Transformative Peace Education in Schools – Piloting the Effects on Adolescents in terms of Well-Being, Empathy and Aggression

Introduction

This paper describes the testing of methods for transformative peace education that were taught to, and tested on, students in 7th and 9th grade. These methods are a central part of, but not restricted to, the UN supported "Dream of the Good" peace education project[1]. They include mind/body techniques employing calm and concentration that may counteract negative effects of experienced stress, and contribute to positive mental states in place of negative ones. They also include reflection that aims specifically to affect the students' perception and make them see that their experience of others, and of the external world in general, is strongly connected to and dependent on themselves. The two methods employed in this study each belonged to one of the two types and were yoga and dialogue about existential questions.

The purposes of this study were both to evaluate if the self-report tests that were used constituted good measuring instruments, to evaluate the effects of the methods by using these instruments, and to discuss design of a planned large-scale controlled study based on these findings. The effects of the methods were viewed in terms of an overarching concept of peace defined at the individual level. This was measured in terms of psychological constructs for well-being, empathy and aggression. In this study a multidisciplinary approach was used for the theoretical framework. Empirical based psychology, with findings from controlled studies, represented a primary perspective that was rooted in a Western research tradition. In addition, Buddhist philosophy, representing knowledge based on centuries of introspective study, was applied as an Eastern perspective in order to extend the theory and help form hypotheses.

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[1] The "Dream of the Good" (http://www.dreamofthegood.org/) is regarded as a pilot project in the strategy of the Peace Appeal Foundation, established to help realise the UN Resolution 54/343 B calling for teaching and practice of peace in all schools across the world by 2010.

Peace at the individual level

In this study Galtung's concept of positive peace was used as a definition of peace due to its inclusiveness. This peace concept entails not only an absence of violence in its various forms, but also prosocial and cooperative actions, and a capacity to transform conflict in a non-violent manner (Galtung, 1996). At an individual level this peace concept, termed *individual peace* in this study, implies a person's ability to react in various situations without aggression and violence, harbour prosocial attitudes and act in a cooperative, caring and helping manner. Here, one may speak of degrees of individual peace. If such attitudes and actions are dominant and become more universal by extending the boundaries of specific in-groups, individual peace will be more fully developed. In such a case individual peace may be may be compared to Gandhi's concept of *ahimsa* whereby non-violent actions are based on strong and universal attitudes of non-violence (see Næss, 2000).

Calm and Concentration

There is ample support for mind/body techniques like meditation, yoga, qigong and massage contributing to well-being at a psychological and physical level (e.g. Benson 2000, Field, 1998; Uvnäs-Moberg, 2003; Xiulan, 2000). A *relaxation response* is elicited which is found to counteract the negative effects of the stress reaction, which is popularly called the *fight and flight response* (Benson, 2000; Uvnäs-Moberg, 2003).

The latter, being an automatic emergency response (Cannon 1914), is believed to fulfil the evolutionary role of preparing one's organism for fighting an adversary or fleeing from danger, and typically involves negative feelings like anger and fear. However, in modern society this instinctive fight and flight reaction is found to be frequently triggered by life's stresses such as situational changes, obstructions to goal directed behaviour, and other situations which require behavioural adjustment (Benson, 2000). In fact, many stressors of biological, environmental and psychological nature, such as pain, exposure to heat, cold and foul odours, frustration of goal behaviour, crowding, and aversive feelings in themselves including negative moods, sadness, fear and not least anger, have been found to contribute to acts of aggression (Passer & Smith, 2001; Berkowitz, 1989, 1990 2004). Berkowitz (1989, 2004) suggests, based on a large body of research, that the instigation of aggression is dependant on the strength of the negative emotions felt. He also suggests (Berkowitz,

1990), based on a cognitive neo-associanistic model, that anger is always present during a stress reaction, but that fear or other emotions co-occur and can be dominant.

The relaxation response on the other hand reverses the physical and psychological arousal associated with the fight and flight response, and instead contributes to physical and psychological well-being (Benson, 2000; Field, 1998; Uvnäs Moberg, 2003). Well-being, caring and sociability is typically observed in place of frustration, anger and fear (Uvnäs Moberg, 2003), and negative physical reactions (e.g. high blood pressure, and weakened immune system) associated with repeated triggering of the fight and flight response may be reversed (Benson, 2000). In line with this picture aggression has been shown to be reduced among children in nursery school through elicitation of the relaxation response by having them massage each other (Uvnäs Moberg, 2003). As concerns adolescents, Benson and co-workers (1994) obtained improvements in the positive psychological characteristics of self-esteem and locus of control, by applying a relaxation response based curriculum. With a similar intervention Benson and colleges (Benson et al., 2000) obtained improvements in cooperative and prosocial behaviour, as well as improving grades, in a middle school. Also, by applying massage therapy, aggression was reduced in adolescents (Diego et al. 2002), and mood and behaviour were improved in children and youths with ADHD (Khilnani, Field, Hernadez-Reif & Schanberg 2003).

Mood research strongly supports that psychological well-being, created through practice of relaxation techniques, enhance individual peace. Positive states of mind have been shown to consistently enhance prosocial behaviour in terms of helping (Eisenberg, 2000; Salovey et al, 1991). Also, from the links between relaxation methods and positive moods, and positive moods and helping, one may also assume that relaxation methods, at least temporarily, increase empathy. Empathy is found to greatly affect a person's willingness to help (Batson et al., 1981; Batson and Oleson, 1991; Eisenberg, 2000). Similarly, increased empathy has been found to influence how we react to provocation and increase the likelihood of forgiving (McCullough, Worthington & Rachal, 1997). Also research has showed that persons with higher dispositional empathy are less hostile (Davies, 1994) and that empathy generally correlates negatively with aggression and antisocial behaviour (Miller & Eisenberg, 1998)

From the point of view of Buddhism aversive mental states and aggression, and well-being and individual peace, are also intimately related. Aggression is

accordingly seen to be caused by aversive experiences (see Dalai Lama, 1997, 1999), which in Buddhist terms constitute suffering. Suffering is taken to denote all negative thoughts and emotions experienced at conscious and unconscious levels of the mind (see Wetlesen, 2000). The core Buddhist teaching 'The Four Noble Truths' (Dalai Lama, 1997) describes the reasons for and way out of suffering. According to this teaching suffering at the most conscious levels ('suffering of suffering', and 'suffering of change') is related to frustrations of desires and changes and uncertainties of life. This corresponds to the frustration-aggression hypothesis (see Dollard 1944; Berkowitz, 1989) and the frequent triggering, or overreaction, in modern society of fear and aggression by the fight or flight response (see Benson, 2000). According to the teaching suffering also occurs at a very deep level of consciousness (suffering of conditioning) caused by deep rooted wrong view of the nature of existence. One is found to cling to an erroneous, empirically established, and relatively constant, and dualistic concept of the self, in spite of nothing being impermanent or self-existing. This is seen to give rise an existential fear and is the root cause of the other types of suffering (see Wetlesen, 2000).

To deal with this Buddhist has a strong focus on calm and concentration through mediation and also other mind/body techniques. The relaxation response is elicited, and the meditative states are used as a basis for mind training to develop well-being and altruistic qualities.

Connection – Self and Experience

There is also theoretical support for a strong connection between self and experience that in terms affect behaviour. For instance, positive moods has been shown to induce more positive evaluations of situations and others, and is found to be one mechanism by which positive moods induce prosocial behaviour (Salovey, Mayer & Rosenhan, 1991). Also, attributions of blame and negative appraisals of others often accompany aggression or anger which is induced by aversive emotions (see Berkowitz, 2004). The negative appraisal need not be justified, and may occur after some aversively experienced event as happens in cases of displaced aggression (e.g. Pedersen, Gonzales & Miller, 2000).

Also, at a cognitive level, the influencing role of the self-concept on the perception of others is widely acknowledged (see Miceli and Castelfranchi, 2003). General projection, as it is termed by these authors, involves making inferences about

others based one's own beliefs, attitudes and ideas. According to a false consensus effect people have a tendency to believe that others share what one thinks, feels and does unless there is evidence for the contrary (Newman and Duff, 1997; Miceli and Castelfranchi, 2003).

At the unconscious level there seems to be an equally close link between one's mental content and perception of others. At this level, however, it is attitudes, beliefs and dispositions that one denies possessing that are attributed to others (Miceli and Castelfranchi, 2003). Recent research on defensive projection has provided evidence for a readiness to project onto others threatening aspects of oneself (Newman & Duff, 1997). Unwanted traits were found to become chronically accessible for making inferences about others. This is in agreement with research by Wegner, Shortt, Blake & Page (1990) who found emotionally laden thoughts which were kept from consciousness, to continue to remain active through an emotional press. Habituation occurred, however, when the emotionally laden thought were focused upon and kept in the awareness, thus relieving the emotional press. Also, in experiments on prejudice, unconsciously activated stereotypes have been shown to inform attitudes against other ethnic groups, unless consciously held (and more positive) attitudes where focused upon (Devine, 1989). This accords with the more general findings by Fazio (1990) that consciously held attitudes heavily influence behaviour when focused upon, whereas chronically activated attitudes, of which one is not conscious, do so when the consciously held attitudes are not focused upon. Similarly, conscious motives have been found to guide consciously chosen behaviour, whereas implicit or unconscious behaviour is found to guide behaviour in the long run.

These findings suggest a role of awareness, or attention, as a mechanism for counteracting unconscious processes leading to negative perceptions of others. The mind/body techniques should work to this effect to the degree that, through calm and concentration, suppressed thoughts and emotions enter into focus without being suppressed anew. As concerns the dialogue about existential questions, the participating students have an opportunity to adjust their picture of others by becoming more aware of, and possibly reduce, own tendencies to categorise and wrongly ascribe qualities to others. At the same time, by hearing others' perspectives on existential topics, they may learn that others share basic human qualities such as hopes, fears, sufferings and a wish for happiness. Feelings of similarity and

interconnectedness, which may arise, have been found to contribute to increased empathy (see Davies 1994, Passer & Smith, 2001).

Buddhist philosophy strongly supports the existence of an intimate connection between oneself and how the world is perceived. Suffering, which include anger and aggression, is found to ultimately stem from a fundamental ignorance of the true nature of reality (Dalai Lama, 1999). There is a tendency to have to have a rigid and empirical view of oneself, others and phenomena in general which does not have bases in reality (Wetlesen, 2000). According to Mahayana Buddhism, and strongly emphasized in the Madyamaka (middle way) philsosophical school, all phenomena are "empty" of independent existence (Kyabgon, 2000). According to the law of dependant co-origination northing exists independently, but depends on a number of causes and effects. All phenomena are also fund to be transient in nature (see Dalai Lama 1997). The Yogachara philosophical school of Mahayana Buddhism spells out the relation to the mind by saying that our experiences at sensory, conceptual and moral levels are coloured by or presuppositions, prejudices and predilections (see Kyabgon, 2001). At this normal 'illusory level' of experiencing reality concepts are reified, and one reacts to the world in a dualistic manner. Hence, the aim of Buddhist practice is to experience the world at the 'ultimate level' of reality which involves a direct experience devoid of subject-object duality. Such distorted and dualistic experiences of reality are found to give rise to negative emotions like fear, anger, greed and jealousy related to aversion and desire (Kyabgon, 2001).

By the teaching of the Four Noble Truths Buddhism prescribes a way out of suffering, including getting rid of anger, fear and other aversive emotions contributing to aggression. This path has three aspects (see Wetlesen, 2000). The concentration aspect, coupled to elicitation of the relaxation response, deals with raising awareness through meditation practice, as well as in daily life, and thus concerns uprooting negative unconscious content. The moral aspect concerns ethical behaviour in order to create positive, wholesome, patterns of thought and behaviour and strive towards acting without attachment to a self concept. In Buddhist terms positive actions create positive karma, which may be understood as creating or strengthening dispositions for prosocial thoughts and emotions, which in turn serve to reduce suffering and increase one's happiness (see Wetlesen, 2000). Finally, the wisdom aspect concerns understanding the notion of emptiness and that one's way of reacting are based on a false empirical notion of oneself and one's surroundings (see Dalai Lama, 1999,

Wetlesen, 2000). The third aspect thus deals with how one's experiences and one's understanding of oneself and the world are connected. It also relates to the suffering and anger one experience and supports a peaceful development by becoming more aware of how experiences is coloured by oneself.

Research questions and Hypotheses

1. Validity and Reliability of the Measuring Instruments

The first research question was about establishing if the employed self-report scales constitute good measures that are valid and reliable. To be valid the different measures should correlate as expected. As theory predicts that well-being has a positive effect on individual peace, there should be positive correlation between the two. In terms of the actual scales, school satisfaction and self-esteem (positive measures of well-being) should correlate positively with empathy and negatively with aggression. Psychological distress and depression, (negative measures of well-being) should correlate negatively with empathy and positively with aggression. Empathy should correlate negatively with aggression. Also, to constitute reliable measures of these constructs, a sufficient internal consistency should be obtained for each scale that is used. To be reliable Cronbach's alpha should be greater than 0.7 (see Knoke, Bohrnstedt & Mee, 2002).

2. Effects on Individual Peace

The second research question concerned the effects on individual peace of the transformative peace education methods applied in this study. These effects were also subject to evaluation in terms of class level, students' sex and cultural background. Based on the reviewed theory improvements should be obtained in terms of increased well-being, increased empathy, and reduced aggression. However, since the intervention was fairly short (ten weeks), it was also a question of how big any improvements might be and whether they would be significant.

3. Implications for experimental design

The last research question was about clarifying implications for design of a large-scale controlled study of transformative peace education methods. This included evaluating if the employed scales were suitable for the class levels participating in this study. Also, based on the results from the questionnaire, it should be determined if the

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experimental period should be increased, and if the experimental groups should have a certain lack of individual peace at the outset of the experiment. Regarding the latter, it was seen as possible that more conclusive results might be obtained in cases where the scope for improvements is larger. Also, if effective in this respect, the methods might be good for employment in groups where antisocial and aggressive behaviour frequently occurs.

Method

Experimental groups

The participants in the study consisted of 81 students. From one Oslo school a test group was made up of 26 students in 9th grade (one school class) and a control group was made up of another 26 students (another school class). From a second Oslo school a test group was made up of 16 students in 7th grade and a control group was made up of 13 students in 7th grade. Among the 9th graders 75% of the students were born in Norway, and among the 7th graders 89% of the students were born in Norway. The ratio of boys to girls was 38-62% in 9th grade and 56-42% in 7th grade. In both 9th and 7th grade the test and control groups had similar demographics.

Experimental Procedure

The test groups received training in yoga and had sessions of existential dialogue over a period of ten weeks. The sessions lasted approximately twenty minutes. Every second week there were one session of yoga and one session of existential dialogue, and every second week, in between, there were two sessions of yoga. The yoga was of classical type (hata-yoga) and contained physical exercises, relaxation and stillness. The existential dialogue was centred on fundamental questions in relation to what it means to exist and to be human and was carried out so that all students could express their perspectives without interference. Trained yoga instructors conducted the sessions in cooperation with class teachers.

Pyscholgical Tests

Well-being was measured in terms of physical, psychological and social aspects. For the physical aspect, five questions drawn from the Scale on Psychological Distress by Ben-Sira (1982) were used. For the psychological aspect, depression was measured by

9 questions by Pesa, Syre & Jones (2000) and self-esteem was measured by Rosenberg's self-esteem scale (Heatherton & Wyland, 2003). For the social aspect of well-being, school satisfaction was measured by 5 questions by Terjestam (2006). Empathy was tested with the Interpersonal Reactivity Index (IRI) by Davies (1994). Here the subscales of 'empathic concern' and 'perspective taking' were included on the questionnaire, and 'total empathy' was defined as the sum of the two. Finally physical and verbal aggression was measured by an aggression scale developed by Pastorelli, Barbaranelli, Cermak, Rozsaa & Capara (1997). In general the scales were chosen based on being validated instruments that are suitable for adolescents. In all cases the questions were translated from English to Norwegian. Also, as regards the aggression scale, answering categories were expanded from three to five.

All the tests were such that the students were given choices of answers, forming a scale, of either how often a given statement would apply or how much they agreed with the statement. The answers were coded 0-3 or 0-4 depending on the number of choices where 0 corresponded to 'totally disagree' or 'never', and the top score of 3 or 4 corresponded to 'totally agree' or 'often'. Possible scores were 0-15 for psychological distress, 0-27 for depression, 0-30 for self-esteem, 0-15 for school satisfaction, 0-52 for empathy (total), and 0-45 for aggression.

In addition to the scales, the post-test also included questions of how the students perceived their own well-being and behaviour, and the group solidarity and behaviour, to be affected by the methods, and they were asked if they wanted to continue practicing the techniques in class. Positive outcomes were expected for these questions if the scales measuring individual peace yielded positive results.

A Norwegian version of the questionnaire is shown in the appendix.

Results and Discussion

In 7th grade 3 students in the test-group, and none in the control group, were absent at the time of the post-test, leaving 13 in the test group and 13 in the control group completing both the pre-test and post-test questionnaire. In 9th grade 11 students in the test group and 4 students in the control group were absent at the time of the post-test. Thus 15 in the test group and 22 in the control group completed both questionnaires. In total 63 students across the two class levels completed both questionnaires.

Some questionnaires filled in by the students lacked answers, corresponding to missing values of less than one percent. Prior to analysis in SPSS the individual students' average for a particular scale was assigned in the place of the missing values.

Validity and Reliability of the Measuring Instruments

Internal Consistency

As shown in Table 1 most scales either reached Cronbach's alpha > 0.7, or were very near this value, and thus had a satisfactory internal consistency across the two class levels. The exception was 'perspective taking' (a subscale of the IRI) when it was applied to 7th graders, yielding an alpha of only 0.44.

Table 1: Internal Consistency (Cronbach's alpha)

Scale	7th grade	9th grade
Psychological Distress	0.72	0.69
Depression	0.89	0.93
Self-esteem	0.81	0.91
School satisfaction	0.69	0.79
Empathy – empathic concern	0.68	0.67
Empathy – perspective taking	0.44	0.69
Empathy – total	0.77	0.72
Aggression	0.82	0.89

The results are from post-test. There were 26 participants in 7th grade. 37 participants in 9th grad. The results include both test groups and control groups

In comparison with the low internal consistency on 'perspective taking' in 7th grade, the subscales of the Davies' IRI typically yield an alpha of 0.7-0.78 when they are used on adults (Zhou,Valiente & Eisenberg, 2003) The answers on the questionnaires, along with questions asked in class during pre-test and post-test, seem to indicate that the question wording was too difficult for some of the students at this level. There is thus a need to replace Davies' Interpersonal Reactivity Index with an empathy scale that is better suits young adolescents. The much used Bryant's empathy scale (Bryant, 1982), which measures global empathy among children seems to constitute a good measure for this age group. The scale is a modification of the

commonly used Mehrabian and Epson empathy scale to fit children (Zhou,Valiente & Eisenberg, 2003).

Two of the scales that were bordering Chronbach's alpha of 0.7 , 'psychological distress' and 'school satisfaction', consisted of 5 questions only. The internal consistency of these scales may be increased by including more questions which pertain to the same construct (see Knoke, Bohrnstedt & Mee, 2002).

Correlation between scales

The Pearson correlations between the scales, at time of the post-test, is shown in table 2. Most results reached significance either at the 0.01 level or the 0.05 level (one-tailed). Self esteem and school satisfaction, which are aspects of well-being, correlate positively with empathy and negatively with aggression. Psychological distress and depression, which indicate lack of well-being, correlate negatively with empathy and positively with aggression. Also empathy has a strong negative correlation (-0.53) with aggression. These results are as expected and indicate external validity of the scales being used. For instance self report measures of empathy have previously been found to consistently correlate negatively with self report measures of aggression (Miller & Eisenberg, 1988), as is also the case here. Also, according to the cited theory, negative emotions associated with stress and lack of well-being were found to contribute to increased aggression in line with this picture. On the other hand positive moods and well-being were found to be linked to positive behaviour like helping and caring involving empathy.

Table 2: Pearson correlations between the scales

	Psychological Distress	Depression	Self-esteem	School satisfaction	Empathy	Aggression
Psych. distr.	1.00	0.31**	- 0.30**	- 0.19	- 0.09	0.31**
Depression		1.00	- 0.71**	- 0.69**	- 0.16	0.29*
Self-esteem			1.00	0.63**	0.28*	- 0.37**
School sat.				1.00	0.31**	-0.21*
Empathy					1.00	-0.53*
Aggression						1.00

N= 63. 7th and 9th grade.

* Correlation is significant at 0.05 level (one-tailed)

** Correlation is significant at the 0.01 level (one-tailed)

There were also strong correlations between several of the measures of well-being as might be expected. Self esteem reached a coefficient of 0.63 with school satisfaction and a coefficient of - 0.71 with depression. Similarly depression had a coefficient of - 0.69 with school satisfaction.

Other Considerations

The depression scale and the school satisfaction scale had many answers at the very low and high end of the scales respectively. For further studies it seems sensible to modify these scales slightly so they become sensitive to changes for these measures in the whole population of the experiment. For instance, the depression scale, which asks for symptoms of depression that have occurred during the last week, may me modified to ask for the same during the last fortnight or month.

Effects on Individual Peace

Effects on 7th grade Students

The effects on individual peace (well-being, empathy and aggression) are shown in tables 3 and 4 for the test group and the control group in 7th grade. Table 3 shows a significant improvement (one-tailed) in psychological distress and self-esteem for the 7th grade test group and a small positive trend for the other parameters. In comparison the 7th grade control groups had no improvement for any of the measures (table 4).

Table 3: Individual Peace - 7th grade Test Group

	Psychol. distress	Depression	Self-esteem	School satisfaction	Empathy	Aggression
Pre-test	6.1	4.4	19.1	13.5	35.8	12.3
Post -test	4.8	2.5	21.9	13.7	36.4	11.8
Sigma	*0.05*	*0.11*	*0.04*	*0.24*	*0.35*	*0.35*

N= 13. One-tailed test of significance

Table 4: Individual Peace - 7th grade Control Group

	Psychol. distress	Depression	Self-esteem	School satisfaction	Empathy	Aggression
Pre-test	5.5	4.2	24.2	13.1	34.3	8.6
Post -test	5.3	4.0	24.2	12.6	33.5	9.5
Sigma	*0.73*	*0.85*	*0.94*	*0.40*	*0.66*	*0.57*

N= 13. Two-tailed test of significance

The psychological distress scale measures physical symptoms of stress like dizziness, headaches, sleeplessness, and it accords well with the cited theory that repeated triggering of the relaxation response, in this case through yoga, reduces the occurrences of such symptoms. As the Rosenberg's self esteem scale is a global measure of self esteem, it is not clear what domains the improved self-esteem relates to. However, there are reasons to believe that yoga, through the relaxation response, helps academic ability and general ability to cope with life stresses (see Benson et al., 2000).

The positive trends for empathy and aggression were as expected since there were improvements in well-being and positive states of mind. The improvements in empathy and aggression did however not reach significance and were smaller than the improvements in the measures of well-being: stress, self esteem, and depression. The smaller increases are nevertheless in accordance with the correlations presented in table 2. The different measures of well-being typically had correlations with empathy and aggression of around 0.3.

The test group turned out to be too small for a detailed analysis in terms of the sex and the cultural background of the students. However, in terms of students' sex there were a couple of interesting observations. The reduction in psychological distress largely applied to male students with a change in mean score from 8.0 to 4.0 from the pre-test to the post-test. Female students had corresponding changes in mean score from 5.4 to 4.6 and thus had a more moderate reduction. In terms of depression the main reduction applied to female students scoring on average 4.4 before and 2.2 after the mind/body intervention. The male students correspondingly scored 4.3 before and 3.7 after the intervention.

Effects on 9th grade Students

The effects on individual peace (well-being, empathy and aggression) are shown in tables 5 and 6 for the test group and the control groups in 9th grade. Table 5 shows no improvements in well-being, empathy or aggression for the test group. The results for the test group were not any better than for the control group (shown in table 6).

The results in 9th grade were not according to the hypothesized improvements and raise the question of why this was so. On a general level the results may have

been skewed, either in a negative or positive direction, as only 15 out of 26 students were present at the time of the post-test. The reasons for this are unknown.

Table 5: Individual Peace - 9th grade Test Group

	Psychol. distress	Depression	Self-esteem	School satisfaction	Empathy	Aggression
Pre-test	6.2	6.9	20.9	11.3	31.5	16.7
Post -test	6.6	6.9	20.8	11.9	31.3	16.5
Sigma	0.40	0.96	0.85	0.24	0.88	0.75

N= 15. Two-tailed test of significance

Table 6: Individual Peace - 9th grade Control Group

	Psychol. distress	Depression	Self-esteem	School satisfaction	Empathy	Aggression
Pre-test	4.7	3.2	23.8	13.4	33.1	13.6
Post -test	5.1	3.2	24.3	13.7	33.6	12.6
Sigma	0.34	1.00	0.42	0.32	0.68	0.26

N= 22. Two-tailed test of significance

However, there was one noticeable difference between the implementation of yoga in the two grade levels. In 7th grade the class teacher participated both in leading and doing the yoga exercises, whereas the teacher in 9th grade teacher was not participating. It may be important for reaping the expected benefits of the exercises that the teacher set a good example by participating, and in this way model for the students. In future experiments it seems necessary to control for this and make teacher participation be part of how the exercises are implemented.

Also implementation of the existential dialogue proved problematic in 9th grade. According to oral reports power structures among the students, where some students were dominant, prevented the sharing of perspectives with respect to the topics being reflected upon. Based on experiences from "the Dream of the good" it should however work better to start off with practicing stillness within the group for a few minutes. In this way a space that is more open and conducive to sharing of perspectives may be created. In the 9th grade test-group, the existential dialogue functioned a little better by dividing boys and girls into separate groups, thus avoiding some of the problems due to dominance of individual students.

Particular to the 9th grade test group was also a low degree of well-being and empathy and a high degree of aggression compared to the 9th grade control group and 7th grade test and control groups. It is possible that a higher level of conflict or lack of

peace in the group makes the implementation more difficult. Nevertheless, some of the cited studies (e.g. Benson et al., 2000; Diego et al. 2002) show that mind/body techniques may increase individual peace among students in groups where the level of aggression is high. It may thus be more a question of finding a way to implement the methods in such groups so that they are effective.

Perceived Effects

Table 7 and 8 show how the students perceived the effects of yoga and existential dialogue to affect own well-being and behaviour, and class atmosphere, solidarity, calmness and behaviour.

Table 7: Perceived effects in 7th grade Test Group (%)

	Much better	A little better	Unchanged	Worse	Much worse
Enjoying own company	15	62	23	0	0
Own behaviour	23	23	54	0	0
Calmness of class	15	54	31	0	0
Class atmosphere	23	54	23	0	0
Group solidarity	15	62	23	0	0
Class behaviour	0	46	54	0	0

Table 8: Perceived effects in 9th grade Test group (%)

	Much better	A little better	Unchanged	Worse	Much worse
Enjoying own company	0	47	53	0	0
Own behaviour	7	40	53	0	0
Calmness of class	7	40	47	7	0
Class atmosphere	0	33	67	0	0
Group solidarity	0	20	80	0	0
Class behaviour	0	53	40	7	0

In 7th grade enjoyment of own company, reflecting well-being was perceived to be improved by 77% of the students, and own behaviour, reflecting empathy and aggression, was perceived to be improved by 46%. Even though these results are subject to memory and attribution biases, they mirror the fact that measured effects on well-being were stronger than the measured effects on empathy and aggression. The methods were also perceived to have a positive effect on the social setting, reflecting

the improvements on the individual measures. Calmness of class, class atmosphere, group solidarity and class behaviour were found to be improved by 69%, 77%, 78% and 46% respectively. None of the students perceived any of these aspects to become worse.

In 9th grade 47 % of the students perceived enjoyment of own company and own behaviour to be improved despite the pre-test / post-test measure not showing any improvements. This may have to do with biases in the self reporting of the effects and/or these two questions not reflecting fully the pre-test/post-test measures, thus giving somewhat different results. In terms of effects on the group, calmness of class, class atmosphere, group solidarity and class behaviour were found to be improved by 47%, 33%, 20% and 53% respectively, and 7% found calmness of class and class behaviour to have become worse. In this case there may also be biases affecting the results. Nevertheless, the students in 9th grade perceived the effects on the group to be much less positive than in 7th grade as might be expected from the pre-test/post-test results.

Effects on Motivation

Graphs 1 and 2 shows the interest among the students in the 7th and 9th grade test groups for continuing with yoga and existential dialogue in class.

In 7th grade all but two students would like to continue to practice yoga. A majority reported that it feels good, is relaxing and/or reduces stress. In 9th grade 11 out of 15 also wanted to continue with yoga in school, mainly for the same reasons, though some reported that it makes them more alert, and some said it was a welcome change from normal classes. The few that did not want to continue to practice yoga at either class level either found the exercises to be boring or not working.

In both grade levels about half of the students wanted to continue with existential dialogue in school whereas half of them did not (see graphs 1 and 2). The main reasons reported for wanting to continue was that it allowed a space to express what one feels and hear what other think. The dominant reasons for not wanting to continue were either: perceiving it as boring, not understanding the purpose, or finding that it did not function well. The latter particularly applied to the 9th grade test group.

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Graph 1: Motivation to continue - 7th grade

Graph 2: Motivation to continue - 9th grade
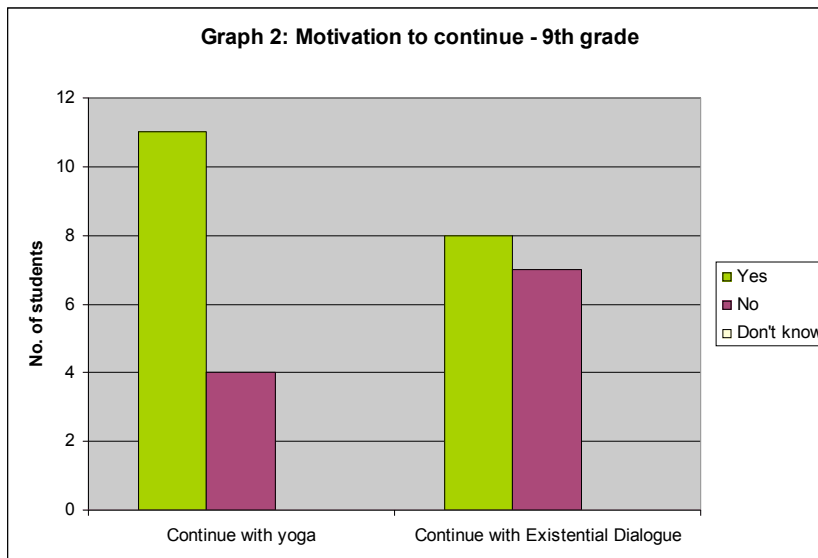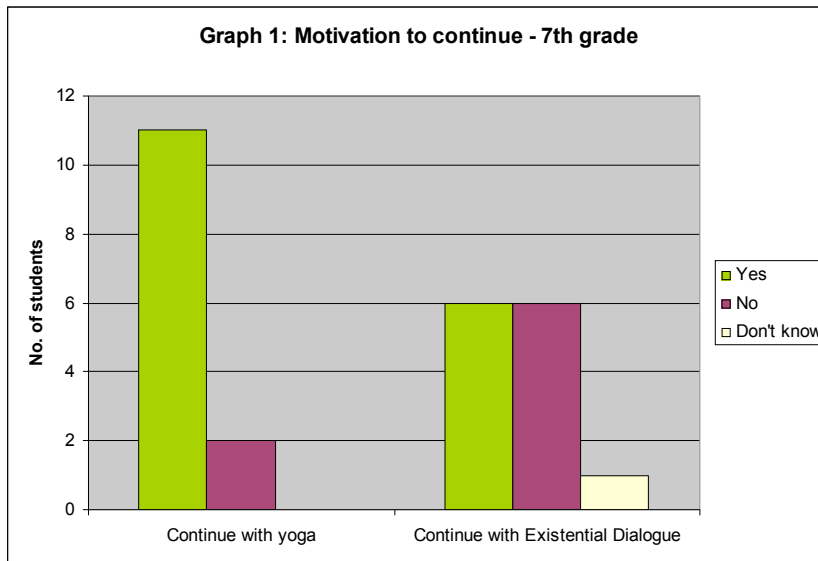
It seems clear that yoga by far was best accepted. As only half of the students wanted to continue with existential dialogue, it seems necessary to revise the implementation of this method. As mentioned earlier, practicing stillness prior to existential dialogue is believed to make this method more effective, and may thus make it more enjoyable for the students.

Implications for Experimental design

As has partly been described during the previous discussion, the findings in this study suggest some implications for the design of the planned large-scale controlled study.

With regard to implementing the transformative peace education methods it seems that that teacher participation when doing the actual exercises is an important parameter in terms of modelling and setting a good example for the students. This should also allow the teachers to "tune in" with the students, which in turn may help cooperation between the teachers and the students during classes. In terms of existential dialogue, practicing stillness at the start should help create a space in which the dialogue can take place.

Most of the scales that have been used in the pilot study have worked well. The exception is the interpersonal reactivity index where the sub-scale of perspective taking had a low internal consistency for 7th graders. This index can be replaced by the Bryant's empathy scale for children and adolescents. In addition, the two scales "school satisfaction" and "psychological distress" yielded slightly low values of Chronbach's alpha. A few extra questions pertaining to the same construct need to be added to these scales as they only consist of five questions each.

In order to obtain stronger results in terms of effects and significance it seems reasonable to extend the period of implementation that was 10 weeks in this study. The implementation may be extended to 14 weeks in the future studies and still be well within the period of one semester. Also, the group sizes should be such that there are minimum 50 students in both the test group and the control group completing the pre-test and the post-test for each method being tested.

As concerns class level the planned study is intended to be done with 7th graders as participants. This pilot study has showed that the mind/body techniques may be effective for this age group (12-13 years). Also, there is the practical consideration of this class level having more time available for experiments than is often the case in 9th grade. Studies previously cited (e.g. Benson et al., 2000; Khilnani, Field, Hernandez-Reif, Schanberg, 2003) have however shown that mind/body techniques may be effective for the latter grade level, and experiments may be extended to this age group at a later stage.

In terms of initial level of individual peace it remains unclear whether, or to what degree, a certain lack of individual peace affects the practical implementation and its results. In any case it is difficult to control for this factor, so it will not be part of the experimental design. However, in contrast to this pilot study where there has been no randomization of participants in the test group and control group, the planned study need to ensure that test and control groups are balanced, thus avoiding this

methodological weakness. It is seen as necessary to randomly assign participating students to the test and control groups at each school that take part in the study,.

In sum the pilot study has provided valuable knowledge for further studies. Knowledge has been gained in relation to the measuring instruments, in relation to effects of transformative peace education methods on individual peace, and in relations to implications for further studies. The protocol describing the planned large-scale controlled study will reflect the above considerations.

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