Score		Time 2 Score		Paired Difference				
	Item means mean	Item variances mean	Item means mean	Item variances mean	Means	S.D.	<i>t</i>	<i>p</i>	<i>d</i>
<i>S.5 Students (n=2845)</i>									
<i>Academic Development</i>	4.14	1.19	4.18	1.07	.40	13.42	1.53	.125	.029
Time Management	4.04	1.21	4.06	1.05	.05	3.19	.80	.426	.016
Study & Examination Skills	4.04	1.20	4.08	1.03	.10	3.18	1.64	.102	.030
Learning from Friends	4.03	1.24	4.09	1.12	.18	3.65	2.59*	.010	.049
Educational Planning	4.02	1.31	4.06	1.18	.18	3.56	2.62**	.009	.050
Being a Responsible Learner	4.58	1.06	4.58	.95	-.13	3.05	2.24**	.025	.043
<i>Personal-Social Development</i>	4.41	1.05	4.45	.92	.18	29.74	3.04**	.002	.062
Understanding Self	4.31	1.07	4.33	.98	.09	2.73	1.79	.074	.034
Understanding Others	4.48	.92	4.48	.83	.02	2.77	.36	.716	.007
Avoiding Drugs, Excessive Drinking and Smoking	5.33	1.00	5.34	.94	-.08	3.03	-1.33	.184	.026
Marriage & family Responsibilities	4.55	.96	4.58	.87	.21	3.04	3.58**	.000	.069
Handling Setbacks	4.34	.92	4.39	.82	.08	2.72	1.45	.146	.028
Health & Physical Training	4.27	1.07	4.30	.95	.13	2.86	2.38**	.017	.044
Cooperation & Team Spirit	4.41	.83	4.42	.76	.05	2.71	.90	.367	.018
Leadership Skills	4.13	1.05	4.14	.98	.15	3.00	2.56*	.010	.050
Management of Stress & Emotion	4.27	1.19	4.31	1.05	.16	3.11	2.61**	.009	.050
Self-Evaluation Skills	4.36	.96	4.41	.84	.16	2.97	2.89**	.004	.055
Thinking & Expression Skills	4.32	.87	4.36	.79	.26	2.72	5.01**	.000	.096
Sexual Knowledge & Relationship	4.44	1.17	4.48	.99	.15	3.34	2.31*	.021	.044
Leisure Time Management	4.57	.95	4.57	.84	.05	2.87	.90	.368	.018
Financial Management	4.21	1.42	4.27	1.22	.22	3.19	3.56**	.000	.068
Personal Goals Setting	4.25	1.03	4.29	.93	.26	3.04	4.40**	.000	.085
<i>Career Development</i>	4.36	1.04	4.32	.94	-.71	15.62	-2.34*	.019	.046
Career Planning	4.44	1.03	4.37	.96	-.22	3.14	-3.67**	.000	.071
Gender Issues in Career	4.48	1.03	4.41	.91	-.23	2.97	-4.03**	.000	.077
Training Selection	4.37	.99	4.33	.90	-.16	3.11	-2.66**	.008	.051
Job Hunt Preparation	4.20	1.16	4.21	1.04	.03	3.25	.55	.581	.010
Job Hunting	4.36	1.08	4.33	.96	-.11	3.04	-1.91	.057	.037
Career Goal Setting	4.30	.97	4.28	.89	-.01	3.00	-.21	.834	.004

S.7 Students (n=1205)

Academic Development	4.18	1.09	4.22	.97	.98	11.61	2.87**	.004	.086
Time Management	3.93	1.17	3.97	1.06	.30	3.01	3.43**	.001	.101
Study & Examination Skills	3.98	1.11	4.00	.99	.19	2.96	2.20*	.028	.065
Learning from Friends	4.21	1.07	4.30	.90	.32	3.35	3.27**	.001	.098
Educational Planning	4.13	1.17	4.21	1.02	.26	3.22	2.79**	.005	.083
Being a Responsible Learner	4.67	.96	4.63	.89	-.11	2.71	-1.44	.149	.040
Personal-Social Development	4.42	.94	4.43	.87	2.59	24.99	3.42**	.001	.105
Understanding Self	4.29	1.02	4.30	.94	.20	2.53	2.69**	.007	.081
Understanding Others	4.44	.87	4.42	.79	.16	2.41	2.34*	.019	.069
Avoiding Drugs, Excessive Drinking and Smoking	5.53	.68	5.46	.79	-.09	2.65	-1.16	.248	.032
Marriage & family Responsibilities	4.56	.89	4.57	.81	.26	2.77	3.17**	.002	.095
Handling Setbacks	4.36	.82	4.33	.79	.08	2.47	1.12	.262	.034
Health & Physical Training	4.19	1.00	4.21	.94	.30	2.68	3.89**	.000	.118
Cooperation & Team Spirit	4.40	.78	4.39	.72	.14	2.36	2.08*	.037	.063
Leadership Skills	4.08	1.03	4.10	.93	.19	2.61	2.55*	.011	.075
Management of Stress & Emotion	4.26	1.10	4.24	1.02	.11	2.84	1.33	.182	.040
Self-Evaluation Skills	4.43	.83	4.40	.79	-.03	2.64	-.39	.698	.012
Thinking & Expression Skills	4.33	.81	4.35	.74	.22	2.37	3.13**	.002	.091
Sexual Knowledge & Relationship	4.44	1.07	4.45	.96	.30	3.12	3.28**	.001	.097
Leisure Time Management	4.57	.89	4.56	.82	.10	2.57	1.32	.187	.042
Financial Management	4.18	1.38	4.26	1.24	.32	3.06	3.57**	.000	.103
Personal Goals Setting	4.22	.94	4.28	.87	.40	2.76	4.94**	.000	.145
Career Development	4.32	.96	4.27	.90	-.34	13.57	-.84	.403	.023
Career Planning	4.35	.98	4.34	.91	.14	2.93	1.65	.100	.051
Gender Issues in Career	4.40	.96	4.34	.89	.05	2.68	.59	.556	.020
Training Selection	4.39	.91	4.31	.85	-.23	2.79	-2.87**	.004	.083
Job Hunt Preparation	4.23	1.08	4.18	.99	-.17	2.88	-2.03*	.043	.059
Job Hunting	4.29	1.03	4.23	.94	-.12	2.89	-1.37	.170	.037
Career Goal Setting	4.26	.88	4.24	.84	.10	2.72	1.27	.206	.039

Notes: 1 = extremely lacking in confidence, 2 = not confident, 3 = a little lacking in confidence, 4 = confident, 5 = quite confident, 6 = extremely confident. As there are four items in each subscale, a subscale minimum score could be 4, and maximum score could be 24.

The effect size= Cohen's d; Cohen's d is calculated by mean difference / standard deviation of the mean difference. For Cohen's d an effect size of 0.2 to 0.3 might be a "small" effect, around 0.5 a "medium" effect and 0.8 to infinity, a "large" effect.(Cohen, 2004).

Appendix

The Life Skills Development Self-Efficacy Inventories (Senior Secondary School Form; Yuen et al., 2007)

The Personal-Social Development Self-Efficacy Inventory

Please read the following statements carefully and indicate how much confidence you have in performing these skills or behaviours. Please circle the appropriate number for each statement to describe your degree of confidence.

1 = Extremely Not Confident, 2 = Not Confident, 3 = Hardly Confident,

4 = Fairly Confident, 5 = Confident, 6 = Extremely Confident

I am confident that I can

- | | | | | | | |
|--|---|---|---|---|---|---|
| 1. uphold my own ideals. | 1 | 2 | 3 | 4 | 5 | 6 |
| 2. master the way to get along well with people. | 1 | 2 | 3 | 4 | 5 | 6 |
| 3. resist the temptation of using illegal drugs. | 1 | 2 | 3 | 4 | 5 | 6 |
| 4. consider different factors that can affect marriage when I get married. | 1 | 2 | 3 | 4 | 5 | 6 |
| 5. act according to circumstances in times of setbacks. | 1 | 2 | 3 | 4 | 5 | 6 |

I am confident that I can

- | | | | | | | |
|---|---|---|---|---|---|---|
| 6. master the ways to stay healthy. | 1 | 2 | 3 | 4 | 5 | 6 |
| 7. attentively listen to others' opinion when participating in activities. | 1 | 2 | 3 | 4 | 5 | 6 |
| 8. actively involve classmates in discussions when participating in school or classroom activities. | 1 | 2 | 3 | 4 | 5 | 6 |
| 9. handle the stress from studying. | 1 | 2 | 3 | 4 | 5 | 6 |
| 10. evaluate myself frequently and examine the reasons for success and failure. | 1 | 2 | 3 | 4 | 5 | 6 |

I am confident that I can

- | | | | | | | |
|--|---|---|---|---|---|---|
| 11. express my feeling and opinion in appropriate ways. | 1 | 2 | 3 | 4 | 5 | 6 |
| 12. develop normal friendships with the opposite sex. | 1 | 2 | 3 | 4 | 5 | 6 |
| 13. develop interests in many areas. | 1 | 2 | 3 | 4 | 5 | 6 |
| 14. keep expenditure below income and not be too wasteful. | 1 | 2 | 3 | 4 | 5 | 6 |
| 15. set up different goals of my life. | 1 | 2 | 3 | 4 | 5 | 6 |

I am confident that I can

- | | | | | | | |
|---|---|---|---|---|---|---|
| 16. face criticisms with an open attitude. | 1 | 2 | 3 | 4 | 5 | 6 |
| 17. handle disputes among friends. | 1 | 2 | 3 | 4 | 5 | 6 |
| 18. resist the temptation of smoking or excessive drinking. | 1 | 2 | 3 | 4 | 5 | 6 |

19. think over what constitutes a happy marriage life when I choose my partner.	1	2	3	4	5	6
20. master problem-solving skills in face of problems.	1	2	3	4	5	6
I am confident that I can						
21. master the ways to stay psychologically healthy.	1	2	3	4	5	6
22. cooperate with others to reach the team's goal when participating in activities.	1	2	3	4	5	6
23. organize and plan activities.	1	2	3	4	5	6
24. master the ways to make myself happy.	1	2	3	4	5	6
25. admit my mistakes to myself.	1	2	3	4	5	6
I am confident that I can						
26. use various appropriate means to express my opinion.	1	2	3	4	5	6
27. maintain normal friendship with the opposite sex.	1	2	3	4	5	6
28. develop some interests so that my leisure time will be richer and happier.	1	2	3	4	5	6
29. avoid borrowing money from others unless absolutely necessary.	1	2	3	4	5	6
30. plan how best to attain the different goals in life.	1	2	3	4	5	6
I am confident that I can						
31. accept and like myself.	1	2	3	4	5	6
32. form friendships with others.	1	2	3	4	5	6
33. appreciate how smoking, drug abuse and excessive drinking would affect my friends, family and myself.	1	2	3	4	5	6
34. think over the relations between children and marriage when I prepare myself to be a parent.	1	2	3	4	5	6
35. learn from mistakes when I make them.	1	2	3	4	5	6
I am confident that I can						
36. take care of my health when I am sick.	1	2	3	4	5	6
37. when leading an activity, encourage group members with no sense of responsibility to be more responsible to themselves and others..	1	2	3	4	5	6
38. appropriately allocate work to group members when leading an activity.	1	2	3	4	5	6
39. control my emotions.	1	2	3	4	5	6
40. benefit from the process of self-evaluation.	1	2	3	4	5	6
I am confident that I can						
41. exchange ideas with my classmates when I participate in school or classroom activities.	1	2	3	4	5	6
42. develop a romantic relationship with the opposite sex.	1	2	3	4	5	6
43. choose some recreational activities that suit my interests.	1	2	3	4	5	6
44. keep an account book for myself.	1	2	3	4	5	6

45. find several possible solutions for one problem.	1	2	3	4	5	6
I am confident that I can						
46. make use of my strengths and rectify my weaknesses.	1	2	3	4	5	6
47. stand in others' shoes and consider their feelings.	1	2	3	4	5	6
48. prevent myself from acquiring habits of excessive drinking, smoking or drug abuse.	1	2	3	4	5	6
49. face the responsibility and difficulty of being a parent.	1	2	3	4	5	6
50. encourage myself in face of setbacks.	1	2	3	4	5	6
I am confident that I can						
51. develop a balanced diet.	1	2	3	4	5	6
52. handle disputes in the process of cooperation when participating in activities.	1	2	3	4	5	6
53. call on other classmates to join activities.	1	2	3	4	5	6
54. express my feelings in correct and appropriate ways when facing pressure.	1	2	3	4	5	6
55. have the courage and stamina to evaluate myself.	1	2	3	4	5	6
I am confident that I can						
56. adopt multiple perspectives when analysing a problem or issue .	1	2	3	4	5	6
57. maintain a romantic relationship with the opposite sex.	1	2	3	4	5	6
58. make good use of leisure time and take part in extra-curricular activities that I like.	1	2	3	4	5	6
59. prepare a financial budget.	1	2	3	4	5	6
60. work independently, first analyse the ways of handling each incident and then make the best decision.	1	2	3	4	5	6

Subscales:

Understanding Self=US(item 1,16,31,46); Understanding Others=UO(items 2,17,32, 47); Avoiding Drugs, Drinking & Smoking =ADS(items 3, 18, 33, 48); Marriage and Family responsibilities(items 4, 19, 34, 49); Handling Setbacks=HS(items 5, 20, 35, 50); Health & Physical Training= HPT(items 6,21, 36,51); Cooperation & Team Spirit=CTS(items 7,22, 37, 52); Leadership Skills=LS(items 8, 23, 38,53); Management of Stress & Emotion=MSE(items 9, 24, 39, 54); Self-Evaluation Skills=SE(items 10, 25, 40, 55); Thinking & Expression Skills=TE(items 11, 26, 41, 56); Sexual Knowledge & Relationship=SKR(items 12, 27, 42, 57); Leisure Time Management=LTM(items 13, 28, 43, 58); Financial Management=FT(items 14, 29, 44, 59); Personal Goals Setting=PG(items 15, 30, 45, 60)

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The Career Development Self-Efficacy Inventory

Please read the following statements carefully and indicate how much confidence you have in performing these skills or behaviours. Please circle the appropriate number for each statement to describe your degree of confidence.

**1 = Extremely Not Confident, 2 = Not Confident, 3 = Hardly Confident, 4= Fairly Confident,
5 = Confident, 6 = Extremely Confident**

I am confident that I can

- | | | | | | | |
|--|---|---|---|---|---|---|
| 1. understand the relationship between my interests and choosing a career. | 1 | 2 | 3 | 4 | 5 | 6 |
| 2. understand the relationship between my gender and choosing a career. | 1 | 2 | 3 | 4 | 5 | 6 |
| 3. understand a vocational training program before I enroll in it. | 1 | 2 | 3 | 4 | 5 | 6 |
| 4. master general interview techniques (e.g. appearance, ways of speaking, etc.) | 1 | 2 | 3 | 4 | 5 | 6 |
| 5. maintain the stamina to look for different job opportunities even when there are difficulties in job hunting. | 1 | 2 | 3 | 4 | 5 | 6 |

I am confident that I can

- | | | | | | | |
|--|---|---|---|---|---|---|
| 6. assess and modify my career goals according to changes in external situation. | 1 | 2 | 3 | 4 | 5 | 6 |
| 7. explore different careers within areas of my interest. | 1 | 2 | 3 | 4 | 5 | 6 |
| 8. get along well with the opposite sex at work. | 1 | 2 | 3 | 4 | 5 | 6 |
| 9. collect information such as admission criteria and course selection procedure of vocational training schools. | 1 | 2 | 3 | 4 | 5 | 6 |
| 10. prepare effectively for job recruitment written examinations.. | 1 | 2 | 3 | 4 | 5 | 6 |

I am confident that I can

- | | | | | | | |
|--|---|---|---|---|---|---|
| 11. look for suitable jobs according to my interest and ability. | 1 | 2 | 3 | 4 | 5 | 6 |
| 12. solve the problems I encounter in the process of achieving my career goals. | 1 | 2 | 3 | 4 | 5 | 6 |
| 13. recognise my abilities so as to help myself choose a career. | 1 | 2 | 3 | 4 | 5 | 6 |
| 14. make use of the good points of being a male/female at work. | 1 | 2 | 3 | 4 | 5 | 6 |
| 15. think over the relationship between my choice of courses and career prospects. | 1 | 2 | 3 | 4 | 5 | 6 |

I am confident that I can

- | | | | | | | |
|--|---|---|---|---|---|---|
| 16. produce a resume for myself. | 1 | 2 | 3 | 4 | 5 | 6 |
| 17. get help from some institutions and connections to help me find a job. | 1 | 2 | 3 | 4 | 5 | 6 |
| 18. adopt an effective strategy to achieve my career goals. | 1 | 2 | 3 | 4 | 5 | 6 |
| 19. choose tertiary courses wisely to prepare myself for my future career. | 1 | 2 | 3 | 4 | 5 | 6 |

20. handle others' objections, criticism and opposing views when I choose a career which is mostly performed by the opposite sex.	1	2	3	4	5	6
I am confident that I can						
21. select and enroll in some suitable courses to prepare myself for different economic situations and labor demand.	1	2	3	4	5	6
22. produce a job application letter for myself.	1	2	3	4	5	6
23. find a suitable job successfully.	1	2	3	4	5	6
24. constantly improve my study and career plan to work toward my career goals.	1	2	3	4	5	6

Subscales:

Career Planning =CP (items 1, 7, 13, 19); Gender Issues in Career = GI (items 2, 8, 14, 20); Training Selection =TS (items 3, 9, 15, 21); Job Hunt Preparation = JP (items 4, 10, 16, 22); Job Hunting =JH (items 5, 11, 17, 23); Career Goal Setting =CG (items 6, 12, 18, 24).

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The Academic Development Self-Efficacy Inventory

Please read the following statements carefully and indicate how much confidence you have in performing these skills or behaviours. Please circle the appropriate number for each statement to describe your degree of confidence.

**1 = Extremely Not Confident, 2 = Not Confident, 3 = Hardly Confident,
4 = Fairly Confident, 5 = Confident, 6 = Extremely Confident**

I am confident that I can

- | | | | | | | |
|---|---|---|---|---|---|---|
| 1. organize my learning plan well and make good use of available time | 1 | 2 | 3 | 4 | 5 | 6 |
| 2. master the answering techniques in exams and tests. | 1 | 2 | 3 | 4 | 5 | 6 |
| 3. understand the difficulties encountered in tertiary institutions by listening to friends studying there. | 1 | 2 | 3 | 4 | 5 | 6 |
| 4. look for information on, and be well prepared for, further studies. | 1 | 2 | 3 | 4 | 5 | 6 |
| 5. obey the regulations of school and classroom. | 1 | 2 | 3 | 4 | 5 | 6 |

I am confident that I can

- | | | | | | | |
|---|---|---|---|---|---|---|
| 6. plan before I do something. | 1 | 2 | 3 | 4 | 5 | 6 |
| 7. improve my techniques in writing, reading, listening, and speaking. | 1 | 2 | 3 | 4 | 5 | 6 |
| 8. ask my friends for ways to solve problems in choosing a tertiary institution. | 1 | 2 | 3 | 4 | 5 | 6 |
| 9. collect each tertiary institution's information and study the content of the courses they offer. | 1 | 2 | 3 | 4 | 5 | 6 |
| 10. respect others in school. | 1 | 2 | 3 | 4 | 5 | 6 |

I am confident that I can

- | | | | | | | |
|--|---|---|---|---|---|---|
| 11. complete required learning tasks within the specified time. | 1 | 2 | 3 | 4 | 5 | 6 |
| 12. acquire good learning habits. | 1 | 2 | 3 | 4 | 5 | 6 |
| 13. seek information on universities or other tertiary institutions from my friends when I further my studies. | 1 | 2 | 3 | 4 | 5 | 6 |
| 14. choose a tertiary institution that suits me. | 1 | 2 | 3 | 4 | 5 | 6 |
| 15. exercise the rights and responsibilities of a student. | 1 | 2 | 3 | 4 | 5 | 6 |

I am confident that I can

- | | | | | | | |
|---|---|---|---|---|---|---|
| 16. design a learning timetable for myself and act accordingly. | 1 | 2 | 3 | 4 | 5 | 6 |
| 17. be well prepared for exams/tests. | 1 | 2 | 3 | 4 | 5 | 6 |
| 18. seek advice from friends when I further my studies. | 1 | 2 | 3 | 4 | 5 | 6 |
| 19. obtain information about scholarships and financial assistance. | 1 | 2 | 3 | 4 | 5 | 6 |
| 20. accept responsibility for my learning.. | 1 | 2 | 3 | 4 | 5 | 6 |
-

Subscales:

Time Management =TM (items 1, 6, 11, 16); Study & Examination Skills = SS (items 2, 7, 12, 17); Learning from Friends =LF (items 3, 8, 13, 18); Educational Planning = EP (items 4, 9, 14, 19); Being a Responsible Learner =RL (items 5, 10, 15, 20).

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