Basic Skills for Career Development and Identity Style of Japanese High School Students

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Abstract: Four skills (interpersonal relationship, information utilization, future planning, and decision-making) and three identity styles (informational, normative, and diffuse/avoidant) were measured among Japanese high school students (N = 963: 335 tenth-graders, 307 eleventh-graders, and 321 twelfth-graders), using the Basic Skills for Career Development Scale and the Japanese version of Identity Style Inventory, respectively. Grade and gender differences were found across the four basic skills and the three identity styles. Canonical correlation analyses indicated that informational style was positively related to all four basic skills for career development, whereas diffuse/avoidant style was negatively related to all four basic skills. There was no consistent relationship between normative style and basic skills. These findings suggest that improvement of basic skills through career education can advance young people's career and identity exploration process.

Key words: Basic skills for career development, identity style, Japanese high school students, career maturity

Serious career-related problems in Japan are increasing the number of "Freeters"; people aged 15 to 34 who already have or who are seeking a part time job. The number of Freeters has doubled from 1.01 million in 1992 to 2.17 million in 2003 (Ministry of Health, Labour and Welfare, 2005). The rate of those aged 15 to 34 who are not engaged in employment, education, or training (NEET) has also risen, from 5.4% in1993 to 9.5% in 2004 (Ministry of Health, Labour and Welfare, 2005). Most Freeters and NEETs continue to be financially and psychosocially dependent on their parents. The General Investigation Study Cooperator Meeting about the Promotion of Career Education (2004) identified several environmental and personal factors that could cause these career-related problems. The environmental factors include decline in regular employment and instability of employment caused by rapid technological change, as well as changes in organizational and occupational structures. The personal factors include a tendency to avoid making occupational decisions, and vocationally immature attitudes, behavior, and knowledge that characterize a low level of career maturity during late adolescence and early adulthood.

To solve these career-related problems, the General Investigation Study Cooperator Meeting about the Promotion of Career Education (2004) insisted that children and adolescents should acquire four types of career-related skills, through career education taking place from elementary school to high school. The four types of career-related skills are interpersonal relationship, informational utilization, future planning, and decision-making, which seem to be related to Super's (1983) reality orientation, formation and exploration, planfulness, and decision making dimensions, respectively. These four skills can be called *basic skills for career development* because they are critical skills to improve career maturity and would be useful in helping young people to adjust to their workplaces.

Studies on career maturity have shown that demographic variables (e.g., age, gender, socioeconomic status, and level of education) and career-related variables (e.g., vocational identity, career decision, attributions, and work role salience) are related to career maturity (e.g., Borges, Richard, & Duffy, 2007; Creed & Patton, 2003; Flouri & Buchanan, 2002; Naidoo, Bowman, & Gerstein, 1998; Patton, Creed, & Muller, 2002; Patton & Lokan, 2001; Powell & Luzzo, 1998). For example, Patton et al. (2002) found that career maturity while in high school was a predictor of successful post-school transitions. Powell and Luzzo (1998) reported that career maturity was positively related to higher levels of an optimistic attributional style. Although most of these studies focus on the relationship between career maturity and relatively stable and unchangeable variables, there are few studies that have demonstrated a relationship between career maturity and changeable behavioral variables, such as career-related skills that are educable.

Career-related skills such as interpersonal skills, information seeking skills, and academic skills can be developed through explicit career education (Niles & Harris-Bowlsbey, 2005). Flouri and Buchanan (2002) reported that career-related skills such as getting along with people and coming up with ideas were positively related to career maturity in British adolescents, even when family support, feelings of pressure, self-confidence, and academic motivation were controlled. Although these results suggest that career-related skills play an important role in improving adolescents' career maturity, Flouri and Buchanan (2002) used a limited measure of seven items associated with employability. In the present study, career-related skills were assessed with more items to cover broader domains of career maturity.

Since Erikson (1968) emphasized the centrality of occupational choice in identity formation, a number of studies and theoretical approaches have emphasized the positive relationship between identity formation and career development in adolescence (e.g., Flum & Blustein, 2000; Gushue, Clarke, Pantzer, & Scanlan, 2006; Nauta & Kahn, 2007; Schmitt-Rodermund & Vondracek, 1999). Individuals who engage in the career exploratory process are more likely to develop self-construction (Flum & Blustein, 2000). Identity formation is also a process of organizing, integrating, and restructuring self-constructs based on self-relevant information (Berzonsky, 1997). Because the career exploration and identity formation processes both entail information seeking and organizing self-constructs, it is assumed that adolescents who are classified as "identity achieved" show higher levels of career maturity.

Most previous studies that demonstrated relationships between career maturity and identity formation measured identity formation based on identity statuses, which were defined as the presence or absence of self-reported past/present exploration and present commitment. Berzonsky (1992a) argued that within identity statuses, individuals differ in the social-cognitive processes they use to make decisions, cope with problems, and negotiate identity issues. Because identity statuses are considered to be differential personality outcomes (Berzonsky, 1992a), assessing social-cognitive strategies that are utilized while dealing with identity-related issues would be a useful approach to investigating the relationship between the career development and identity formation processes. Berzonsky (1990) distinguished three identity styles by which self-relevant information is evaluated, structured, and utilized: (a) *informational*, (b) *normative*, and (c) *diffuse/avoidant*. According to Berzonsky (1997; Berzonsky & Adams, 1999), individuals who employ each identity style are characterized as follows. Individuals who employ the informational style actively seek out, process, and evaluate relevant information. Adolescents who utilize a normative style focus on the normative expectations conveyed by significant others, such as parents and referent groups. Diffuse/avoidant individuals display a reluctance to face up to and deal with decision-making situations and identity issues. In the present study, a measure of identity style was used to capture social-cognitive processes of exploration.

The present study aims to examine the relationship between the four basic skills for career development and the three identity styles described above. No previous study has investigated the relationship between career-related skills and identity styles shown by high school students. However,

several previous studies have helped to motivate the present one (e.g., Berzonsky & Kuk, 2000; Schwartz, Mullis, Waterman, & Dunham, 2000; Turner, Trotter, Lapan, Czajka, Yang, & Brissett, 2006; Wallace-Broscious, Serafica, & Osipow, 1994). Adolescents who are classified as "identity achieved" status had higher levels of career maturity and university adaptation (Berzonsky & Kuk, 2000; Wallace-Broscious et al., 1994), and typically employed the informational style (Berzonsky & Kuk, 2000; Schwartz et al., 2000). Vocational identity which plays an important role in adolescent identity formation (Turner & Lapan, 2005) was positively associated with career-related skills (Turner et al., 2006). These previous studies suggest that informational style and career-related skills facilitate the organization of self-constructs. Therefore, it is anticipated that the four basic skills will be positively related to the informational style, and negatively related to the diffuse/avoidant style.

Method

Participants

The participants consisted of 335 tenth-grade (197 girls, 138 boys), 307 eleventh-grade (152 girls, 155 boys), and 321 twelfth-grade students (186 girls, 135 boys). The mean ages were 15.68 years ($SD = 0.47$) for tenth graders, 16.72 years ($SD = 0.45$) for eleventh graders, and 17.71years ($SD = 0.45$) for twelfth graders. All 963 students attended regular classes at a public high school, located in Hiroshima prefecture, Japan.

Measures

Basic Skills for Career Development. The Basic Skills for Career Development Scale (BSCDS: Niimi & Maeda, 2005) was used to measure four skills, namely interpersonal relationship, information utilization, future planning, and decision-making. This scale was developed using the National Institute for Educational Policy Research of Japan's (2002) list of career-related skills, which were assumed to be important for career education of high school students. On the basis of this list, the four skills can be defined as follows. *Interpersonal relationship* skills refer to communication skills necessary for person-to-person cooperation based on mutual respect. *Information utilization* skills are required to gather and take advantage of information about the world of work. *Future planning* skills are those that allow the concrete planning of one's life-career. *Decision-making* skills are those used to set and achieve a goal. The BSCDS is a 16-item scale composed of four subscales, each containing four items. Several Japanese high school teachers judged whether these items were appropriate for high school students. Because they pointed out that some of the items were not relevant for high school students, these items were used with minor revisions. Responses were scored on a 5-point Likert-type scale ranging from 1 (I cannot at all) to 5 (I can very much). Each subscale score of the BSCDS was calculated by dividing the summed item responses by the number of items, producing a possible range of scores between 1 and 5, with higher scores more strongly reflecting self-confidence in using each basic skill.

Items assessing interpersonal relationship skills included "I accurately communicate my ideas to other people." and "I can make friends with people who think differently from myself." Typical items assessing information utilization were: "My interests are related to my prospective job or occupation." and "I know the working conditions or occupation that I wish to get." Typical items assessing future planning were: "If I have a trouble with my plan, I'll solve it by modifying the plan effectively." and "I accept the responsibilities of my own job." Typical items assessing decision-making were: "I'll not give up on my goal, even if there is an obstacle." and "If I have a problem I'll find some solutions."

Test-retest reliabilities have ranged from .63 to .76 for the college student sample over a 5-week period (Niimi & Maeda, 2005). Internal consistency of subscales with Japanese college students were previously reported to range from $\alpha = .51$ (information utilization) to .71 (future planning), and with the

sample in the present study ranged from α = .52 (interpersonal relationship) to .65 (future planning). In the present study, four principal component analyses (one-factor model) were conducted to examine whether the four items of each subscale of the BSCDS consist of one factor. All four principal component analyses indicated that each solution accounted for above 37.60% of total variance; interpersonal relationship 37.60% (median for the loading .61), information utilization 44.97% (median for the loading .68), future planning 48.83% (median for the loading .70), and decision-making 47.33% (median for the loading .69). A confirmatory factor analysis of the data collected from the present sample of participants (N = 963) was conducted. Model fit was tested with two fit indices: The goodness-of-fit index (GFI) and the root-mean-square error of approximation (RMSEA). Values for GFI indices range from 0 to 1; models with values above .90 have traditionally been considered models with good fit (Loehlin, 1998). RMSEA values close to .06 may be taken as indicators of good model fit (Hu & Bentler, 1999). Results of the confirmatory factor analysis indicated that a four factor model of the BSCDS produced adequate fit indices: GFI = .94 and RMSEA = .07.

Using college students, Niimi and Maeda (2005) reported that each subscale score on the BSCDS was negatively related to unwillingness to get a job (Furuichi, 1995). In order to validate the criterion-related validity of the BSCDS, additional data were gathered in the same Japanese high school (N = 704) as the present sample. Correlations between each subscale score of the BSCDS and the diffusion subscale score of the Career Indecision Scale (Tomiyasu, 1995) were as follows: interpersonal relationship, r = −.12, p < .01, information utilization, r = −.43, p < .01, future planning, r = −.25, p < .01, and decision-making, r = −.30, p < .01.

Identity Style. The Japanese version of the Identity Style Inventory, the JISI (Niimi & Maeda, 2004), was used to measure informational, normative, and diffuse/avoidant styles. The JISI was the translated and corrected version of the ISI3 (Berzonsky, 1992b), and consisted of a 23-item scale composed of three subscales: Nine informational-style items, five normative-style items, and nine diffuse/avoidant-style items. The JISI was developed through a four-step process. First, the original items of three identity style subscales (10 informational-style items, 10 normative-style items, 10 diffuse/avoidant-style items) were translated into Japanese and corrected. Secondly, Japanese female college students (N = 30) judged whether it was difficult to understand each item. Because many students pointed out that the three items related to religion were difficult to answer, these three items were removed. Third, a bilingual person checked for equivalence of meanings between the original and retranslated Japanese version of the 27 remaining items, by rating item similarities on 5-point scale. The mean scores for the 26 items was 4.45 (range from 3 to 5), whereas only one item was rated as a 1. This one item was removed. For the last step, a confirmatory factor analysis conducted on scores of 312 college students indicated that a further three items did not fit the model. As a result, only 23 items of the JISI remained. Responses to items were measured on a 5-point Likert-type scale ranging from 1 (not like me) to 5 (very much like me). Each identity style score was calculated by dividing the summed item responses by number of items, producing a possible range of scores between 1 and 5, with higher scores more strongly reflecting each identity style.

Items assessing informational-style included "I've spent a great deal of time to seriously thinking about what I should do with my life." and "I find that personal problems often turn out to be important challenges." Typical items assessing normative-style were "I like the situations where social norms and group thinking are respected." and "Once I know the good way to handle a problem, I prefer to stick with it." Typical items assessing diffuse/avoidant-style were "I do not think seriously about my future right now, though I may think about it later." and "Often if I don't think about my personal problems, they work themselves out."

Previously reported internal consistency scores of subscales (Japanese college students) ranged from α = .56 (normative) to .75 (informational), and with sample in the present study ranged from α =

.50 (normative) to .73 (informational). These coefficients are similar to those reported by Berzonsky (1992c, 2003) and Nurmi, Berzonsky, Tammi, and Kinney (1997). A confirmatory factor analysis of the data collected with the present sample of participants ($N = 963$) was conducted. Results indicated that a three factor model of the JISI produced adequate fit indices: GFI = .90 and RMSEA = .06. Berzonsky (1989) reported that the correlations between the three identity styles and external locus of control with university students were $r = -.39$ for informational style, $r = -.11$ for normative style, and $r = .39$ for diffuse/avoidant style, respectively. In a Japanese university sample, Niimi and Maeda (2004) found that the JISI had a comparable criterion-related validity to the ISI studied by Berzonsky (1989). Previously reported correlations between each identity style and external locus of control (Kanbara, Higuchi, & Shimizu, 1982) were as follows: Informational ($r = -.30$), normative ($r = -.11$), and diffuse/avoidant ($r = .28$). Berzonsky (1989) assessed the validity of the ISI by exploring the relationships between the three style variables and identity achievement (informational $r = .17$, normative $r = .19$, diffuse/avoidant $r = -.25$). Correlational analyses examined the relationships between the three identity styles and identity achievement measured with a uni-dimensional identity scale which is a Japanese version of Russmussen's ego identity scale (Miyashita, 1987), using additional data ($N = 704$). The results were as follows: Informational ($r = .25$, $p < .01$), normative ($r = .09$, p < .05), and diffuse/avoidant, ($r = -.28$, $p < .01$).

Procedure

High school students were asked to complete a class-administered survey, composed of a few demographic questions such as gender, grade level, and age, the BSCDS, and the JISI. The students' participation in the present study was voluntary. They could withdraw at any time and the study had the consent of the school principal.

Results

A 3 (grade) × 2 (gender) between-subjects multivariate analysis of variance (MANOVA) was performed on scores for the four basic skills for career development, because these scores were correlated ($r = .33$ to .58). Means and standard deviations of the four scores are shown in Table 1. According to Wilks criterion, the main effects of grade (Wilks's $\Lambda = .93$, $F (8, 1908) = 9.24$, $p < .001$) and gender (Wilks's $\Lambda = .95$, $F (4, 954) = 11.62$, $p < .001$) were significant. No grade × gender interaction was revealed. Univariate analyses revealed a significant effect of grade on information utilization, $F (2, 957) = 31.10$, $p < .001$, future planning, $F (2, 957) = 3.21$, $p < .05$, and decision-making, $F (2, 957) = 10.70$, $p < .001$. A post-hoc comparison showed that twelfth graders were more likely than tenth and eleventh graders to report higher levels of information utilization, future planning, and decision-making. There were also significant effects of gender on information utilization, $F (1, 957) = 23.94$, $p < .001$, and future planning, $F (1, 957) = 3.88$, $p < .05$. Girls reported higher levels of information utilization and future planning than boys.

Two-way analyses of variance (ANOVAs) were conducted to examine any differences across grade or between genders in the three identity style scores. Means and standard deviations of the three scores are shown in Table 1. There were significant differences across the grades on the informational style scores, $F (2, 957) = 17.72$, $p < .001$, on the normative style scores, $F (2, 957) = 4.00$, $p < .05$, and on the diffuse/avoidant style scores, $F (2, 957) = 12.76$, $p < .001$. A post-hoc comparison showed that twelfth graders were more likely than tenth and eleventh graders to report higher levels of informational style, and were less likely to report higher levels of the normative and diffuse/avoidant styles. There were also significant differences between the genders on informational style scores, $F (1, 957) = 11.82$, $p < .001$, on the normative style scores, $F (1, 957) = 5.32$, $p < .05$, and on the diffuse/avoidant style scores, $F (1, 957) = 20.54$, $p < .001$. Girls reported higher levels of the informational style than boys, whereas boys reported

Table1 Mean and Standard Deviation

| | Tenth graders | | | | Eleventh graders | | | | Twelfth graders | | | |
| | Boys | | Girls | | Boys | | Girls | | Boys | | Girls | |
Variables	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
BSCDS												
interpersonal relationship	3.54	0.65	3.51	0.56	3.39	0.55	3.50	0.55	3.52	0.67	3.56	0.59
information utilization	3.24	0.69	3.39	0.69	3.30	0.63	3.57	0.74	3.62	0.76	3.87	0.71
future planning	3.27	0.62	3.34	0.59	3.26	0.59	3.27	0.56	3.31	0.74	3.47	0.61
decision-making	3.52	0.62	3.36	0.58	3.42	0.59	3.44	0.59	3.64	0.70	3.62	0.62
JISI												
informational style	3.29	0.49	3.39	0.50	3.33	0.53	3.49	0.53	3.53	0.62	3.64	0.50
normative style	2.97	0.61	2.85	0.54	2.90	0.63	2.88	0.54	2.85	0.64	2.73	0.56
diffuse/avoidant style	3.05	0.59	2.85	0.53	2.95	0.53	2.80	0.44	2.80	0.64	2.67	0.51

Note. Boys n = 428, girls n = 535. Tenth graders n = 335, eleventh graders n = 307, and twelfth graders n = 321.

higher levels of the normative and diffuse/avoidant styles than girls. Because grade and gender differences were revealed in the basic skills and identity style indices, relationships between these two constructs were examined separately for each grade and gender.

Six canonical correlation analyses were conducted to test whether there was any relationship between the three identity styles and the four basic skills for career development. Because all of the six first roots were significant at the p < .0001 level and accounted for over 79% of the variance between canonical composites, Table 2 presents the structure correlation coefficients from the first roots for each gender and grade. For boys, the first root of tenth graders accounted for 89.20%, Rc = .46; F (12, 346.88) = 8.89, p < .0001, the first root of eleventh graders accounted for 92.36%, Rc = .34; F (12, 391.86) = 6.11, p < .0001, and the first root of twelfth graders accounted for 93.35%, Rc= .47; F (12, 338.95) = 8.34, p < .0001 of the variances between the canonical composites, respectively. A criterion of .30 was used as the critical value to determine the significance of these structural correlation coefficients (Bartley & Robitschek, 2000; Turner et al., 2006). As shown in Table 2, coefficients indicated that the first roots of boys were characterized by (a) positive loading of each skill on the basic skills for career development variate and (b) positive loading of informational style and negative loading of diffuse/avoidant style on the identity style variate. Table 2 also shows that the presence or absence of loading of normative style varied with grade.

Table 2 Structure Correlation Coefficients for Predictor Variables and Criterion Variables

| | Boys | | | Girls | | |
Variables	10th	11th	12th	10th	11th	12th
Basic Skills for Career Development						
interpersonal relationship	.76	.46	.60	.56	.75	.80
information utilization	.68	.65	.79	.85	.79	.80
future planning	.81	.76	.87	.74	.84	.75
decision-making	.52	.89	.82	.75	.81	.77
Percentage of Variance[a]	.49	.50	.61	.56	.63	.61
Redundancy[b]	.22	.17	.28	.19	.23	.11
Identity Style						
informational style	.91	.92	.89	.99	.96	.94
normative style	.36	.03	.35	.19	.47	.24
diffuse/avoidant style	- .46	- .55	- .66	- .41	- .17	- .45
Percentage of Variance[a]	.35	.36	.45	.39	.44	.38
Redundancy[b]	.16	.12	.21	.14	.16	.07
Adjusted canonical correlation	.66	.56	.67	.57	.58	.40

Note. For boys 10th n = 138, 11th n = 155, and 12th n = 135.
　　　For girls 10th n = 197, 11th n = 152, and 12th n = 186.
[a] Proportion of variance extracted by the canonical variate from its own variables.
[b] Proportion of variance extracted by the canonical variate from the opposite variables.

For tenth and twelfth graders, normative style positively loaded on the identity style variate, whereas for eleventh graders normative style did not load on the identity style variate.

For girls, the first root of tenth graders accounted for 91.93%, $Rc = .35$; F (12, 502.98) = 8.12, $p <$ .0001, the first root of eleventh graders accounted for 85.80%, $Rc = .36$; F (12, 383.93) = 7.21, $p < .0001$, and the first root of twelfth graders accounted for 79.42%, $Rc= .18$; F (12, 472.88) = 4.02, $p < .0001$ of the variances between the canonical composites, respectively. As shown in Table 2, coefficients indicated that the first roots of girls were characterized by (a) positive loading of each skill on the basic skills for career development variate and (b) positive loading of informational style on the identity style variate. Table 2 also shows that the presence or absence of loading of normative style and diffuse/avoidant style varied with grade. For tenth and twelfth grades, normative style did not load and diffuse/avoidant style negatively loaded on the identity style variate. For the eleventh grade, these styles loaded on the identity style variate inversely.

These findings demonstrated that the four basic skills are positively related to the informational style, and negatively related to the diffuse/avoidant style. The relationships between normative style and the four basic skills varied with gender and grade. These patterns of relationship were observed in the same correlation analyses of additional data (see Table 3).

Table3 Structure Correlation Coefficients for Predictor Variables and Criterion Variables among additional data

	Boys			Girls		
Variables	10th	11th	12th	10th	11th	12th
Basic Skills for Career Development						
interpersonal relationship	.69	.73	.56	.54	.60	.70
information utilization	.78	.80	.81	.72	.82	.81
future planning	.93	.72	.74	.83	.88	.73
decision-making	.71	.86	.82	.84	.87	.87
Percentage of Variance[a]	.62	.61	.56	.56	.66	.61
Redundancy[b]	.31	.32	.20	.13	.31	.22
Identity Style						
informational style	.96	.93	.90	.84	.81	.97
normative style	.22	.52	- .25	.26	.39	.12
diffuse/avoidant style	- .57	- .24	- .70	- .62	- .72	- .48
Percentage of Variance[a]	.43	.35	.44	.36	.45	.34
Redundancy[b]	.22	.18	.16	.08	.21	.12
Adjusted canonical correlation	.69	.71	.57	.46	.66	.58
Rc	.50	.53	.36	.24	.46	.36
F	6 .10	7 .15	4 .40	4 .59	8 .07	5 .19
df	12, 222.53	12, 230.47	12, 241.05	12, 415.67	12, 317.78	12, 325.72
p	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
%	94 .99	92 .54	87 .09	83 .19	90 .83	97 .39

Note . For boys 10th n = 91, 11th n = 94, and 12th n = 98.
For girls 10th n = 164, 11th n = 127, and 12th n = 130.
[a] Proportion of variance extracted by the canonical variate from its own variables.
[b] Proportion of variance extracted by the canonical variate from the opposite variables.

Discussion

The purpose of the present study was to assess the extent and nature of any relationships between basic skills for career development and the identity style of high school students in Japan. Results indicated that all four of the basic skills for career development were positively related to the informational style, and negatively related to the diffuse/avoidant style. The findings seem to be partially consistent with a study conducted by Berzonsky and Kuk (2000), who found that university adaptation

scores were positively associated with informational style scores and negatively associated with diffuse/ avoidant style scores. They used a university adaptation measure composed of three subscales to assess the ability to plan and execute in a self-disciplined fashion (developing academic autonomy), form open and honest peer relationships (developing mature interpersonal relationships), and possession of well-defined educational goals and realistic career and life plans (establishing educational purpose). If these subscales can be seen as tapping some aspects of the basic skills for career development (interpersonal relationship, future planning, decision-making), both these earlier results and present results suggest the possibility that career-related skills play an important role in utilization of the informational and diffuse/ avoidant styles in the identity exploration process.

Consistent with previous studies (e.g., Patton & Lokan, 2001; Soenens, Berzonsky, Vansteenkiste, Beyers, & Goossens, 2005), boys were more likely than girls to report lower levels of basic skills for career development, and were more likely to rely on the diffuse/avoidant strategy (see Table 1). Analyses with additional data ($N = 704$) showed similar gender differences. These results suggest that girls are more likely than boys to utilize career-related skills to acquire career-related information, make career plans, and organize self-constructs. Thus, career education in Japan that emphasizes to improvement of career-related skills might be more needed for boys than for girls.

Interestingly, it was found that boys tended to rely on the normative style more than girls. This result is inconsistent with previous studies (e.g., Berzonsky, 1992c, 1994; Soenens et al., 2005). Soenens et al. (2005) revealed that girls reported higher levels of the normative style than boys, but some studies (e.g., Berzonsky, 1992c, 1994) reported no such gender differences. One explanation of these inconsistencies is that they may reflect differences in parental expectations and demands of getting higher levels of educational achievement for boys and girls in Japan. Future studies may confirm the generalizability of this finding by sampling adolescents from more diverse communities. Future studies should also clarify the influence of parental expectations and demands on the identity styles, from a cross-cultural perspective.

The present results have implications for career education in Japan. Students who acquire higher levels of career-related skills through career education might come to employ an informational style to deal with identity-related issues. Students who employ the informational style have the potential for identity exploration and career exploration, because they actively seek out, process, and evaluate relevant information. However, career education in Japan (emphasizing the four career-related skills) has started recently and the effects of such efforts remain to be examined. Future studies are needed to determine whether teaching of career-related skills could facilitate students' identity exploration and career exploration, via utilization of an informational social-cognitive strategy.

The present study has several limitations. First, the four basic skills were self-reported by only high school students. If we had also collected information about the basic skills from teachers and parents, these multiple perspectives might have provided important information. Secondly, because the present sample came from just one high school, the present results cannot be generalized. It is important to investigate gender differences and developmental processes of career-related skills and identity formation among other high school students and other age groups. Finally, reliabilities of the scales used in the present study were relatively low. Future studies are needed to refine these measures.

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