Tohoku Psychologica Folia
2017, *76*, 1–10

Effects of group identification on learning attitudes: A study of Japanese student nurses' cognitive process of social identity with their schools

KEI-ICHIRO IMAZAI（今在慶一朗）[1]

Social identity is often thought to be promoted by comparing an in-group with an out-group, and is thought to cause conformity with the group's norms or values. However, social identity is known also to be promoted by the experience of lively social interaction in the group. Although identification with the group has been thought to suppress personal interests, group members would be eager to improve their own standing when the group's goal is to advance group members' development. In this study, a questionnaire survey was conducted to examine the relations among nurse' identification with schools, learning attitudes and social interaction. It was observed that social identity was promoted by human relations and communication, and strengthened shared cognition with other students, commitment to learning, job satisfaction in the future, positive self-image and self-efficacy.

Key words: social identity, social interaction, learning attitude

Students often compete between schools in games or contests, and 'school spirit' or 'school color' are required in such situations. On the other hand, school spirit would not be considered to be a learning situation in school. Cultivating school spirit, of course, is not official curriculum, however, it cannot denied that identification with schools improves students' ability or performance in classes as well as in sports teams or music groups. It can be argued that school spirit is a kind of social identity, which promotes conformity and achieving the group's goal. Social identity as a member of a school is predicted to effect students' cognition, motivation, and behaviour concerning learning. In this study, the psychological function of school spirit is investigated empirically through a questionnaire survey.

Social identity in school

Identity can be classified into two categories; individual identity and social identity. Social identity is a part of the self-concept corresponding to knowledge of group membership, and the value and emotional significance attached to the membership (Tajfel, 1978; Tajfel & Turner, 1986). Social identity theory explains how group members maintain or promote self-esteem by being members of valuable groups, and argues that group members promote their self-esteem to confirm they are members of valuable groups.

Consequently, people who categorize themselves as members of particular groups behave in less variable ways because of conformity pressures caused by identification with the group.

1. Hokkaido University of Education

Therefore, the more the members identify themselves with the group, the easier it is for them to accept the group's norms, values, and goals. In this way, social identity could be thought to enhance group members' spontaneous efforts for the groups and encourages group-oriented behaviour such as individual contributions to the group's performance (van Knippenberg & Ellemers, 2003).

Applying these findings, the more students identify with schools, the more they will follow the schools' policies; in turn, they would respect teachers' instructions, study hard, and seek to perform well on exams.

Forming student identity

It was originally thought that group members would maintain their self-esteem by comparing their own in-groups with other out-groups to confirm their groups' value (Tajfel, 1978). However, it is known that there are other factors besides comparing with other groups, which could maintain or promote self-esteem in groups. For instance, Postmes, Spears, Lee, and Novak (2005) confirms that social identity would be formed on two different bases. In a depersonalized situation, social identity would be formed by a group's features ('deductive identity'), but in an individuated situation, social identity would be formed by social interaction ('inductive identity'). Social interaction could be thought to be promoted by mutual understanding, which makes activities in the group easier. Similarly, Takehashi and Karasawa (2010) confirmed in an artificial laboratory experiment that social interaction would promote group members' shared cognition, which is collective thinking about group activity, through the medium of group identification.

Furthermore, Tyler and Blader (2000) proposed group engagement which divides components of social identity into 'group pride' and 'respect within group', which are derived from fair treatment within the group. Group pride is similar to the original concept of prior research regarding social identity, which is based on membership in a high-status group, compared with other groups. On the other hand, respect within a group means the assessment of members' own status within the group. Thus, social identity is thought to be maintained not only by groups' value but also by one's reputation in the group. Fair and lively interaction in a group could be an index of the value of the group compared to other groups and could reflect that each member is highly respected.

With respect to the setting, it would not be natural to consistently perceive other schools as out-groups, therefore, social identity connected with schools could be easily promoted through mutual interaction.

Nursing school

In this study, nursing students were considered in terms of students' identities in their school because nursing students take most of the same subjects, complete the same training period in the hospital, and have common goals. Entering nursing school is one of the most popular ways to become a registered nurse in Japan. The schools have a three-year graduate

system, and students must take an examination to obtain a national license after graduation. Such homogeneity is thought to be convenient for research.

Furthermore, in nursing school, identity regarding a nursing career is particularly important. Nursing school is not only an educational institution, but also a training organization with a mission to develop students' career identity, since nurses must maintain professionalism throughout their carrier (Kikuchi, 2005). In nursing schools, student identity would be expected to be connected tightly and continuously with vocational identity.

Hypothesis

As can be seen in previous research, social identity is thought to be a parameter between social interaction and group-oriented attitude in a group. Accordingly, in this study, these findings are applied to a school situation, and two hypotheses are formulated as follows.

First, social identity would be thought to promote group members' attitudes or behaviour in accordance with group norms, values, and goals. Therefore, students would also be influenced by identification with their schools. The more strongly students identify with their schools, the more easily they would develop a school-oriented attitude; specifically, they would tend to commit to learning and have a suitable self-image as a nursing student (hypothesis 1).

Second, social identity would be thought to be promoted not only by comparison with other groups, but also interaction within groups, because group members come to understand each other and confirm their status in groups through this interaction. Thus, students who experience active interaction in the school would identify with their school more (hypothesis 2).

Method

Procedure

A web-based questionnaire survey was conducted from the end of January until the beginning of March 2017. Five nursing schools (named A-E for anonymizing in this paper) in Hakodate, Esashi, and Asahikawa cooperated with this research. Students received a request to complete the questionnaire at their school and answered with their mobile phones.

Respondents

In total 302 nursing students (female: 272, male: 30 /A:134, B:17, C:46, D:57, E:48) answered the questionnaire, for a response rate of 52.5%. Four schools had three-year system. School E was a two-year school for students who had already obtained an assistant nurse license before entering school. In following analysis, students in school E was regarded as one year senior.

Scales

The social interaction scale consisted of two sub-scales: human relations and communication. The human relations sub-scale was composed of the original three questions

regarding quality of relationships among classmates, seniors, and juniors (α = .61). The communication sub-scale was composed of three questions regarding communication in school based on Takehashi and Karasawa (2010) and revised to adjust to the school situation (α = .83). The social identity scale with three questions ask about student's feelings of identification with the school and attachment, was also based on Takehashi and Karasawa (2010) (α = .83). The group-oriented attitude scale was expected to measure students' attitudes toward school policies, and was composed of three sub-scales as follows. The shared cognition sub-scale was composed of three questions based on Takehashi and Karasawa (2010) measuring the degree to which students share goals, concerns, and views (α = .81). The commitment sub-scale was composed of three questions based on Kato (1983) measuring the degree to which students devote themselves to learning and realize their duty (α = .83). The job satisfaction sub-scale was composed of four questions based on Ida and Nozawa (2009) measuring the degree to which students were satisfied with the future job of a nurse from the point of view of it being worthwhile, providing social status and matching their own aptitude (α = .81).

Furthermore, four scales regarding self-image as another aspect of learning attitude were administered in this study. First, the self-image scale was composed of five questions about respondents' own overall positive image based on Rosenberg (1965) (α = .90). Next, self-efficacy consisted of the following three sub-scales. The self-efficacy for learning scale was composed of four questions about the self-confidence regarding learning activities and term examinations based on Wada and Yamamoto (2013) (α = .71). The self-efficacy for treating patients scale was composed of four questions about self-confidence regarding nursing patients, based on Manabe et al. (2007) (α = .89). The self-efficacy for complying with mentors scale was composed of three questions about the self-confidence regarding communicating successfully with mentors during training in hospitals based on Manabe et al. (2007) (α = .84). These self-rating questions were answered using a five point scale (not at all (1) to completely (5)).

In addition, the results of a simulation test using an objective index were obtained. This test is performed every year by several companies to confirm whether students have the ability to pass the national examination for the nurse's license. Therefore, this test is supposed to be taken by students who are more senior than second year. In this study, the results are categorized as 'already passed (1)' or 'not passed yet (0)'.

Results

As shown in Table 1, most of the scales' means were higher than 3.00 (middle point), indicating that students were positive about school activities. In particular, the mean for job satisfaction in the future was higher than 4.00 with a SD of .77 indicating that students were highly motivated to become a nurse. However, the mean of self-image was lower than the middle point, potentially indicating that their own images were not so favourable. On the other hand, the correlations were not overly high (*r*s between .12 -.57). Regarding the

simulation test, which was scored on a binary scale, 9 out of 112 second-year students and 84 out of 102 third-year students passed.

Social identity effects

In this study, regression analyses were performed following two steps to confirm social identity effects without demographic variables or situational factors' effects. In the first step, demographic and situational variables were used as the explanation variables. Regarding schools, school A was the referent value to compare with other schools because there were the most respondents in school A. In the second step, social identity and its factors were added. As can be seen in Table 2[1], each model in the second step that included social identity had a higher *Adjusted* R^2 than in the first step, and social identity was consistent in its significant effect on all the response variables. In addition, human relations was confirmed to significantly promote shared cognition, and communication was confirmed to significantly promote shared cognition, and job satisfaction. Moreover, school year was shown to significantly promote commitment.

Next, regression analyses were performed regarding efficacy using a similar method. The results showed that social identity was also consistent in its significant effects on self-image and efficacy, and school year also promoted three efficacy variables. In addition, we demonstrated significant effects in terms of communication's positive effect on self-image, human relation's positive effect on efficacy for patients, and age's negative effect on self-efficacy for patients and mentors.

Furthermore, a logistic regression with forward selection (Wald method) was performed to identify the variables that could influence exam results as an objective performance. The explanation variables here are all the explanation variables and the response variables in analyses for learning attitudes. As the result of this analysis, 88.3% of respondents were distinguished correctly. As shown in Table 3, the effects of age, school year, school B and efficacy for learning were confirmed.

Table 1. Mean, standard deviation, and correlations.

	M	*SD*	*N*	Communication	Social identity	Shared cognition	Commitment	Job satisfaction	Self image	Efficacy (learning)	Efficacy (patient)	Efficacy (mentor)
Relation	3.32	.64	302	.37**	.46**	.39**	.29**	.26**	.27**	.12*	.17**	.16**
Communication	3.75	.87	302		.55**	.48**	.29**	.44**	.37**	.15*	.12*	.15*
Social identity	3.31	.98	302			.57**	.49**	.47**	.49**	.36**	.32**	.26**
Shared cognition	2.93	.93	302				.38**	.34**	.41**	.26**	.29**	.23**
Commitmen	3.74	.85	302					.48**	.43**	.49**	.45**	.35**
Job satisfaction	4.21	.77	302						.45**	.30**	.28**	.32**
Self image	2.75	.92	302							.49**	.43**	.36**
Efficacy (learning)	3.02	.82	302								.45**	.38**
Efficacy (patient)	3.11	.73	302									.56**
Efficacy (mentor)	3.06	.91	302									

1. Each Figure in left column means first step's B, and one in the right column means second step's B in table 2 and 4.

Table 2. Effect of social identity on learning attitudes.

	Shared cognition		Commitment		Job satisfaction	
Male	-.11 †	-.06	-.08	-.05	-.05	.02
Age	.18	.05	.00	-.11	.05	-.05
School year	.06	.07	.24 ***	.24 ***	-.08	-.07
School B	-.11 †	-.07	-.06	-.03	-.06	-.01
School C	-.09	.02	.09	.19	.06	.18 **
School D	-.09	-.08 †	-.05	-.04	-.06	-.05
School E	.02	.00	.01	-.01	.09	.09
Junior college graduate	-.01	.06	-.08	-.02	-.09	-.05
University graduate	-.04	-.02	.13	.14 *	.04	.06
Work experience	-.28 *	-.16	.07	.19 †	-.04	.05
Social identity		.39 ***		.46 ***		.37 ***
Human relations		.15 **		.08		-.03
Communication		.20 ***		.05		.28 ***
Adjusted R^2	.03 *	.39 ***	.07 **	.33 ***	.00	.29 ***

† $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Table 2. Effect of social identity on learning attitudes (continued).

	Self image		Efficacy (lerning)		Efficacy (patient)		Efficacy (mentor)	
Male	-.02	.02	-.05	-.03	.02	.02	.03	.05
Age	.15	.05	.00	-.08	-.19 †	-.27 **	-.21 †	-.27 *
School year	.01	.01	.26 ***	.25 ***	.47 ***	.47 ***	.24 ***	.24 ***
School B	-.13 *	-.10 †	-.06	-.05	.02	.02	.15 *	.17 **
School C	-.21 **	-.11 †	-.09	-.02	-.02	.03	.08	.14 *
School D	-.15 **	-.14 **	-.11 *	-.10 †	-.25 ***	-.24 ***	-.08	-.07
School E	-.06	-.07	-.12	-.11	.05	.04	.23 **	.22 **
Junior college graduate	-.08	-.04	.01	.05	.04	.08	-.02	.01
University graduate	.05	.06	.17 *	.16 *	.03	.03	.08	.08
Work experience	-.05	.05	.06	.15	.03	.11	.09	.16
Social identity		.37 ***		.38 ***		.28 ***		.24 **
Human relations		.06		-.01		.11 *		.04
Communication		.14 *		-.04		-.05		.04
Adjusted R^2	.04 *	.27 ***	.10 ***	.21 ***	.23 ***	.32 ***	.08 ***	.16 ***

† $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Table 3. Performance factor.

	Simulation test	
	B	Exp(*B*)
Age	.20 ***	1.22
School year	4.81 ***	122.90
School B	2.28 **	9.79
Efficacy (learning)	.61 *	1.84
χ^2	164.26 ***	
Cox-Snell R^2	.54	
Nagerkelke R^2	.72	

† $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Social identity's factor

To examine the effect of human relations and communication on social identity, a regression analysis was performed using a similar method to the former analyses. The result showed that communication and human relations significantly promoted social identity (see Table 4).

Table 4. Social identity factors.

	Social identity	
Male	-.57	.01
Age	.20 †	.10
School year	.02	.07
School B	-.05	-.01
School C	-.20 **	-.15 **
School D	-.05	-.06
School E	.00	-.04
Junior college graduate	-.10	-.04
University graduate	.01	.07
Work experience	-.24 †	-.19 †
Human relations		.30 ***
Communication		.42 ***
Adjusted R^2	.04 *	.40 ***

† $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Discussion

Social identity effects on learning attitudes

By analysing the relations between social identity and learning attitudes which are shared cognition, commitment, job satisfaction, self-image and self-efficacy, social identity was confirmed to promote attitude variables extensively and consistently. Based on these results, hypothesis 1 was partly supported. Promoting group members' service to the group, social identity has been often thought to lead to group member's thinking or behaviour lacking self-interest. Considering such prior findings regarding social identity, students who identify with schools could improve their attitudes for learning, if the schools' goal is students' development. As Tyler and Blader (2000) argued, students might desire to be exemplary in order to be respected in the school.

Social identity improve not only self-image and self-efficacy for learning, but also self-efficacy for patients and mentors: this suggests that students develop self-confidence in their own activities outside of schools through their identity as a school member. Formation of identity with a school could be effective to develop vocational identity and efficacy; this is important because nursing schools' mission is to train students to be nurses and connect learning in school with work outside of school.

In addition, as school year promoted commitment and all self-efficacy variables, this suggest that students become accustomed to school as the years go by, and learn to cope with the curriculum. However, simultaneously, age suppressed self-efficacy for patients and mentors. These results suggest that social interaction with unfamiliar people becomes difficult for senior students.

On the other hand, social identity was not shown to directly improve objective performance, because it was not confirmed to promote the result of a simulation test. However, objective performance was promoted indirectly by social identity through self-efficacy. Therefore, performance would be based more tightly on individual self-efficacy than collective attitudes.

Human relations and communication as social identity factors

Because human relations and communication were confirmed to significantly promote social identity in this analysis, hypothesis 2 was supported. Although, in prior studies, contrasts between groups have often been argued to cause social identification, this result showed that social interaction also improved social identity without comparing with other groups. As good human relationships and lively communication improve mutual understanding, students would come to be willing members of the schools. In any case, comparing schools to form social identity involves the possibility of denigrating other schools. From the point of view of education, good human relations and lively communication are more favourable.

In addition, human relations and communication were confirmed to have a direct effect on learning attitudes. Shared cognition was promoted significantly by human relations

and communication. Regardless of the image of the school, if students had comfortable interpersonal interactions, they viewed their activity in school in a homogeneous manner. Promoting self-efficacy for patients, good human relations might improve ability to handle unfamiliar people with other students together. As communication promoted job satisfaction in the future and self-image, conversation with each other might aid vocational self-image.

Conclusion and limitation

In this study, social identity with school was predicted to improve learning attitudes and to be strengthened by interpersonal interaction. Through a questionnaire survey, it was shown that social identity mediated the relations between interpersonal interaction, or human relations and communication, and learning attitudes, or shared cognition, commitment, job satisfaction, self-image, and efficacy. Figure 1 portrays the results. Social identity could be thought of as a primary moderator for learning attitudes in school. Moreover, the simulation test result as a measure of student performance was improved by social identity indirectly. However, as the simulation test result was only a single scale measuring objective performance in this study, further research should be conducted to ascertain actual effects of social identity. In addition, this study's subjects were nursing students; therefore, these results should be expanded to apply to other types of schools such as universities. In particular, social identity's effect on vocational identity development in university is uncertain, because university's students' future careers in future and their purposes for learning are diverse; thus, these identities do not necessarily coincide naturally.

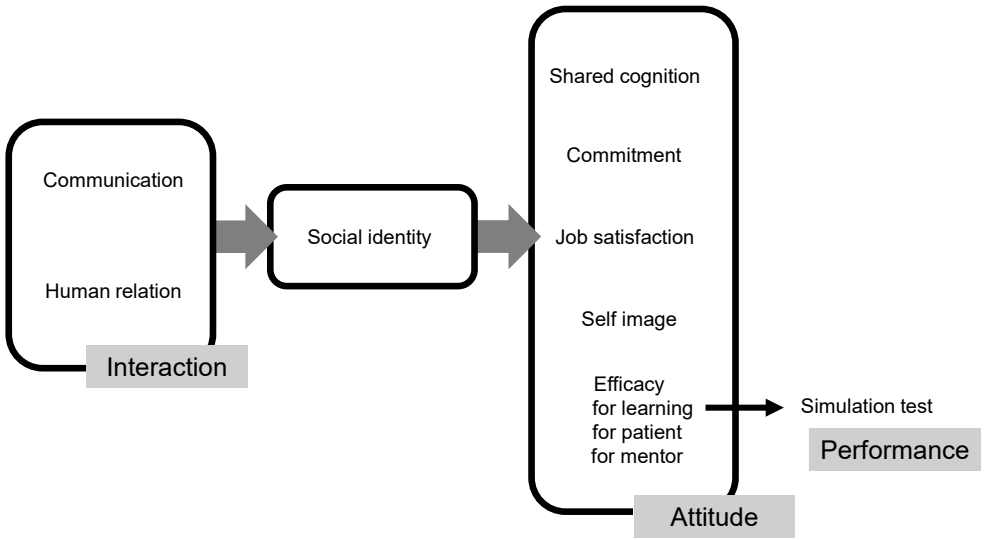

Figure 1. Social identity's mediation process.

References

Ida, M., & Nozawa, M. (2009). Kangoshi-no shinriteki well-being-ni eikyou-o oyobosu youin-ni tsuite: Kyoubunsan-kouzoubunseki-o mochiita inga model-no kentou [A study about the psychological factor of nurses' well-being]. *The Journal of the Faculty of Psychology, Rissho University, 7*, 1-14.

Kato, A. (1983). A study of identity statuses and their structure in university students. *The Japanese Journal of Educational Psychology, 31*, 292-302. (in Japanese)

Kikuchi, K. (2005). Kangoshoku-no career ninshiki-o keisei-suru shoyouin-no kousatsu: Career anchor-to mentaling-ga oyobosu jikeiretsuteki henka-o tyuushin-to shite [A study about factors to recognize the career of nurse]. *Hokkaido University Collection of Scholarly and Academic Papers, 1*, 29-41.

Manabe, E., Sasagawa, H., Matsuda, K., Kitajima, K., Sonoda, E., Taneike, R., & Ueno, N. (2007). Development of a self-efficacy scale for nursing students during clinical training and an assessment of its reliability and validity. *Journal of Japan Society of Nursing Research, 30*, 43-53. (in Japanese)

Postmes, T., Spears, R., Lee, T., & Novak, R. (2005). Individuality and social influence in groups: Inductive and deductive routes to group identity. *Journal of Personality and Social Psychology, 89*, 747-763.

Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.

Tajfel, H. (1978). Social categorization, social identity, and social comparison. In H. Tajfel (Ed.), *Differentiation between social groups: studies in the social psychology of intergroup relations* (pp.61-76). London: Academic Press.

Tajfel, H., & Turner, J. C. (1986). The social identity theory of intergroup behaviour. In S. Worchel & W. G. Austin (Eds.), *Psychology of intergroup relations* (pp. 7–24). Chicago, IL: Nelson-Hall.

Takehashi, H., & Karasawa, K. (2010). Reciprocal effects of communication, group identification, and shared cognition in simulated gaming. *The Japanese Journal of Experimental Social Psychology, 50*, 117-127. (in Japanese)

Tyler, T. R., & Blader, S. L. (2000). *Cooperation in groups: Procedural justice, social identity, and behavioral engagement*. Philadelphia, PA: Psychology Press.

van Knippenberg, D., & Ellemers, N. (2003). Social identity and group performance: Identification as the key to group-oriented efforts. In S. A. Haslam, D. van Knippenberg, M. J. Platow, & N. Ellemers (Eds.), *Social identity at work: Developing theory for organizational practice* (pp. 29-42). New York and Hove, UK: Psychology Press. Spears, Lee, & Novak.

Wada, T., & Yamamoto, H. (2013). The relationship between self-efficacy and performance. *Journal of Exercise Physiology, 29*, 473-477. (in Japanese)

(Received November 15, 2017)
(Accepted December 13, 2017)