Tohoku Psychologica Folia
2016, *75*, 1–8

Attitudes Formation of Japanese Teachers toward Inclusive Education System

JUNICHI TAKAHASHI（高橋純一）[1], MASAKO TSURUMAKI（鶴巻正子）[1],
AND AKIHISA OZEKI（大関彰久）[1]

We examined teachers' attitudes formation toward the inclusive education system in Japan using a questionnaire method. A total of 145 teachers from special (77 teachers) and normal schools (68 teachers) rated the Japanese version of the scale for measuring teachers' perception on inclusion, SACIE-R (Sentiments, Attitudes, and Concerns about Inclusive Education, Revised). Using principal component analysis, we extracted three principal components: *Sentiments*, *Attitudes*, and *Concerns*. We compared principal component scores between male and female teachers and between the special and normal school teachers in each principal component. We found sex differences only in *Attitudes*; female teachers held more positive attitudes for an inclusive education system compared with male teachers. Moreover, we found individual differences between school types in *Sentiments* and *Attitudes*; special school teachers had lower sentiment scores and more positive attitudes compared with normal school teachers. These results provide evidence on Japanese teachers' attitudes toward the relationship between students with disabilities and the inclusive education system.

Key words: Inclusive education system, Understanding disabilities, Special needs education

An inclusive education system within schools is one where students from a wide range of backgrounds and abilities learn with their peers in regular schools (Loreman, Earle, Sharma, & Forlin, 2007). The implementation of such a system is an international trend, regarding which the United Nations (2006) proposed the following:

> In realizing this right, States Parties shall ensure that: a. Persons with disabilities are not excluded from the general education system on the basis of disability, and that children with disabilities are not excluded from free and compulsory primary education, or from secondary education, on the basis of disability; b. Persons with disabilities can access an inclusive, quality and free primary education and secondary education on an equal basis with others in the communities in which they live; c. Reasonable accommodation of the individual's requirements is provided; d. Persons with disabilities receive the support required, within the general education system, to facilitate their effective education; e. Effective individualized support measures are provided in environments that maximize academic and social development, consistent with the goal of full inclusion. (Article 24, Convention on the Rights of Persons with Disabilities, UN).

To promote these trends, changes may be needed in teachers' attitudes, which have been

1. Faculty of Human Development and Culture, Fukushima University, 1 Kanayagawa, Fukushima-Shi, Fukushima 960-1296, Japan (Email: j-takahashi@educ.fukushima-u.ac.jp)

found to enhance the implementation of an inclusive education system (Meijer & Foster, 1988; Savolainen, Engelbrecht, Nel, & Malinen, 2012; Soodak, Podell, & Lehman, 1998; Weisel & Dror, 2006). Loreman et al. (2007) proposed the Sentiments, Attitudes, and Concerns about Inclusive Education (SACIE) scale to measure teachers' attitude toward an inclusive education system. The SACIE is composed of three principal components: *Sentiments*, *Attitudes*, and *Concerns*. Forlin, Earle, Loreman, and Sharma (2011) modified SACIE as SACIE-R, where "R" stands for "revised," with 15 items under the same three principal components.

A Japanese version of SACIE-R was proposed by Forlin, Kawai, and Higuchi (2015). Minor changes were made to the items within the scale to ensure that the focus was on self-beliefs on inclusion, based on a review of the translated questionnaire. Takahashi, Igarashi, Kanno, and Tsurumaki (2016) proposed another Japanese version of SACIE-R, which is identical to the original version of SACIE-R, except for the language (Forlin et al., 2011). Takahashi et al. (2016) conducted their Japanese SACIE-R for pre-service teachers (n = 431). They extracted three principal components using principal component analysis, as in original version of SACIE-R: Sentiments, Attitudes, and Concerns. Both Japanese versions of SACIE-R may be useful for measuring teachers' attitude toward the implementation of an inclusive education system (Forlin et al., 2015; Takahashi et al., 2016).

The present study aimed to examine Japanese teachers' attitude toward an inclusive education system using the questionnaire method. We adopted the Japanese version of SACIE-R by Takahashi et al. (2016). The participants were teachers from special and normal schools. First, we confirmed the principal components (i.e., *Sentiments*, *Attitudes*, and *Concerns*) constructing the Japanese version of SACIE-R. Second, on the basis of the principal component scores, we examined sex differences and individual differences in the school type for each score.

Method

Participants

The participants were 145 teachers from special (n = 77, 31 males and 46 females) and normal schools (n = 68, 37 males and 31 females). Their ages ranged from 20 to 50 years old. All of them provided informed consent before participating.

Instruments

We used a Japanese version of SACIE-R (Takahashi et al., 2016; also see Forlin et al., 2015) to measure teachers' attitude toward an inclusive education system. SACIE-R consists of 15 items referring to various situations in inclusive education; participants are asked to rate these situations on a four-point scale (SD: Strongly Disagree, D: Disagree, A: Agree, and SA: Strongly Agree). Example items are "I find it difficult to overcome my initial shock when meeting people with severe physical disabilities," "Students who have difficulty expressing their thoughts verbally should be in regular classes," and "I am concerned that my workload will increase if I have students with disabilities in my class." The questionnaire is composed of three principal components: *Sentiments*, *Attitudes*, and *Concerns*, each of which includes five items.

Procedure

All participants completed the questionnaire scale in a group setting. The time allotted for completing the questionnaire was 15 minutes.

Analysis

We used principal component analysis with varimax rotation for extracting the principal components, following Forlin et al. (2011).[1] Using the principal components scores, we analyzed sex differences and individual differences in the school types of teachers for each principal component using the *t*-test.

Results

Principal component analysis results

Table 1 shows the principal component loadings after varimax rotation. We conducted principal component analysis on the scores of the Japanese version of SACIE-R. The analysis extracted three principal components. The first principal component accounted for 22.45% of the total variance, which includes the items "I find it difficult to overcome my initial shock when meeting people with severe physical disabilities" and "I am afraid to look directly at a person with a disability." The second principal component accounted for 17.28% of the total variance, including the items "Students who need an individualized academic program should be in regular classes" and "Students who have difficulty expressing their thoughts verbally should be in regular classes." The third principal component accounted for 11.24% of the total variance, including the items "I dread the thought that I could eventually end up with a disability" and "I am concerned that my workload will increase if I have students with disabilities in my class." These principal components could be regarded as *Sentiments*, *Attitudes*, and *Concerns*, respectively, according to the terminology of Forlin et al. (2011).[2] Further, we calculated Cronbach's α for all scales to confirm the reliability of each principal component. The α-values for the first (*Sentiments*), second (*Attitudes*), and third (*Concerns*) were 0.75, 0.70, and 0.59, respectively.

Sex differences in each principal component score

Using principal component scores, we examined sex differences in each principal component. We conducted *t*-tests with participants' sex as the between-participants factor of *Sentiments*, *Attitudes*, and *Concerns*. We found sex differences only in *Attitudes* [$t(143) = 3.48$, $p < 0.001$, $d = 0.60$], and not in *Sentiments* and *Concerns* [*Sentiments*: $t(143) = 1.36$, $p = 0.17$, $d = 0.23$; *Concerns*: $t(143) = -0.70$, $p = 0.48$, $d = 0.11$]. Female teachers showed a lower principal component score than male teachers in *Attitudes*.

Individual differences in the school type of teachers in each principal component score

We examined the relationship between the school type of teachers and each principal component score. The teachers were grouped into the special school ($n = 77$) and normal school

Table 1. Principal component loadings after varimax rotation.

	item	PC 1	PC 2	PC 3
13	I find it difficult to overcome my initial shock when meeting people with severe physical disabilities.	.754	.166	.072
11	I am afraid to look directly at a person with a disability.	.741	.072	-.080
5	I tend to make contacts with people with disabilities brief and I finish them as quickly as possible.	.710	.012	.031
14	I am concerned that I do not have knowledge and skills required to teach students with disabilities.	.683	-.071	.016
10	I am concerned that I will be more stressed if I have students with disabilities in my class.	.551	-.175	.452
15	Students who need an individualized academic program should be in regular classes.	-.066	.749	-.200
3	Students who have difficulty expressing their thoughts verbally should be in regular classes.	.179	.728	.089
6	Students who are inattentive should be in regular classes.	-.011	.707	.027
12	Students who frequently fail exams should be in regular classes.	.067	.624	.071
8	Students who require communicative technologies (for example Braille and sign language) should be in regular classes.	-.197	.534	-.340
2	I dread the thought that I could eventually end up with a disability.	-.098	-.004	.705
7	I am concerned that my workload will increase if I have students with disabilities in my class.	-.081	.008	.660
4	I am concerned that it will be difficult to give appropriate attention to all students in an inclusive classroom.	.150	-.008	.640
1	I am concerned that students with disabilities will not be accepted by the rest of the class.	.478	-.092	.567
	Eigen value	3.14	2.42	1.57
	Contribution of each principal component (%)	22.45	17.28	11.24
	Cumulative contribution (%)	22.45	39.73	50.97

Note: PC means principal component. Cronbach's α for scales based on PC 1 (*Sentiments*) = 0.75, PC 2 (*Attitudes*) = 0.70, and PC 3 (*Concerns*) = 0.59.

teachers (n = 68). We conducted t-tests with the school type (2; special versus normal schools) as the between-participants factor on *Sentiments*, *Attitudes*, and *Concerns*, using principal component scores. For *Sentiments and Attitudes*, we found significant differences between the groups [*Sentiments*: $t(143) = 6.38$, $p < 0.001$, $d = 1.20$; *Attitudes*: $t(143) = 2.68$, $p < 0.01$, $d = 0.45$], which show that the special school teachers had lower principal component scores than their normal school counterparts. For *Concerns*, no significant difference was found [$t(143) = -0.08$, $p = 0.94$, $d = 0.01$].

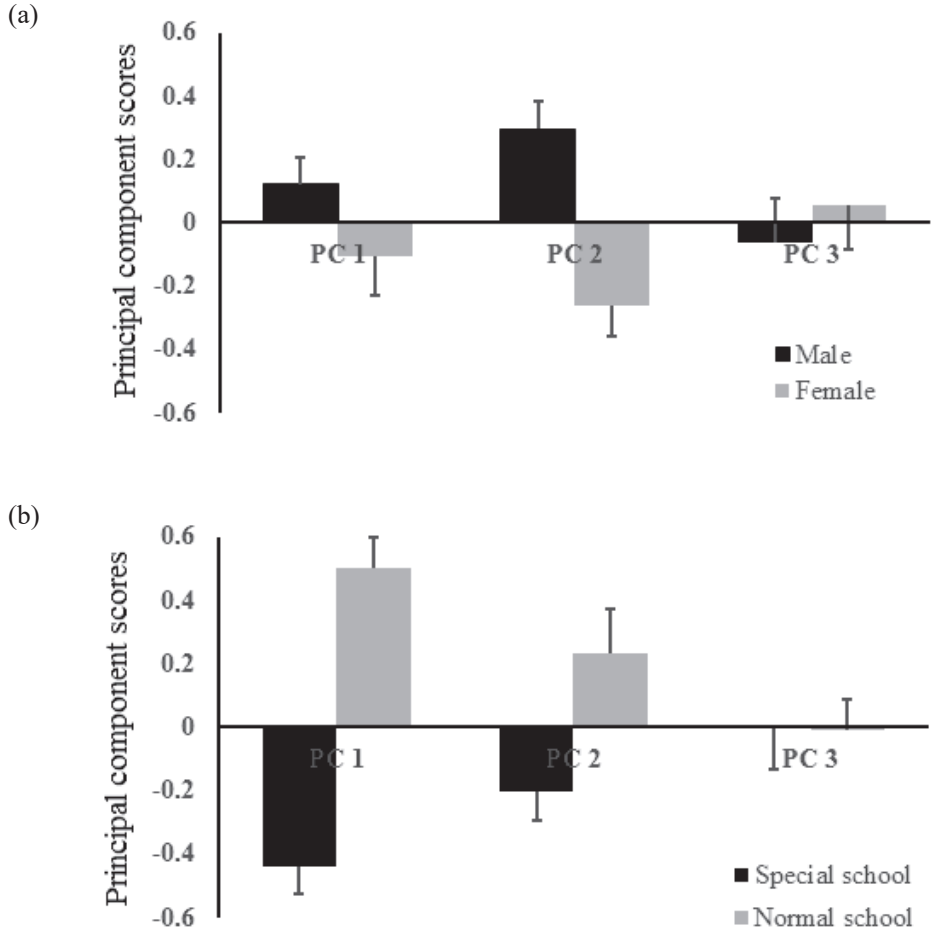

Figure 1. The results in sex differences for male (n = 68) and female (n = 77) teachers (a) and in school types for the special school (n = 77) and the normal school (n = 68) (b). Error bars denote the standard errors of means. PC means principal component.

Discussion

This study examined Japanese teachers' attitudes toward an inclusive education system using the questionnaire method. The participants were special school and normal school teachers. They responded to a Japanese version of SACIE-R, based on which we explored the principal components affecting attitude formation toward an inclusive education system and then compared sex differences and individual differences in school type for each principal component score.

Using principal component analysis, we extracted three principal components; *Sentiments*, *Attitudes*, and *Concerns*. The results nearly matched those in previous studies (Forlin et al., 2011; Takahashi et al., 2016). The α-value for *Concerns* was low ($\alpha = 0.59$). Forlin et al. (2011) also concluded a low α-value for *Concerns* ($\alpha = 0.65$); they noted that the value was nonetheless acceptable to measure this type of social constructs, with reference to DeVellis (1991). On the basis of these principal component scores, we examined sex differences and individual differences in school type for each principal component score.

In terms of sex differences, we found significant difference only for *Attitudes*; female teachers showed positive attitudes compared with male teachers. This finding corresponds with that in previous studies (Panek & Jungers, 2008; Takahashi & Haga, 2016). Panek and Jungers (2008) also found sex differences in their study on public attitudes toward people with disabilities using a semantic differential (SD) method. They showed that female participants positively rated the SD scale compared with male participants, especially for the "Worthless–Valuable" and "Weak–Strong" scales. Our *Attitudes* might relate to the attitude of teachers toward students with disabilities in a class setting, and the sex differences we found in this principal component should be considered in teacher assignment.

As for individual differences in the school type of teachers, we found significant differences in *Sentiments* and *Attitudes*. For *Sentiments*, teachers from special schools formed low sentiments compared with teachers from normal schools. For *Attitudes*, the special school teachers showed more positive attitudes compared with normal school teachers. Takahashi and Haga (2016) showed that correct and sufficient knowledge of disabilities enhanced understanding and influenced the formation of positive impressions. Thus, we speculated that special school teachers had sufficient knowledge and experience because they had regular contact with students with disabilities in school. In constructing an inclusive education system, our results indicate that teachers need to acquire strong grasp of disability.

The present study has several limitations. We used only one questionnaire (i.e., Japanese version SACIE-R) to examine teachers' attitude toward an inclusive education system. To examine precisely various viewpoints related to this system, other measures need to be considered. For example, teachers' experience in class, degree of understanding of disability, and content of the class affect attitude formation with respect to an inclusive education system. Moreover, future research should use a wider variety of disabilities as evaluation target to examine differences in attitude formation. Attitudes may vary when dealing with students

with visual and hearing impairments, communication disorders, and physical disabilities.

In conclusion, we extracted three principal components (*Sentiments*, *Attitudes*, and *Concerns*) using principal component analysis of the Japanese version of SACIE-R. Using the principal component scores, we revealed sex differences in *Attitudes*; female teachers formed positive attitudes toward students with disabilities. Further, we found individual differences in the school type of teachers in *Sentiments* and *Attitudes*; special school teachers had lower sentiments and more positive attitudes compared with normal school teachers. These individual differences might be attributed to the sufficient knowledge and experience of special school teachers. These results provide evidence that a deep understanding of disability may be needed to implement an inclusive education system in Japan.

Acknowledgements

This work was supported by a Japan Society for the Promotion of Science (JSPS) Grant-in-Aid for Scientific Research to M.T. (Grant No. 26590249).

References

DeVellis, R. F. (1991). *Scale development: Theory and applications*. Newbury Park, CA: Sage.

Forlin, C., Earle, C., Loreman, T., & Sharma, U. (2011). The sentiments, attitudes, and concerns about inclusive education revised (SACIE-R) scale for measuring pre-service teachers' perceptions about inclusion. *Exceptionality Education International*, *21*, 50–65.

Forlin, C., Kawai, N., & Higuchi, S. (2015). Educational reform in Japan towards inclusion: are we training teachers for success? *International Journal of Inclusive Education*, *19*, 314–331.

Loreman, T., Earle, C., Sharma, U., & Forlin, C. (2007). The development of an instrument for measuring pre-service teachers' sentiments, attitudes, and concerns about inclusive education. *International Journal of Special Education*, *22*, 150–159.

Meijer, C. J. W., & Foster, S. F. (1988). The effect of teacher self-efficacy on referral change. *Journal of Special Education*, *22*, 378–385.

Panek, P. E., & Jungers, M. K. (2008). Effects of age, gender, and causality on perceptions of persons with mental retardation. *Research in Developmental Disabilities*, *29*, 125–132.

Savolainen, H., Engelbrecht, P., Nel, M., & Malinen, O. (2012). Understanding teachers' attitudes and self-efficacy in inclusive education: implications for pre-service and in-service teacher education. *European Journal of Special Needs Education*, *27*, 51–68.

Soodak, L. C., Podell, D. M., & Lehman, L. R. (1998). Teacher, student, and school attributes as predictors of teachers' responses to inclusion. *The Journal of Special Education*, *31*, 480–497.

Takahashi, J., & Haga, A. (2016). Evaluation of impressions toward people with intellectual and developmental disabilities using the semantic differential method. *International Journal of Humanities and Social Science*, *6*, 257–262.

Takahashi, J., Igarashi, I., Kanno, A., & Tsurumaki, M. (2016). The Japanese version of sentiments, attitudes, and concerns about inclusive education, revised (SACIE-R) scale. *Bulletin of Center for Research and Development of Education*, *20*, 61–65.

United Nations (2006). *Convention on the Rights of Persons with Disabilities*. Manhattan, NY.

Weisel, A., & Dror, O. (2006). School climate, sense of efficacy and Israel teachers' attitudes toward inclusion of students with special needs. *Education, Citizenship and Social Justice*, *1*, 157–174.

Footnotes

[1] Forlin et al. (2011) conducted their principal component analysis with varimax rotation to extract principal components; the present study also conducted analysis in this manner.

[2] Results from Forlin et al. (2011) and ours varied in the items, including each principal component. Our results showed that items 14 and 10 belonged to *Sentiments*, whereas Forlin et al. (2011) showed that these items fell under *Concerns*. In addition, although item 2 was included in *Concerns* in our results, this item was included in *Sentiments* in Forlin et al. (2011). As Takahashi et al. (2016) confirmed the results of Forlin et al. (2011), the use of questionnaire in the present study is not problematic.

(Received November 16, 2016)
(Accepted November 17, 2016)