

Do Lions Quest (LQ) workshops have systematic impact on teachers' social and emotional learning (SEL)? Samples from nine different countries

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Abstract

Introduction: The global trend of new curricula in many OECD countries indicates that social interaction skills are becoming increasingly important. Educators need to start fostering the development of learners' social competences, which requires development of their own knowledge and skills. This study investigated the possible change in teachers' knowledge, their applied knowledge, and their sense of competence during the Lions Quest (LQ) workshops. For us to measure this, the participants responded to the LQ inquiry.

Method: We collected ten samples from 2120 participants in nine countries. Of all the participants, 1206 teachers attended the LQ teacher workshops (intervention group). Comparison data were collected from 914 teachers not participating in the LQ, and the mean sum scores from the multi-item measures were computed and used as variables in further analyses. We specified a multivariate mixed design, in which we examined the effect of the intervention with regard to mean change over time across groups in the variables. Sample-wise, we explored the within-group mean differences between pre- and post-test scores and evaluated the effect sizes for the intervention.

Results: The results indicated that the intervention had a positive effect on the participants across all samples apart from one, and that teachers benefitted from continuous training on social and emotional learning (SEL).

Discussion and Conclusion: The results of the present study indicate that even a relatively short-term, low-cost intervention in teachers' SEL is worthwhile. Successful SEL enables teachers and their students to face challenges more easily, inside and outside school, now and in the future.

Keywords: Lions Quest (LQ); social and emotional learning; teachers' professional development; intervention study

Resumen

Introducción: La tendencia mundial del currículo en muchos países de la OECD indica que las habilidades de interacción social son cada vez más importantes. Los educadores deben comenzar a fomentar el desarrollo de las competencias sociales de los alumnos, lo que requiere el desarrollo de sus propios conocimientos y habilidades. Este estudio investigó el posible cambio en el conocimiento de los maestros, su conocimiento aplicado y su sentido de competencia durante los talleres Lions Quest (LQ). Para medir esto, los participantes respondieron a la encuesta de LQ.

Método: Tomamos diez muestras de 2120 participantes en nueve países. De todos los participantes, 1206 maestros asistieron a los talleres de maestros de LQ (grupo de intervención). Los datos de comparación se recopilaron de 914 maestros que no participaron en el LQ, y se calcularon las puntuaciones de la suma de la media de las medidas de múltiples ítems y se utilizaron como variables en análisis adicionales. Especificamos el modelo mixto multivariado en el que examinamos el efecto de la intervención con respecto al cambio medio en el tiempo en los grupos de las variables. En cuanto a la muestra, exploramos las diferencias de medias dentro del grupo entre las puntuaciones previas y posteriores a la prueba y evaluamos los tamaños del efecto para la intervención.

Resultados: Los resultados indicaron que la intervención tuvo un efecto positivo en los participantes en todas las muestras, excepto en una, y que los maestros se beneficiaron de la capacitación continua en Aprendizaje Socio Emocional (SEL) en los talleres LQ.

Discusión y conclusión: Los resultados del presente estudio indican que incluso una intervención a corto plazo y de bajo costo en el SEL de los maestros vale la pena. Un SEL positivo permite a los maestros y sus estudiantes enfrentar más fácilmente los desafíos dentro y fuera de la escuela ahora y en el futuro.

Palabras clave: Lions Quest (LQ); aprendizaje socioemocional; desarrollo profesional docente; estudio de intervención

Introduction

In recent decades, communication and social interaction skills have become more and more important (Collie, Shapka, Perry, & Martin, 2015; Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011; Weissberg, Durlak, Domitrovich, & Gullotta, 2015). Collaborative teamwork and increasingly international encounters call for effective communication (European Parliament, 2015; World Economic Forum, 2015). Instructional designers and educators have had to start fostering the development of learners' social competences. This requires the development of their own knowledge and skills in creating opportunities for their students to practise social and emotional learning (SEL). It also supports the teachers' own positive efficacy beliefs and protects them from burnout (Collie, Shapka, & Perry, 2012; Collie, et al., 2015). Teaching and learning methods in which pupils collaboratively create and evaluate knowledge are also increasingly more typical (European Parliament, 2015; Fullan, 2014; McFarlane, 2015). In such shared learning situations, teachers need to help their students express themselves clearly, show understanding, and solve problems effectively. This supports students from different cultures and backgrounds in fostering their wellbeing, maintaining fruitful relationships, and working together in order to reach their learning goals (Beldarrain, 2006; Durlak et al., 2011). It is essential for SEL and maintaining a good atmosphere in the school community, and involving students, parent, and staff. The purpose of this study, hence, was to examine whether teachers' SEL can be advanced using a globally widespread programme.

Social and emotional learning as a tool to promote well-being and cognitive growth

Social interaction skills are methods and actions that can be taught, studied, and learned systematically (Aspegren, 1999; Brown & Bylund, 2008). The concept of social and emotional learning (SEL) provides a framework for investigating the development of skills in social interaction, collaboration, and decision-making. Through SEL, people develop their competences as well as the attitudes and values necessary to enable learning and working together successfully (Elias et al., 1997).

SEL is seen today as an important factor in fostering life skills, academic success (Durlak, et al., 2011), general health promotion, and overall well-being among young people (Greenberg, Domitrovich, Weissberg, & Durlak, 2017). At school, SEL mostly focuses on supporting a healthy learning environment, fostering positive growth, and preventing harmful actions among young people and children. The development of SEL is desirable among young

people and children, although social and emotional competence can also be developed throughout life, even among adults.

SEL can be approached as intrapersonal competence when improving our self-awareness, such as recognizing our feelings, needs, and goals – the components of our inner reality. Another aspect of intrapersonal competence is self-management, that is, learning how to help us manage and reach our goals. Being aware of SEL behaviour helps us regulate our emotions in various situations. The second capacity, interpersonal competence, gives us an insight into two other aspects of SEL: social awareness helps us demonstrate empathy and understanding, whereas relationship skills help us make friends and foster effective interaction. The third capacity, cognitive competence, promotes learning how to collaborate effectively in groups and teams, as well as making responsible decisions and ethical choices. Cognitive competence consists of respectful and democratic methods when acting and working together (<https://casel.org/core-competencies/>).

Fostering positive interactions between those participating in learning processes also increases success in learning (Durlak et al., 2011; Elias et al., 1997; Zins & Elias, 2006). Social interaction skills, such as listening skills and expressing oneself respectfully, promote interaction and collaboration. Recognizing and regulating emotions influence learners' perception, motivation, and attention, leading to more focused studying.

Teachers have an important role in their students' learning processes. Socially and emotionally competent teachers develop engaging and supportive relationships with students. In addition, utilizing students' strengths and abilities during lessons, setting guidelines for behaviour in ways that promote intrinsic motivation, and acting as a role model are teachers' key skills in creating a prosocial classroom (Jennings & Greenberg, 2009; Jones, Bouffard, & Weissbourd, 2013). Accordingly, teachers' own development of SEL enables them to create an engaging learning environment for their students.

Previous research demonstrated that teachers who participated in SEL workshops developed their social interaction skills, such as expressing their feelings in constructive ways. Their readiness to use skills such as active listening increased, non-desired ways of interacting decreased, and they started thinking about how to support their students' autonomy (Talvio, Lonka, Komulainen, Kuusela, & Lintunen, 2013; Talvio, Lonka, Komulainen, Kuusela, & Lintunen, 2015).

Indeed, SEL has become increasingly important in many schools worldwide. In Finland, for example, the national core curricula were recently reformed, now emphasizing more social interaction skills than before (Finnish National Board of Education, 2016; Lonka, 2018). In the United States, legislators recently introduced several bills to the House of Representatives to change the federal education policy to promote SEL (Civic Impulse, 2018a, 2018b, 2018c, 2018d). A similar trend can also be seen in many other countries, for example, in Australia, Canada, and Singapore (Humphrey, 2013). Yet, there are considerable differences across countries and local authorities in the availability of policies and curricula designed to evaluate and foster social and emotional skills (OECD, 2015). Accordingly, many countries lack of a systematic strategy for promoting SEL, including plans for the teachers' professional development of SEL and its implementation in classrooms.

This study explores, whether teachers' SEL can be advanced using a Lions Quest (LQ) workshop. Since this method is globally widespread, it is important to investigate whether it is truly beneficial in promoting teachers' SEL across different cultures and contexts.

Teacher training and SEL

Although SEL is considered an important content in schools worldwide, it is not always taught thoroughly in basic teacher training. For example, Schonert-Reichl, Hanson-Peterson, and Hymel (2015) studied how SEL is incorporated in the pre-service teacher education in the United States, finding that not a single state had standards that addressed all five core competences of SEL in their teacher training. Most states (71%) had standards that addressed between one and three of the five core SEL competencies of teacher domains.

Due to the lack of studies on SEL in initial teacher education, schools are offered continuous training in this area. One of the programmes widely used is the LQ programme. The present study investigated the effectiveness of the LQ workshops on teachers in ten samples collected from nine countries.

Lions Quest as a SEL programme for teachers' development

The LQ is now available in approximately 100 countries. More than half a million teachers implement the LQ in their classrooms (<http://www.lcif.org/EN/our-work/youth.php>). The LQ primarily aims to support positive youth development in school settings through health promotion, strengthening SEL, and emphasizing service learning. In addition to study-

ing SEL skills in the classroom, the LQ promotes the creation of a safe learning environment, encourages the maintenance of solid connections to pupils' families and networks beyond school, and encourages the entire school community to learn to serve others. To maintain the quality of the LQ, teachers' LQ workshops provide the tools necessary for applying the LQ to work settings. The length of the teachers' workshops varies from one to three days.

The LQ has already been evaluated by some European research groups. Gol-Guven (2017) reported positive effects on school climate, student behaviours, and conflict resolution strategies in Turkish primary schools. It also appeared that the implementation context is important, too: teachers need training, but also specific guidance and on-going support in how to integrate SEL into their daily school routine (Gol-Guven, 2017). An Austrian longitudinal study found positive effects on class climate as well as reduced bullying and fighting among the LQ students when compared to the control group. The magnitude of positive effects was affected by the implementation level of the LQ. Therefore, the delivered quality of implementation is an important issue when implementing SEL. Well-trained, experienced LQ teachers are crucial for promoting SEL in schools (Matschek-Jauk, Krammer & Reicher, 2018).

Our research group focused on the international evaluation of teachers' LQ workshops. The first step was to compare the perceptions of the implementers' goals in 15 countries. A comparison of the qualitative content analysis of 22 LQ trainers and country coordinators with the original goals of the LQ programme showed that the perceived goals were almost the same as the programmes' manual (Talvio & Lonka, 2013). The second phase served to develop and test a training evaluation model: altogether 260 Finnish teachers participated in a quasi-experimental study with pre- and post-measurements. The results indicated that teachers rated the LQ goals as more important and relevant after the LQ workshops. Furthermore, they felt more competent and skilled in delivering SEL contents than the comparison group (Talvio, Berg, Ketonen, Komulainen & Lonka, 2015).

The intention of the present study was to investigate the development of teachers' SEL during an LQ teacher workshop using ten samples collected from nine OECD countries. There obviously is cultural and contextual variation among those countries, but our aim was to look at similarities.

Assessment of teachers' SEL

For both designing our measuring instrument and evaluating the effectiveness of teachers' SEL, Kirkpatrick and Kirkpatrick's model (2006) was partly utilised. They suggested that it is important to look at various aspects of the outcomes of the intervention, including participants' knowledge and application of this knowledge. Teachers need to have 'knowing that'— which is based on learned facts and is easily expressed. Therefore, a knowledge test was used to investigate this aspect, as it cannot be measured objectively using only self-assessment methods.

During the development of expertise, knowledge should transform into the application of knowledge 'knowing how'. To measure this, we tested teachers' reactions in typical work situations by asking them to evaluate the appropriateness of the given alternatives for responding in each scenario. This method resembles the Dealing with Challenging Interaction instrument developed earlier for measuring change in teachers' social interaction skills during their SEL workshop (see, Talvio, Lonka, Komulainen, Kuusela, & Lintunen, 2012).

Additionally, not only knowledge and knowledge application are relevant in evaluating training programmes, but also motivation has an important role to play (e.g., Deci, Koestner, & Ryan, 2001; Deci & Ryan, 2008; Ryan & Deci, 2000). Deci and Moller (2005) acknowledged that the promotion of perceived competence brings coherence and direction to individuals' activities and work, leading them to improved intrinsic motivation. Similarly, if teachers' sense of competence improves during the LQ workshop, it is likely that they feel teaching the LQ to their students as more motivating, interesting, and clear. It is important to look at their intrinsic motivation, because it is impossible, after all, to predict whether teachers really will offer LQ in their classrooms. However, intrinsic motivation as a key factor in our actions may reveal the teachers' readiness to implement LQ to their students.

Research questions

Our current study investigated teachers' potential learning through their participation in an LQ workshop across ten samples from nine countries. Teachers' sense of competence, knowledge, and their knowledge application related to LQ goals were examined. Accordingly, we addressed the following research questions:

- Are there systematic similarities in ten independent samples collected from nine countries in terms of teachers' development in their
 - Sense of competence
 - Knowledge
 - Knowledge application?

- Do the results of the intervention and comparison groups differ in systematic ways across samples?

We assumed that during training, sense of competence would increase (hypothesis 1), knowledge would increase (hypothesis 2), and knowledge application would increase (hypothesis 3) among the teachers participating in LQ. We also expected the intervention groups to score better than the comparison groups (hypothesis 4).

Method

Participants

We collected data from 2120 participants in Argentina, Australia, Austria, Finland, Germany, Italy, Lithuania, Turkey, and two areas of Japan. Of all the participants, 1206 teachers attended the LQ teacher workshops (intervention group), and we also collected comparison data from 914 teachers not participating in an LQ teacher workshop. Appendix A presents the number of participants in each country, their gender, earlier experience from the course, position, and work experience in years. Teachers were requested to participate in this study by local coordinators, who were instructed to invite teachers from ordinary comprehensive schools (i.e., not from private schools) to participate in this study. The intention was to collect intervention and comparison groups who could be compared with each other, and who would represent typical teachers in the area.

Instruments

The LQ test consisted of 33 statements that the participants evaluated on a seven-point Likert scale with response options ranging from 'not at all important' (1) to 'very important' (7) or 'totally disagree' (1) to 'totally agree' (7). All participants responded to our LQ test, and it was translated into the participants' mother tongue. Back-translation was used to maintain high quality of the translation. A translator blind to the original version was asked to translate the content back into the original language. The back-translation was then com-

pared with the original questionnaires, and any differences were explored; when needed, questions were rewritten (Sperber, 2004). Further, local LQ experts checked that the translation was relevant for assessing the learning of the LQ in local circumstances.

The LQ test collected data from three aspects; first, with a scale tapping the participants' *sense of competence*, second, with a knowledge test aiming at assessing the participants' *knowledge* regarding LQ, and third, with a *knowledge application* test exploring participants' ability to adapt the skills studied.

More precisely, *sense of competence* was measured using eight items (for scale validation. see, Talvio, Berg, Litmanen, & Lonka, 2016), tapping the participants' sense of competence in implementing the goals of LQ (e.g., '*I am very skilled at supporting my students' self-esteem and self-confidence.*'). The scale showed good internal consistency across all measures (see Appendix B).

Knowledge was assessed using four questions, each having four alternative statements as answers to be evaluated. For example, one of the questions concerned teachers' knowledge of the group process: '*What is important to do at the beginning of a group process?*' Participants were asked to rate the four given statements. (Statement a to be evaluated: '*To acquaint members of the group with each other.*' Statement b to be evaluated: '*Using activities for trust building.*' Statement c to be evaluated: '*Giving room for free mingling without setting clear performance expectations.*' Statement d to be evaluated: '*Monitoring the group and individuals without disturbing the process and allowing the group to define its own dynamic.*') The knowledge questions tested the knowledge of the core content of the LQ teacher workshops.

Knowledge application, in turn, tapped scenarios typical in teachers' work, using two scenarios, each with four alternative statements as answers to be evaluated. For example, one scenario was about a timid child: '*Your group has a student who is very shy. How would you handle him/her?*' The participants were asked to rate the given statements, by indicating the extent to which they agreed with proceeding in a certain way. (Statement a to be evaluated: '*The only thing I would do is inform the parents.*' Statement b to be evaluated: '*Nothing. A student has right to be alone if he/she wants to.*' Statement c to be evaluated: '*I would assign the pupil a group role that would encourage his/her participation without overly exposing them.*' Statement d to be evaluated: '*I would make the use of exercises as part of the lesson, in*

order to encourage pupils to engage with each other.'). Knowledge application scenarios different from the examples used in the workshops assessed the central skills studied in the LQ.

The alternative statements and tasks assessing the level of knowledge and knowledge application on SEL were constructed based on qualitative analysis of the open-ended answers to the same questions gained from the Finnish sample (Berg, Talvio, & Lonka, 2015). Our intention was to offer alternatives that were typical and common for teachers.

Procedure

The content of each workshop was roughly equivalent and based on the goals of the LQ programmes. The workshops were conducted by certified LQ trainers using the official LQ course design. The training workshops were held outside school premises during teachers' normal working hours. We emailed a pre-test questionnaire to participants about a week before the intervention, and asked them to give the filled questionnaire to the trainer at the workshop. Post-data were collected directly after the workshop. To differentiate pre-test effect from the intervention effect, we used a comparison group, who also completed the questionnaire twice, at approximately the same time as the intervention group. Teachers who did not participate in the LQ teacher workshop were selected from schools in which no one took part in the LQ training during the time measurements. They also completed the questionnaire twice, at approximately the same time as the intervention group.

Data Analysis

In the analysis of the questions on knowledge and knowledge application, we scored the answers so that a response on the midpoint of the scale (4) was 0, agreeing (i.e., responses 5-7) was scored positively from 1 to 3, and, in turn, disagreeing (i.e., responses 1-3) negatively from -1 to -3. The negative items, in which disagreement was the correct answer, were reverse-scored. Thus, stronger agreement in the correct direction yielded a higher score. The present study did not measure knowledge and knowledge application of the participants from Sample 10, because the scale used here was derived from their open-ended answers. The results of their qualitative change can be found elsewhere (Berg, Talvio, & Lonka, 2015).

The analysis strategy consisted of three steps. First, we screened the data for missing values and outliers. Second, we examined the differences between the intervention and comparison groups in sample characteristics, such as gender, previous participation in a similar

course, teacher position (class teacher, subject teacher, special teacher, other), and teaching experience in years. We examined the differences using cross-tabulations, in which the adjusted standardized residuals were used to draw inferences of over- and underrepresentation, and a t-test was used to test differences in average teaching experience between the groups.

Next, we computed the mean sum scores from the multi-item measures, and used these as variables in further analyses. We specified multivariate mixed-design General Linear Models (i.e., mixed MANOVA, see, e.g., Tabachnick, Fidell, & Osterlind, 2001), in which we tested for the time*group interaction effect to examine the effect of the intervention with regard to mean change over time across groups in the variables. The analyses were conducted separately for each sample.

Finally, sample-wise, we examined the within-group mean differences between the pre- to post-test scores, and evaluated the effect sizes (Gibbons, Hedeker & Davis, 1993) of the intervention. To adjust for possible flaws and inconsistencies in study design, as well as to reduce the possibility of type I errors, we applied a more conservative approach in evaluating statistical significance, as p values near the traditional threshold offer only weak evidence against the null hypothesis (Benjamin et al., 2018; Wasserstein & Lazar, 2016).

Ethical considerations

The participants were informed of the measures taken to protect their privacy, and the anonymity of their information and responses was guaranteed. They were also informed of their right to withdraw their responses from the study at any time without warning or explanation. None of the participants asked for their answers to be removed from the data. Since each country had only a few trainers of teachers' LQ workshops per country, it was essential that the countries were anonymized to avoid identification of the trainers. In the result section, we therefore shall not name the countries.

Results

Analysis of Background Variables

We found 0.8 to 6.6% of the data to be missing in the samples (Appendix A). The amount of missing values was either less than 5% or missing completely at random (MCAR), except in Sample 10, which had 5.2% of values missing non-completely at random. In further

analyses, the missing data was handled via pairwise deletion, as the amount and/or the distribution of the missing values were considered negligible (Little & Rubin, 2014). We detected no outliers.

Gender was distributed evenly across the intervention and comparison groups, except in Sample 10, in which participants who identified as males were slightly overrepresented in the comparison group.

Earlier course experience was distributed evenly across the intervention and comparison groups, with the exceptions of Samples 2 and 9. In the intervention group in Sample 2, there was a clear overrepresentation of participants who had previously attended a similar course compared with the comparison group. In Sample 9, participants who had not participated in a similar course were slightly overrepresented in the comparison group.

Teaching positions were distributed evenly across the intervention and comparison groups, with the exceptions of an overrepresentation of class-teachers in the intervention group in Sample 5, and an overrepresentation of non-teaching participants in the intervention group in Sample 4. Further investigations, however, revealed that these participants were full-time teachers with additional tasks at school. This led them to answer 'other' instead of 'class teacher' or 'subject teacher'.

In terms of teaching experience in years, in Samples 1, 6, 7, 9, and 10, the comparison group had a higher average than their intervention groups. Appendix B presents the observed means, standard deviations, internal consistencies, paired samples t-test, and effect sizes.

Intervention Effect (mixed MANOVA)

Table 1 presents all results from the mixed MANOVAs. The multivariate tests (Hotelling's Trace) revealed that the intervention effect was significant ($p < .005$) in all countries except Sample 3, where it was marginally significant ($p = .021$) and in Sample 2, where it was non-significant. Thus, we did not consider the univariate tests for Sample 2.

Table 1. *Multivariate and univariate test statistics for the general linear model*

Sample	Multivariate test: Time*Group					Univariate tests: Time*Group					
	Hotelling's Trace	F	df	p	Partial eta ²	Variable	df	F	p	Partial eta ²	
1	.433	27.539	3,	191	.000	.30	Competence	1	64.697	.000	.251
							Knowledge	1	14.615	.000	.070
							Application	1	19.972	.000	.094
2	.033	2.092	3,	193	.103	.03	Competence	1	1.423	.234	.007
							Knowledge	1	.854	.356	.004
							Application	1	3.780	.053	.019
3	.051	3.309	3,	196	.021	.05	Competence	1	4.886	.028	.024
							Knowledge	1	2.833	.094	.014
							Application	1	2.931	.088	.015
4	.174	15.642	3,	270	.000	.15	Competence	1	39.773	.000	.128
							Knowledge	1	3.791	.053	.014
							Application	1	8.773	.003	.031
5	.281	16.280	3,	174	.000	.222	Competence	1	38.857	.000	.181
							Knowledge	1	21.252	.000	.108
							Application	1	22.012	.000	.111
6	.283	28.339	3,	300	.000	.22	Competence	1	40.388	.000	.118
							Knowledge	1	13.252	.000	.042
							Application	1	34.835	.000	.103
7	.269	17.649	3,	197	.000	.21	Competence	1	8.093	.005	.039
							Knowledge	1	3.309	.070	.016
							Application	1	41.210	.000	.172
8	.849	9.906	3,	35	.000	.46	Competence	1	11.947	.001	.244
							Knowledge	1	5.346	.026	.126
							Application	1	2.384	.131	.061
9	.118	9.457	3,	241	.000	.111	Competence	1	13.598	.000	.053
							Knowledge	1	11.794	.001	.046
							Application	1	6.871	.009	.027
10*	-	-	-	-	-	-	-	-	-	-	

* Univariate test only

The univariate tests showed support ($p < .005$) of an intervention effect in increasing sense of competence in all countries except in Sample 3, where we found only weak support ($p < .05$) (hypothesis 1). Figure 1 illustrates a summary of the mean changes in sense of competence across time and groups in all countries. For development of knowledge, the univariate tests showed support for the hypothesis in Samples 1, 5, 6, and 9 (hypothesis 2). We found weak or marginal support in Samples 4 and 8, and no support in Samples 3 and 7. Figure 2 illustrates a summary of the mean changes in knowledge across time and group in all countries. For the development of knowledge application, the univariate tests showed support in all countries except in Sample 9, where we found weak support; and in Samples 3 and 8,

where we found no statistical support (hypothesis 3). Figure 3 provides a summary of the mean changes in knowledge application across time and group in all countries.

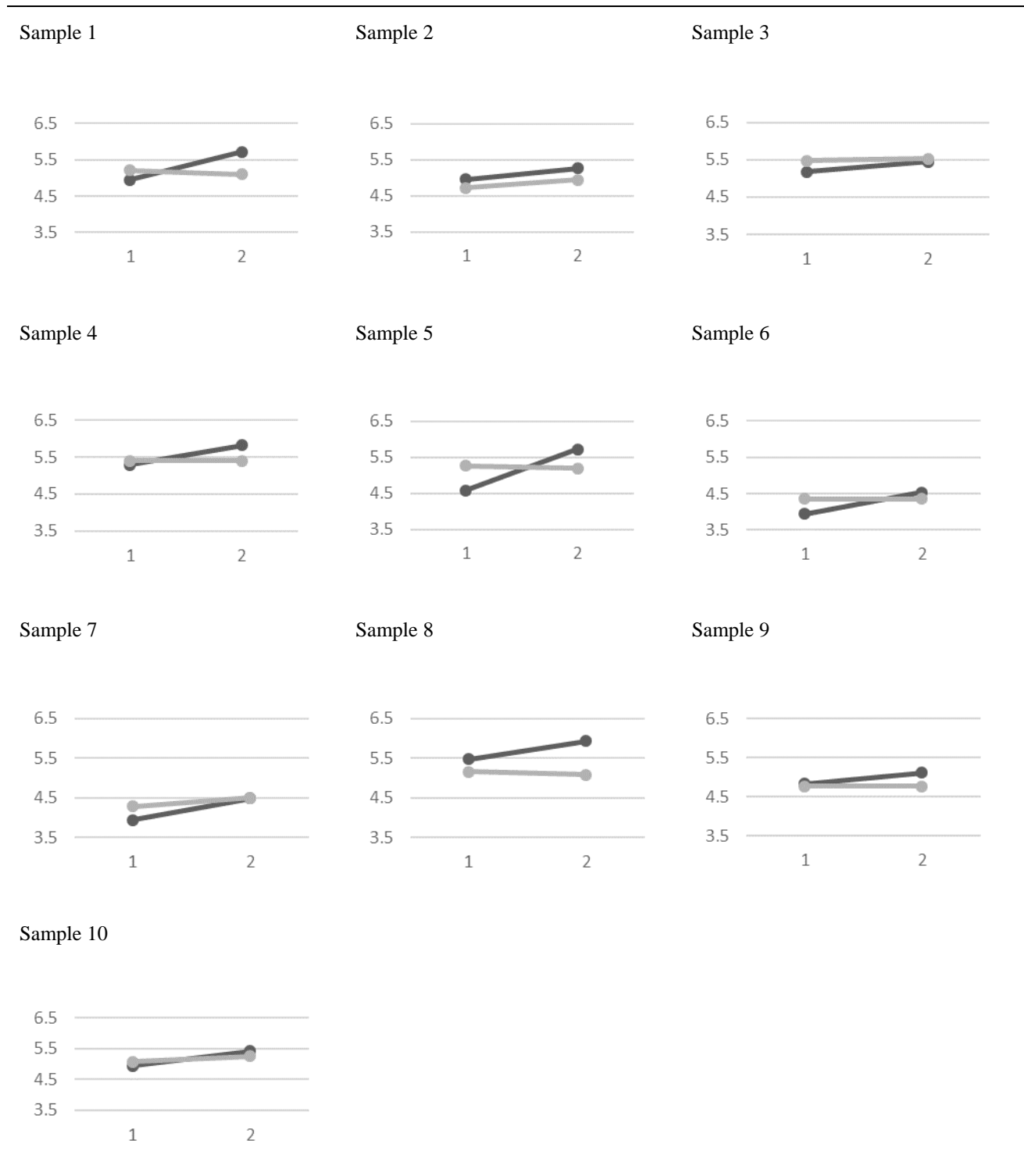


Figure 1. Summary of time*group mean change figures for sense of competence. Note: Black = Intervention group, Grey = Comparison group.

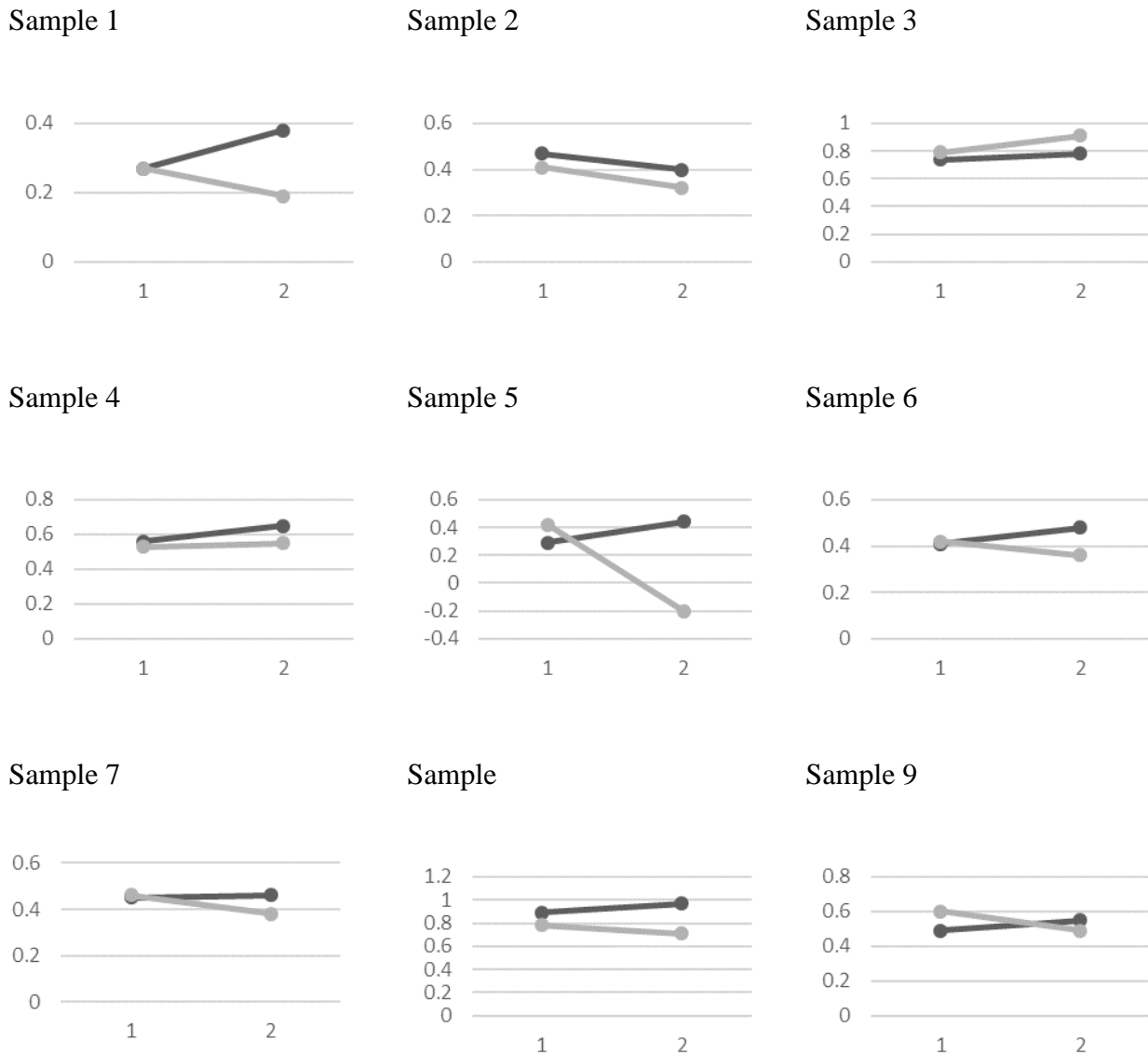
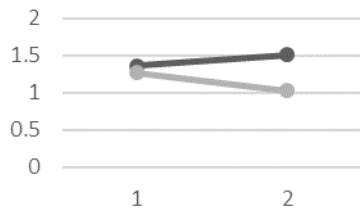
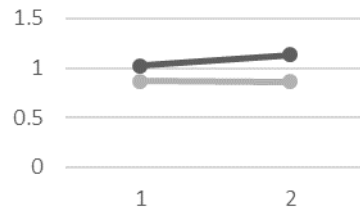


Figure 2. Summary of time*group mean change figures for knowledge. Note: Black = Intervention group, Grey = Comparison group.

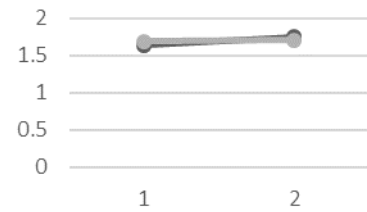
Sample 1



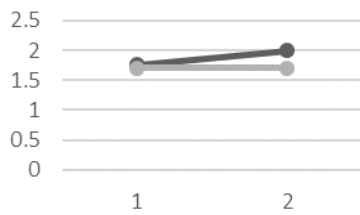
Sample 2



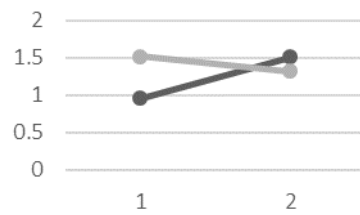
Sample 3



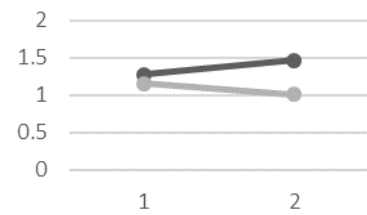
Sample 4



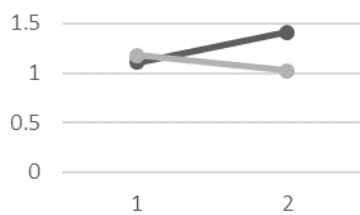
Sample 5



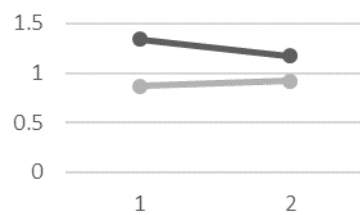
Sample 6



Sample 7



Sample 8



Sample 9

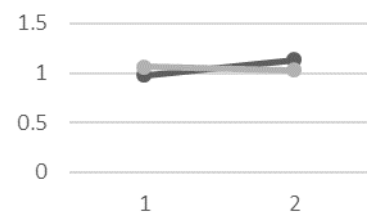


Figure 3. Summary of time*group mean change figures for knowledge application. Note: Black = Intervention group, Grey = Comparison group.

Effect Size

In the samples in which we found support for the intervention effect, effect sizes for development of sense of competence (see Figure 1) ranged from .5 to .97 ($M = .69, SD = .16$); for development of knowledge (see Figure 2) from .1 to .38 ($M = .23, SD = .11$); and for development of knowledge application (see Figure 3) from .19 to .57 ($M = .34, SD = .14$). As can be inferred from Figure 4, effect sizes in both sense of competence and knowledge application appeared rather consistently positive in the intervention groups across most countries, indicating that these developed during the workshops. Additionally, although the effect sizes for knowledge were weaker, they regardless showed positive development among participants in LQ compared with those who did not attend LQ (hypothesis 4).

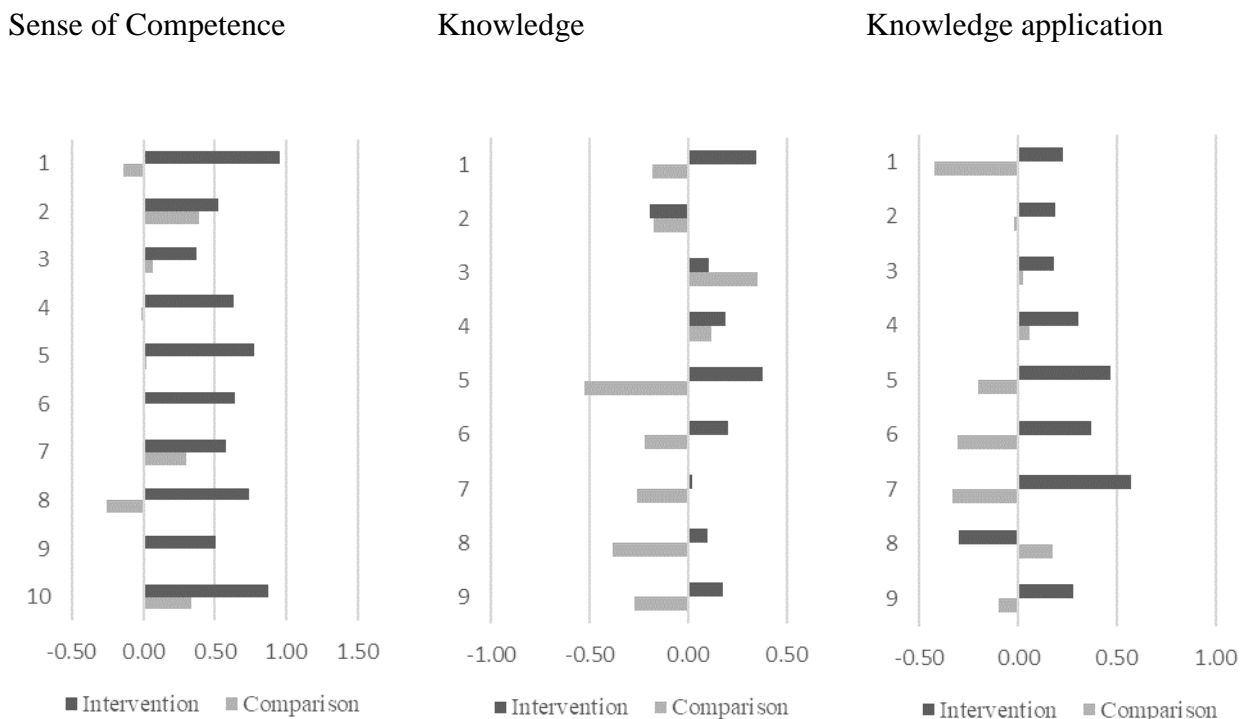


Figure 4. Summary of Cohen's *d* effect sizes for mean change over time for sense of competence, knowledge, and knowledge application in nine countries.

Figure 4 shows it was typical for the development of measured variables to be non-significant or negative among the comparison groups, indicating that the pre-test effect was mostly either trivial or even negative. However, we found small positive effect sizes ($< .2$) for

sense of competence in Samples 7 and 10. In addition, the comparison group in Sample 3 scored a small positive effect size in knowledge.

Discussion and conclusion

The majority of research has focused on students' benefits of SEL, whereas our study investigates the occupational group that implements SEL in their classes, that is, the teachers (Oberle, Domitrovich, Meyers & Weissberg, 2016). Although professional teachers know how to teach and how to support their students' development, there might be a lack of confidence in the "knowing what" and "knowing how" of teaching social-emotional skills (Main, 2018).

To sum up our main findings, the intervention had an identifiable effect on every sample except for one. A closer analysis revealed that of the variables measured, the effect was greatest on sense of competence. The development of knowledge decreased in only one sample, and knowledge application in one other sample. Otherwise, all changes were positive.

The positive development of teachers' knowledge application was especially important. Even though professionally educated teachers are likely to have some previous knowledge of SEL, they might have problems implementing it (Wood, 2017). Since it is not a typical subject that can be studied and delivered from books, teachers feel they need something more, such as examples, tools, and reflective discussions on how to promote SEL in the classroom. Barry, Clarke & Dowling (2017, p. 437) argue that there "*is a science-to-practice gap in the translation of evidence-based interventions into mainstream educational practice*". This explanation is supported by Guskey (2002), who states that teachers tend to be pragmatic and want to learn specific, concrete, and practical ideas that directly relate to their work in the classroom. Indeed, in the LQ teachers' workshop, much time is given to sharing and practising how to integrate the content of SEL into everyday school life. This practically-oriented approach complies with the recommendations for the implementation of SEL programs (Taylor, Oberle, Durlak & Weissberg, 2017). This might partly explain why LQ is so popular among teachers worldwide.

There is another reason why the positive development of knowledge and knowledge application evaluated here are important for teacher learning. In this study, the particular answers given by the participants were not self-reports. Instead, these factors evaluated the real

change in teachers' knowledge needed in the classroom. Together with analysing the shift on teachers' sense of competence in conducting LQ, we could investigate quite rigorously the benefits of the LQ for teachers' thinking. Instead of collecting mere reactions from the participants utilizing the model of Kirkpatrick & Kirkpatrick (2006), the development of the teachers' thinking could be explored from various aspects.

Programmes cannot be implemented uniformly in different countries. An appropriate balance between programme fidelity and adaptation considerations must always be taken into account (Guskey, 2002). In this study, many variables related to local circumstances such as the effect of different school cultures and school policies remained unknown, making it difficult to compare countries with each other. However, our intention was not to compare countries, but instead to see what was shared. We therefore felt it was important to collect empirical data from the individual countries, in order to understand better the local situation and cross-cultural realities. This improved understanding can contribute to establishing an enhanced capacity for LQ programme developers and LQ supervisors. Similar to the conclusions of an implementation study of a Youth Violence Prevention Program (YVPC), it is important to share experiences as well as evidence-based findings within the LQ community (Matjasko, Massetti & Bacon, 2016).

In the comparison groups, in all samples except one, there was at least a small negative effect in one of the variables. It is possible that the participants remembered how they answered before and chose another option, without understanding whether the new answer was better. At least we can say that the pre-test did not improve their knowledge of SEL, but more likely decreased it.

Our next goal is to explore the benefits of teachers' SEL workshops for students. Before this, we needed to investigate the benefits for teachers. Studying only students' outcomes does not necessarily explain the quality of teachers' workshops. For example, it is possible that teachers are unable to conduct SEL in their classrooms due to administrative decisions or a lack of knowledge in how it should be implemented in the curriculum (see Gol-Guven, 2016). Furthermore, the commitment of the school management and the structural conditions at the respective schools also have an impact on the quality of implementation (Matischek-Jauk & Reicher, 2019). Teachers' beliefs do not affect their individual agency only; collective development should be considered (Biesta, Priestley and Robinson, 2015). Thus, change in teachers' knowledge or sense of competence does not automatically produce better perfor-

mance among students. This calls for administrative decisions and common commitment to develop the school culture (Humphrey, 2013). In Finland, SEL is now part of the new national curriculum (Lonka, 2018). Such changes may show in future studies.

Although we used comparison groups, we had no randomized controlled experimental setting. To counter this, we adopted a more conservative approach to evaluating statistical significance. Nevertheless, the study design still contained issues that may have caused bias and false positives or negatives. For example, we were unable to ensure that the course design was identical in all countries, nor did we use matched pairs.

There is a trade-off between ecological validity and academic rigour. The present study was a typical field study that tried to capture the teachers' authentic working environment (Gegenfurtner, Veermans, Festner, & Gruber, 2009). Many factors may affect teachers' learning, for example, national culture, the local culture of the school, or personal values. Yet, in a relatively large sample of participants, the effects of minor background variance tend to disappear, which makes the significant trends more visible. The method used produced rather rigorous results with satisfactory effect sizes, which were ecologically valid yet generalizable.

Educational implications

We showed that teachers benefitted from SEL training. The positive change in most of the intervention groups and the unchanged or negative development in the majority of the comparison groups during the LQ indicated that the teachers with no intervention did not produce better solutions for challenging situations, despite having a second chance to answer. SEL training is therefore needed, which is also supported by other research (e.g. Humphrey, Lendrum & Wigelsworth, 2013; Reeves & Mare, 2017). For teachers who are already competent, follow-up SEL training might not necessarily provide any new information, but their knowledge application may strengthen through learning fresh ideas and having opportunities to share with other teachers. Repeating LQ training might reflect teachers' need to test and practice the studied content in their classroom after their first training, in order to change their beliefs of the effectiveness of SEL (Guskey, 2002).

The results of the present study indicate that even a relatively short-term, low-cost intervention in teachers' SEL is worthwhile. Successful SEL enables teachers and their students to face challenges inside and outside school more easily, both now and in the future.

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Appendix A. Sample characteristics of the Intervention and Comparison groups

Country		n	Gender*		Earlier course*		Position*				Experience						
			Male (std. res.)	Female (std. res.)	No (std. res.)	Yes (std. res.)	Class	Subject	Special	Dual	Other	M	SD	t	df	p	
	Total	202															
1	Intervention	101	8	93	97	3	13	19	10	23	25	17.11	12.42	-2.61	170	.010	
	Comparison	101	3	98	98	1	5	39	5	35	14	21.85	11.36				
	Total	204															
2	Intervention	108	16	91	7 -	95 +	20	59	4	18	7	13.45	12.17	.68	191	.499	
	Comparison	96	25	71	79 +	10 -	24	50	4	11	3	12.28	11.76				
	Total	202															
3	Intervention	104	7	97	87	12	44	29	18	1	8	19.65	10.90	.34	183	.732	
	Comparison	98	8	88	86	5	32	44	13	1	6	19.10	10.64				
	Total	284															
4	Intervention	177	15	118	160	9	73	30	7	3	48 +	12.42	8.61	.14	255	.887	
	Comparison	107	22	76	101	1	35	51	3	2	5 -	12.26	8.42				
	Total	199															
5	Intervention	94	24	70	89	0	30 +	46	1	1	15	15.25	9.17	-.72	127	.471	
	Comparison	105	44	61	91	3	11 -	77	0	0	6	16.40	8.91				
	Total	304															
6	Intervention	157	72	79	127	3	84	32	10	8	23	12.04	10.88	-4.28	276	.000	
	Control	147	62	84	99	8	81	36	10	5	14	17.71	11.21				
	Total	202															
7	Intervention	110	53	54	86	16	53	29	7	6	13	11.72	11.79	-3.98	189	.000	
	Comparison	92	38	53	65	18	53	16	5	0	18	18.31	10.89				
	Total	40															
8	Intervention	20	4	15	16	3	8	3	2	0	6	16.21	10.91	.60	36	.553	
	Comparison	20	4	12	19	1	8	2	2	0	7	14.32	8.45				
	Total	251															
9	Intervention	169	41	128	11 -	154	53	40	0	50	15	8.63	6.8	-4.40	108.44	.000	
	Comparison	82	26	55	25 +	54	24	28	1	11	11	14.66	11.41				
	Total	232															
10	Intervention	166	17	149	-	-	74	27	33	0	32	9.80	7.93	-3.94	96.80	.000	
	Comparison	66	15 +	51	-	-	20	27	8	0	11	15.55	10.66				

*statistically significant over-/ under-representations with a cut-off of +-1.96 bolded.

Appendix B. Observed means, standard deviations, internal consistencies and paired samples t-test with Cohen's d

Sample		Intervention										Comparison									
		T1			T2			t	df	p	d*	T1			T2			t	df	p	d*
M	SD	α	M	SD	α	M	SD					α	M	SD	α						
1	Competence	4.94	1.00	.92	5.72	0.72	.90	-9.565	99	.000	0.96	5.20	1.02	.93	5.10	1.06	.95	1.334	94	.186	-0.14
	Knowledge	0.27	0.28	-	0.38	0.33	-	-3.452	100	.001	0.34	0.27	0.36	-	0.19	0.45	-	1.839	100	.069	-0.18
	Application	1.36	0.63	-	1.51	0.55	-	-2.300	100	.024	0.23	1.27	0.64	-	1.03	0.65	-	4.258	99	.000	-0.43
2	Competence	4.96	0.74	.84	5.27	0.74	.90	-5.376	105	.000	0.52	4.72	0.90	.88	4.94	0.93	.89	-3.679	90	.000	0.39
	Knowledge	0.47	0.36	-	0.40	0.32	-	2.005	107	.047	-0.19	0.41	0.36	-	0.32	0.53	-	1.709	94	.091	-0.18
	Application	1.02	0.64	-	1.13	0.59	-	-1.969	107	.052	0.19	0.87	0.80	-	0.86	0.84	-	.199	91	.842	-0.02
3	Competence	5.17	0.84	.90	5.45	0.77	.93	-3.786	102	.000	0.37	5.47	0.75	.88	5.52	0.67	.87	-.685	96	.495	0.07
	Knowledge	0.74	0.42	-	0.78	0.52	-	-1.071	103	.287	0.11	0.79	0.49	-	0.91	0.50	-	-3.482	97	.001	0.35
	Application	1.64	0.60	-	1.75	0.50	-	-1.850	103	.067	0.18	1.69	0.75	-	1.71	0.63	-	-.280	97	.780	0.03
4	Competence	5.29	0.99	.93	5.82	0.77	.94	-8.231	170	.000	0.63	5.40	1.04	.93	5.40	1.04	.93	.180	103	.857	-0.02
	Knowledge	0.56	0.45	-	0.65	0.46	-	-2.551	176	.012	0.19	0.53	0.43	-	0.55	0.39	-	-1.215	105	.227	0.12
	Application	1.76	0.72	-	2.00	0.61	-	-4.055	176	.000	0.30	1.71	0.66	-	1.71	0.65	-	-.605	106	.546	0.06
5	Competence	4.58	1.61	.96	5.73	0.97	.92	-7.554	93	.000	0.78	5.26	1.04	.89	5.19	1.15	.93	-.223	83	.824	0.02
	Knowledge	0.29	0.38	-	0.44	0.36	-	-3.687	93	.000	0.38	0.42	0.39	-	-0.20	1.13	-	5.399	104	.000	-0.53
	Application	0.96	0.96	-	1.51	0.80	-	-4.546	93	.000	0.47	1.52	0.80	-	1.32	0.76	-	1.883	83	.063	-0.21
6	Competence	3.94	1.15	.95	4.54	1.12	.96	-8.049	156	.000	0.64	4.35	1.10	.96	4.35	1.03	.96	.036	146	.972	0.00
	Knowledge	0.41	0.31	-	0.48	0.35	-	-2.518	156	.013	0.20	0.42	0.29	-	0.36	0.34	-	2.640	146	.009	-0.22
	Application	1.28	0.60	-	1.47	0.56	-	-4.601	156	.000	0.37	1.16	0.63	-	1.01	0.59	-	3.750	146	.000	-0.31
7	Competence	3.94	1.22	.94	4.48	1.22	.97	-6.072	108	.000	0.58	4.28	0.92	.94	4.49	1.00	.95	-2.849	91	.005	0.30
	Knowledge	0.45	0.31	-	0.46	0.33	-	-.196	109	.845	0.02	0.46	0.32	-	0.38	0.29	-	2.525	91	.013	-0.26
	Application	1.11	0.55	-	1.41	0.60	-	-6.018	109	.000	0.57	1.18	0.63	-	1.02	0.58	-	3.189	91	.002	-0.33
8	Competence	5.47	0.67	.82	5.93	0.57	.88	-3.225	18	.005	0.74	5.16	1.62	.97	5.08	1.60	.97	1.153	19	.263	-0.26
	Knowledge	0.89	0.52	-	0.97	0.79	-	-.451	19	.657	0.10	0.78	0.64	-	0.71	0.59	-	1.717	19	.102	-0.38
	Application	1.34	0.55	-	1.17	0.49	-	1.306	18	.208	-0.30	0.87	0.53	-	0.92	0.54	-	-.793	19	.438	0.18
9	Competence	4.84	0.70	.82	5.12	0.70	.87	-6.495	166	.000	0.50	4.78	0.69	.80	4.78	0.73	.87	-.080	78	.937	0.01
	Knowledge	0.49	0.32	-	0.55	0.39	-	-2.290	168	.023	0.18	0.60	0.37	-	0.49	0.46	-	2.481	80	.015	-0.28
	Application	0.98	0.64	-	1.13	0.64	-	-3.596	167	.000	0.28	1.06	0.65	-	1.03	0.76	-	.859	78	.393	-0.10
10	Competence	4.94	0.74	.88	5.42	0.73	.90	-10.765	151	.000	0.87	5.08	0.71	.85	5.26	0.76	.92	-2.616	59	.011	0.34
	Knowledge	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Application	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*R-package effsize: <https://cran.r-project.org/web/packages/effsize/effsize.pdf>; paired d calculated as suggested by Gibbons, Hedeker, & Davis(1993).

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