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Assessing Career Adaptability and Self-Esteem of Secondary Students with Autism Spectrum Disorder in Hong Kong's Inclusive Schools

Abstract

This study explored career adaptability and self-esteem in secondary students with ASD, grounded in Savickas' Career Construction Theory. Using the short-form of the Career Adaptability Scale (CAAS), results showed high correlations among career adaptability dimensions and a strong relationship between career adaptability and self-esteem, with high internal consistency. No significant gender differences were found. Despite the lack of statistical significance, the data showed an increasing trend in scores across all CAAS dimensions and self-esteem from grade 10 to grade 12. Self-esteem was a key predictor of all four CA dimensions, emphasizing its role in career development. Enhancing students' positive self-evaluations could boost career adaptability. Targeted interventions on career adaptability are also recommended to support students with ASD effectively.

Keywords: Career adaptability, Career Construction Theory, ASD students

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Introduction

Career adaptability, a crucial element in career development, refers to the ability to prepare for predictable tasks and adjust to changes in work conditions (Savickas, 2012). It encompasses four dimensions: Concern, Control, Curiosity, and Confidence, which together enable individuals to cope with career-related tasks and transitions (Savickas, 2013). High career adaptability is linked to positive outcomes such as employability and life satisfaction (Rudolph et al., 2017a, 2017b). Despite its importance, research on career adaptability among students with special educational needs (SEN) is limited. Yang et al.'s study (2023) among SEN students emphasized the need for suitable measures to assess career adaptability in SEN students, highlighting that the current research predominantly focuses on typically developing students and often overlooks the unique challenges faced by those with disabilities. Extending previous research in SEN students (e.g. Yang et al., 2023), this study aims at addressing this gap by examining career adaptability in secondary students with Autism Spectrum Disorder (hereby summarized as ASD), thereby contributing to a deeper understanding of career development in inclusive settings.

Career construction theory (Savickas, 2013) provides the theoretical framework, positing that individuals build their careers by integrating personal experiences and adapting to changes over their lifespan. The theory identifies three roles—actor, agent, and author—each shaping their career narrative. Adaptability and identity are key to navigating career tasks and transitions, highlighting the importance of developing career adaptability for successful career paths, especially for students with special educational needs.

Participants and procedure

Data were collected from 30 secondary students with ASD across nine schools. The subject distribution was: S1 (1 student, 3.3%), S2 (5 students, 16.7%), S4 (1 student, 3.3%), S5 (12 students, 40.0%), S6 (3 students, 10.0%), S8 (2 students, 6.7%), S9 (1 student, 3.3%), S11 (4 students, 13.3%), and S12 (1 student, 3.3%). The gender distribution included 20 males (66.7%), 8 females (26.7%), and 2 missing (6.7%). The grade distribution was: S4 (13 students, 71.4%), S5 (11 students, 36.7%), and S6 (6 students, 20.0%). The ages ranged from 14 to 19 years (Mean = 16.5 years, SD = 1.22). Ethical approval for the study was obtained from the authors' university, and consent forms were collected from both the students and their parents, as well as from their schools.

Measures

In our study of secondary students with ASD, we employed the 12-item short form of the Career Adaptability Scale (CAAS-SF, Maggiori et al., 2017). This version assesses the four dimensions of career adaptability: concern, control, curiosity, and confidence. The use of the CAAS-SF addresses the gap in research on career adaptability among students with special educational needs, particularly those

with ASD. We used a short Rosenberg Self-Esteem Scale (3 items, Rosenberg et al., 1995) to explore the external validity of the CAAS-SF. Self-esteem, which refers to one's global sense of self-worth (Rosenberg, 1979; García et al., 2019), was expected to correlate positively and significantly with the four dimensions of career adaptability and the overall score. The Chinese version of RSES (Wu et al., 2017) was used. For the two scales (CAAS and RSES), students rated on a four-point scale (1=strongly disagree, 2=disagree, 3=agree, 4=strongly agree).

Statistical analysis and results

We examined the correlations, means, standard deviations, and reliabilities among secondary students with ASD across the four dimensions of the CAAS (Career Adaptability Scale)—Concern, Control, Curiosity, and Confidence—and self-esteem as an external variable. An independent samples t-test was conducted to compare the four dimensions of the CAAS and self-esteem (SE) between male and female secondary students with ASD. An analysis of variance (ANOVA) was conducted to compare the four dimensions of the CAAS and self-esteem (SE) among secondary students with ASD in S4, S5, and S6 in Hong Kong (equivalent to grades 10 to 12 internationally). For the regression analysis, we employed bootstrap regression to enhance the reliability of our findings. We generated 1,000 bootstrap samples by randomly resampling the original dataset with replacement.

Table 1

Correlation, mean, standard deviations and reliabilities

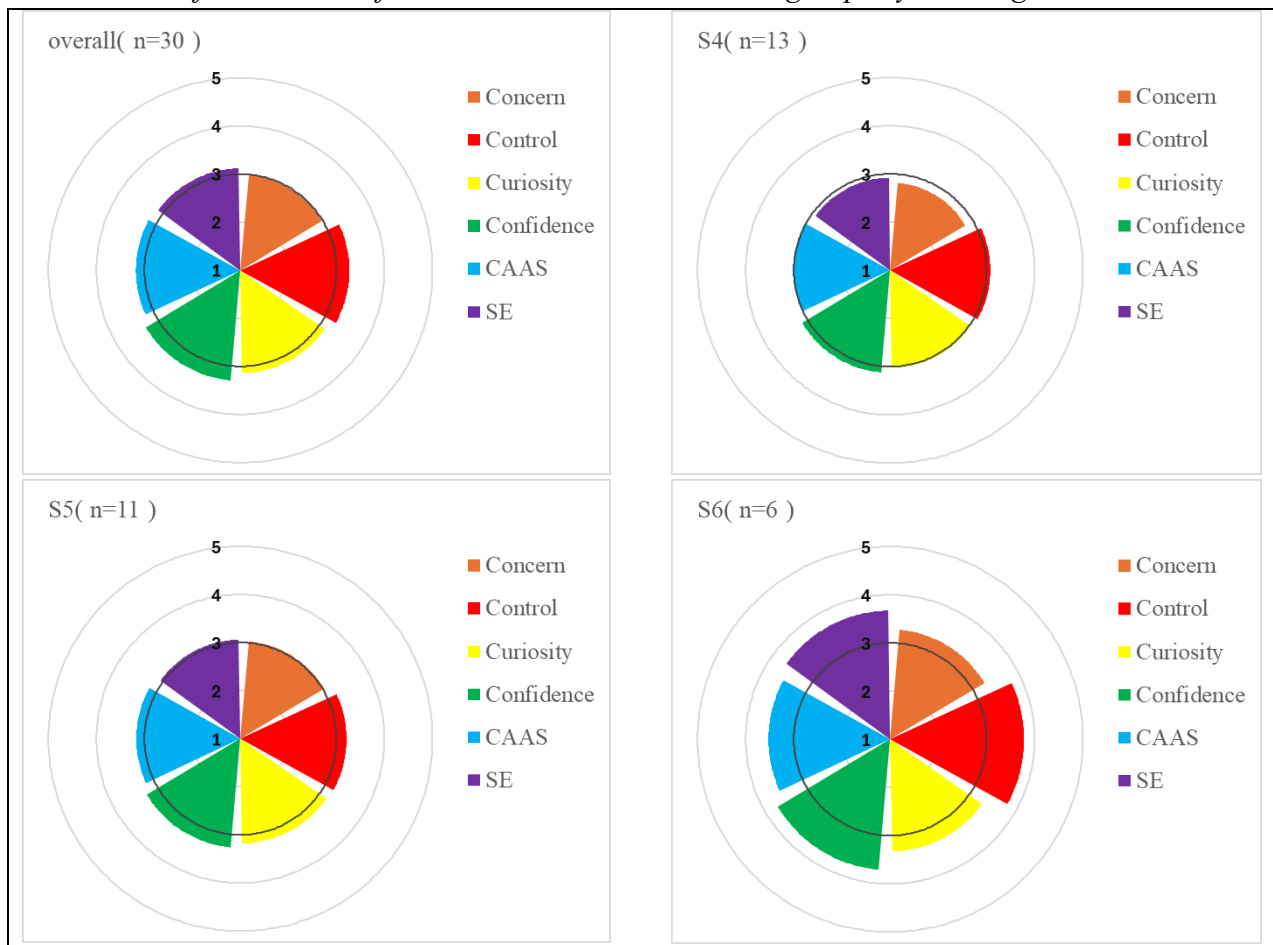
	Concern	Control	Curiosity	Confidence	CAAS	SE
Concern	—					
Control	0.821***	—				
Curiosity	0.825***	0.812***	—			
Confidence	0.658***	0.821***	0.756***	—		
CAAS	0.911***	0.940***	0.932***	0.875***	—	
SE	0.783***	0.762***	0.697	0.693***	0.803***	—
Mean/SD	2.99/1.116	3.27/0.961	3.14/1.113	3.30/0.944	3.18/0.946	3.12/0.949
Cronbach's α	0.960	0.824	0.932	0.798	0.957	0.862
McDonald's ω	0.962	0.837	0.935	0.801	0.959	0.865

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

High correlations were found among the CA dimensions, with Concern strongly correlating with Control ($r = 0.821$), Curiosity ($r = 0.825$), and Confidence ($r = 0.658$). CAAS overall showed very high correlations with its dimensions, ranging from 0.875 to 0.940, and a strong correlation with self-esteem ($r = 0.803$). The constructs' means ranged from 2.99 to 3.30, with standard deviations from 0.944 to 1.116. In Figure 1, it visualizes the overall mean of the four dimensions of CAAS, CAAS, self-esteem (SE) by total and by three grade levels (S4, S5 and S6 represent Grade 10, Grade 11 and Grade 12 in Hong Kong schools). The Radar chart is particularly useful for viewing the relative scores of multiple categories at once. Reliability analyses indicated high internal consistency, with Cronbach's α values ranging from 0.798 to 0.960 (mean = 0.889) and McDonald's ω values ranging from 0.801 to 0.962 (mean = 0.893). See also Table 1 for details.

Figure 1

Visualization of mean scores for all 30 ASD students and subgroups by school grade levels



Note. Students rated on a five-point scale (1 = strongly disagree, 2=disagree, 3= agree, 5 = strongly agree).

The T-test results (see also Table 2) showed no significant differences between males and females in any of the dimensions: Concern ($t(26) = -0.341$, $p = 0.736$), Control ($t(26) = -0.059$, $p = 0.953$), Curiosity ($t(26) = -0.704$, $p = 0.488$), Confidence ($t(26) = -0.403$, $p = 0.691$), CAAS ($t(26) = -0.422$, $p = 0.677$), and SE ($t(26) = 0.498$, $p = 0.623$). This suggests that gender does not significantly impact the levels of career adaptability or self-esteem in this sample of students with ASD.

Table 2

Independent sample t test between male and female students with ASD

	Male (N=20)		Female (N=8)		<i>df</i>	<i>t</i>	<i>p</i>
	Mean	SD	Mean	SD			
Concern	2.92	1.149	3.08	1.218	26	-0.341	0.736
Control	3.27	1.012	3.29	1.015	26	-0.059	0.953
Curiosity	3.03	1.123	3.38	1.253	26	-0.704	0.488
Confidence	3.25	1.048	3.42	0.812	26	-0.403	0.691

CAAS	3.12	0.976	3.29	1.031	26	-0.422	0.677
SE	3.12	0.919	2.92	1.065	26	0.498	0.623

The analysis of variance (ANOVA) results presented in Table 3 indicate that there are no statistically significant differences among the three grades (S4, S5 and S6) for any of the measured dimensions. Despite the lack of statistical significance, the data meaningfully shows an increasing trend in scores across all CAAS dimensions (Concern, Control, Curiosity, Confidence) and self-esteem from grade 10 to grade 12 (see also Figure 1). Future research would enhance the sample size of ASD students substantially to verify the results.

Table 3

ANOVA test among S4, S5 and S6 (Grades 10 to 12) students with ASD

	S4 (N=13)		S5 (N=11)		S6 (N=6)		df	F	p
	Mean	SD	Mean	SD	Mean	SD			
Concern	2.82	1.144	3.03	0.983	3.28	1.405	(2, 27)	.340	0.714
Control	3.08	1.011	3.21	1.003	3.78	0.689	(2, 27)	1.131	0.338
Curiosity	3.03	1.190	3.18	0.947	3.33	1.382	(2, 27)	0.157	0.856
Confidence	3.13	0.977	3.27	1.042	3.72	0.647	(2, 27)	0.809	0.456
CAAS	3.01	1.035	3.17	0.892	3.53	0.900	(2, 27)	0.591	0.561
Self-esteem	2.92	0.944	3.06	1.031	3.67	0.699	(2, 27)	1.327	0.282

The regression results indicated that self-esteem significantly predicted all four dimensions of career adaptability. Specifically, self-esteem had a strong positive effect on Concern ($\beta = 0.844$, $p < .001$, $R^2 = 0.676$), Control ($\beta = 0.796$, $p < .001$, $R^2 = 0.657$), Curiosity ($\beta = 0.778$, $p < .001$, $R^2 = 0.582$), and Confidence ($\beta = 0.740$, $p < .001$, $R^2 = 0.554$). Gender and grade were not the significant predictors for any of the dimensions, indicating that self-esteem plays a crucial role in career adaptability among secondary students with ASD, regardless of gender or grade. See also Table 4 for details and Figure 2 for its visualization.

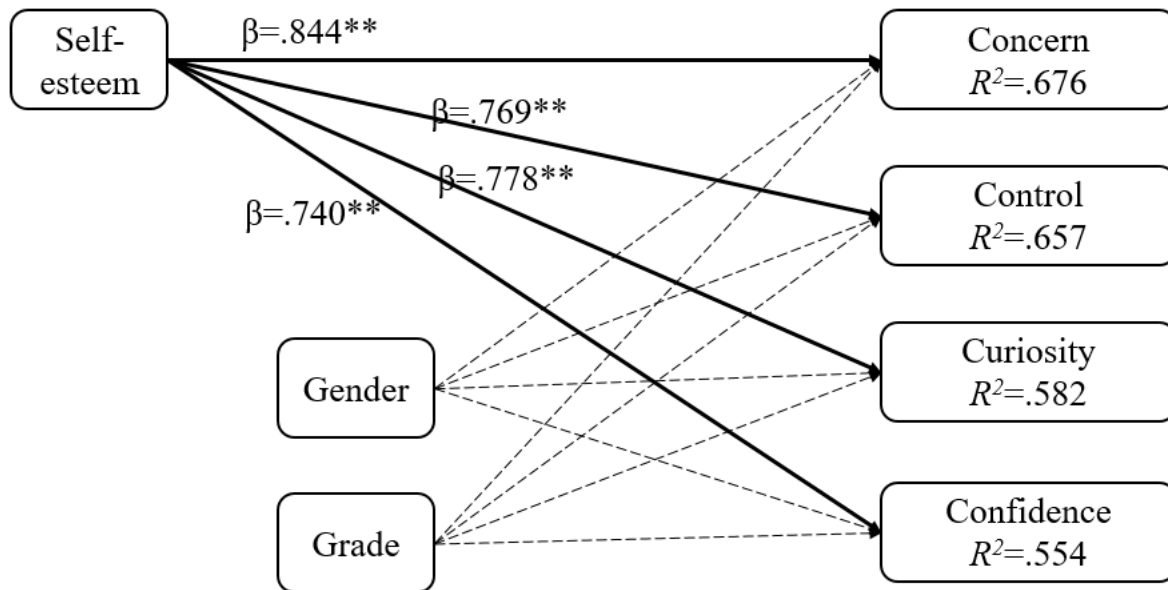
Table 4

Regression results

DV _s	IV _s	β	p	99.5% CI		R^2
				Lower	Upper	
	Self-esteem	0.844	<.001	0.471	1.218	
Concern	Gender	-0.101	0.412	-0.477	0.274	0.676
	Grade	0.163	0.182	-0.203	0.528	
	Self-esteem	0.796	<.001	0.411	1.180	
Control	Gender	0.080	0.515	-0.296	0.457	0.657
	Grade	0.063	0.620	-0.324	0.449	
	Self-esteem	0.778	<.001	0.354	1.203	
Curiosity	Gender	0.231	0.099	-0.185	0.646	0.582
	Grade	-0.137	0.332	-0.563	0.290	
	Self-esteem	0.740	<.001	0.301	1.178	
Confidence	Gender	0.148	.296	-0.281	0.577	0.554
	Grade	0.016	.912	-0.425	0.457	

Figure 2

Path model with the results (non-significant results were omitted, details were reported in Table 4)



Note. Gender and Grade as two controlled variables

--- means non significant path coefficients

** $p < .001$

Discussion

Theoretical Implications. The high correlations among the CAAS dimensions for ASD students suggest an interconnectedness of career adaptability attributes, consistent with Savickas' career construction theory (Savickas, 2013), which emphasizes Concern, Control, Curiosity, and Confidence as essential for effective career adaptation. This finding aligns with the theoretical stance that career adaptability is a cohesive construct, supporting its application to ASD students. Additionally, the strong correlation between CAAS and self-esteem highlights the significant role self-esteem plays in career adaptability, suggesting that enhancing self-esteem could be beneficial for improving career adaptability. This is in line with findings from broader SEN research, such as Yang et al. (2023), which also underscores the importance of self-esteem in career development models for SEN students in consistent with previous research among typically-developed students (Marcionetti & Rossier, 2021).

Practical Implications. The reliability of the CAAS in assessing career adaptability among ASD students suggests that it can be a useful tool for educators and counsellors to identify areas where students need more support. Intervention programs should address all four dimensions of career adaptability, given their strong intercorrelations, and include strategies to enhance self-esteem, which influences career adaptability. The lack of significant gender and grade-level differences in career adaptability and self-esteem observed in this small sample suggests that unified career development programs could be effective. Schools can use CAAS data to develop personalized career plans that build on students' strengths and address their weaknesses, aiding in smoother transitions from school to work or further education. This approach is supported by Yang et al. (2023), who highlight the

importance of tailored career guidance and the positive impact of self-esteem on career adaptability among SEN students (Hirschi & Koen, 2021; Marcionetti & Rossier, 2021).

The study on ASD students highlighted the importance of a reliable and multi-dimensional approach to assessing career adaptability. The theoretical implications emphasize the interconnectedness of career adaptability dimensions and the significant role of self-esteem, while the practical implications focus on the application of these insights in educational settings to support career development.

Limitations and Future Directions

While the current focus on ASD students has its advantage among this group of students, it may also limit its generalizability. Future research should involve larger, more samples of ASD students and other diverse groups of students across regions and countries for comparative research and examine the long-term effects of interventions aiming at enhancing both self-esteem and the four dimensions of career adaptability. Additionally, exploring other factors influencing career adaptability, such as social support and family involvement, could provide a more comprehensive understanding of career development in students with ASD.

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