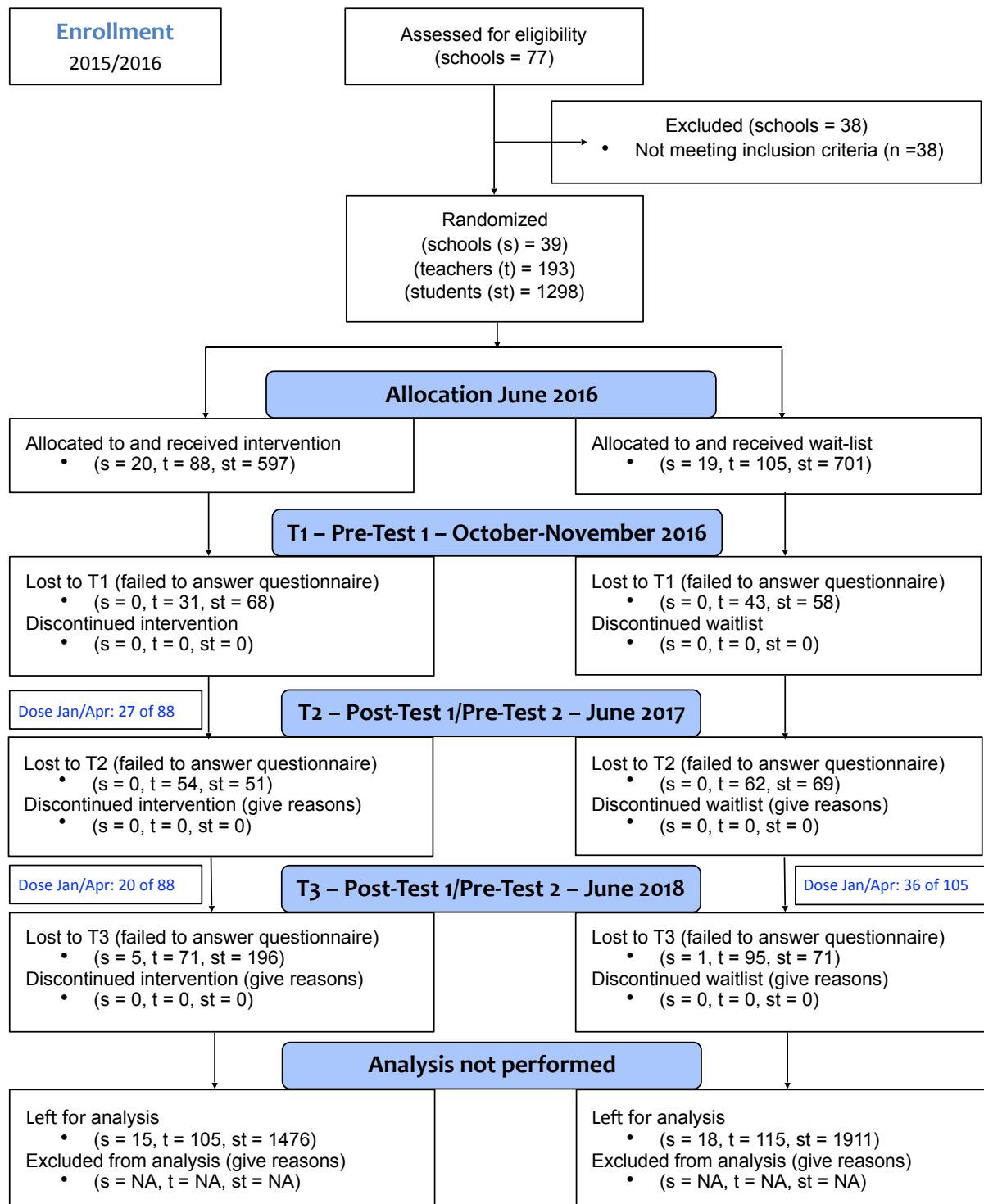# Basic results summary of ISRCTN16294629 DOI 10.1186/ISRCTN16294629

Social and Emotional Learning in Schools: evaluation of the Norwegian version of the Lions-Quest "Skills for Adolescence" program

Participant flow

Enrollment
2015/2016

Assessed for eligibility
(schools = 77)

Excluded (schools = 38)
- Not meeting inclusion criteria (n =38)

Randomized
(schools (s) = 39)
(teachers (t) = 193)
(students (st) = 1298)

Allocation June 2016

Allocated to and received intervention
- (s = 20, t = 88, st = 597)

Allocated to and received wait-list
- (s = 19, t = 105, st = 701)

T1 – Pre-Test 1 – October-November 2016

Lost to T1 (failed to answer questionnaire)
- (s = 0, t = 31, st = 68)
Discontinued intervention
- (s = 0, t = 0, st = 0)

Lost to T1 (failed to answer questionnaire)
- (s = 0, t = 43, st = 58)
Discontinued waitlist
- (s = 0, t = 0, st = 0)

Dose Jan/Apr: 27 of 88

T2 – Post-Test 1/Pre-Test 2 – June 2017

Lost to T2 (failed to answer questionnaire)
- (s = 0, t = 54, st = 51)
Discontinued intervention (give reasons)
- (s = 0, t = 0, st = 0)

Lost to T2 (failed to answer questionnaire)
- (s = 0, t = 62, st = 69)
Discontinued waitlist (give reasons)
- (s = 0, t = 0, st = 0)

Dose Jan/Apr: 20 of 88

T3 – Post-Test 1/Pre-Test 2 – June 2018

Dose Jan/Apr: 36 of 105

Lost to T3 (failed to answer questionnaire)
- (s = 5, t = 71, st = 196)
Discontinued intervention (give reasons)
- (s = 0, t = 0, st = 0)

Lost to T3 (failed to answer questionnaire)
- (s = 1, t = 95, st = 71)
Discontinued waitlist (give reasons)
- (s = 0, t = 0, st = 0)

Analysis not performed

Left for analysis
- (s = 15, t = 105, st = 1476)
Excluded from analysis (give reasons)
- (s = NA, t = NA, st = NA)

Left for analysis
- (s = 18, t = 115, st = 1911)
Excluded from analysis (give reasons)
- (s = NA, t = NA, st = NA)

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Baseline characteristics - schools

Table 1.
School characteristics at allocation.

	Experiment			Control		
Employee and student characteristics	N_H	**Sum (Min-Max)**	**M (SD)**	N_H	**Sum (Min-Max)**	**M (SD)**
Employees total (whole school)	20	634 (4-70)	31.70 (19.3)	19	750 (10-74)	39.47 (21.5)
Class teachers total (whole school)	20	255 (2-28)	12.75 (6.9)	19	283 (4-32)	14.89 (7.8)
Students total (whole school)	20	4345 (15-570)	217.25 (167.8)	19	4833 (60-380)	254.37 (171.2)
Students in 5th grade (whole school)	20	595 (4-82)	29.75 (24.4)		685 (7-79)	36.05 (23.1)
Students' SEP- and language status	N_H	**% Min-Max**	**%**	N_H	**% Min-Max**	**%**
Percentage of students total with SEP	19	0-13	5.98 (3.8)	19	7-79	8.96 (5.8)
Percentage of 5th grade students with SEP	20	0-30	5.25 (8.49)	19	0-16	6.99 (5.4)
Percentage of students total with:						
Norwegian first language	18	45-100	86.27 (16.1)	18	0-100	80.93 (24.7)
European/English first language	15	0-8	2.27 (3.0)	16	0-13	3.08 (4.1)
Sámi as first language	14	0-2	.29 (.7)	14	–	–
Other first language	15	0-16	4.41 (4.8)	16	0-44	12.12 (15.0)

Notes:

N_H = number of headmaster respondents at allocation/inclusion.

SEP = special education program.

Baseline characteristics – students

Table 2.
Sample characteristics at T1 by trial arm.

	Experiment		Control	
Class and teacher characteristics -Teacher report	**N_T**	**M (SD)**	**N_T**	**M (SD)**
Number of students in class	57	17.56 (4.22)	62	17.79 (4.33)
Number of students in class receiving SEP	57	2.67 (1.52)	62	2.76 (1.41)
Years of experience as teacher	57	3.46 (1.15)	62	3.35 (1.24)
Pre-knowledge of Lions Quest*	57	2.09 (.85)	62	2.30 (1.04)
Student behavior outcomes - Teacher ratings	**N_T**	**M (SD)**	**N_T**	**M (SD)**
Prosocial behavior**	57	4.12 (.42)	62	3.86 (.50)
Motivation**	57	4.08 (.41)	62	3.73 (.49)
Total problems in classroom last week**	57	31.36 (7.84)	62	35.61 (9.90)
Moderate problems**	57	17.86 (6.26)	62	20.92 (7.11)
Severe problems*	57	13.51 (2.50)	62	14.69 (3.42)
Total problems in school environment last week*	57	21.14 (4.70)	62	23.11 (5.92)
Moderate problems	57	11.91 (3.67)	62	12.87 (3.99)
Severe problems**	57	9.23 (1.54)	62	10.24 (2.39)
Student gender – Student report	**N_S**	**%**	**N_S**	**%**
Female	257	49.6	314	49.3
Male	261	50.4	323	50.7
Student behavior outcomes - Student ratings	**N_S**	**M (SD)**	**N_S**	**M (SD)**
SDQ Total problems*	528	10.52 (5.29)	636	11.30 (5.45)
SDQ Conduct problems	526	1.62 (1.53)	634	1.84 (1.69)
SDQ Emotional problems	525	3.11 (2.16)	634	3.30 (2.15)
SDQ Hyperactivity	525	3.78 (2.09)	634	4.01 (2.08)
SDQ Peer problems	526	2.04 (1.68)	630	2.19 (1.69)
SDQ Prosocial	527	8.13 (1.65)	635	7.95 (1.68)
SEARS-C-SF	504	21.74 (5.37)	600	21.20 (5.51)
SC-STR (Teacher-Student relations)	523	11.52 (2.92)	626	11.25 (3.27)
SC-SSR (Student-Student relations)	522	9.63 (2.56)	631	9.34 (2.55)
CSEI-SFF (Coopersmith)*	504	9.68 (2.85)	598	9.33 (2.92)
Students at risk - Student ratings	**N_S**	**N (%)**	**N_S**	**N (%)**
SDQ Total problems*	528	103 (19.5)	636	160 (25.2)
SDQ Conduct problems*	526	56 (10.6)	634	93 (14.7)
SDQ Emotional problems	525	121 (23.0)	634	177 (27.9)
SDQ Hyperactivity	525	98 (18.7)	634	127 (20.0)
SDQ Peer problems	526	83 (15.8)	630	122 (19.4)
SDQ Prosocial	527	40 (7.6)	635	55 (8.7)
SEARS-S-SF	504	91 (18.1)	600	109 (18.2)

Notes:
N_T = number of teacher respondents,
N_S = number of student respondents

* = $p \leq .05$, ** = $p \leq .01$

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Internal consistency for the student outcomes at T1 and T2

Table 3.
Internal consistency for the student outcomes.

Student Rating Outcome Scales	Current study Internal consistency			From Manual or article	
	T1 (N)	T2 (N)	T3 (N)	Internal consistency	Reference
SDQ Total Problems (20)	α = .78 (1151)	α = .79 (942)		α = .76	Muris et al. (2004)
SDQ Conduct (5)	α = .55 (1160)	α = .56 (1082)		α = .46	Muris et al. (2004)
SDQ Emotion (5)	α = .66 (1159)	α = .67 (1080)		α = .63	Muris et al. (2004)
SDQ Hyperactivity (5)	α = .64 (1159)	α = .76 (1087)		α = .68	Muris et al. (2004)
SDQ Peer Problems (5)	α = .53 (1156)	α = .58 (1064)		α = .41	Muris et al. (2004)
SDQ Prosocial (5)	α = .67 (1162)	α = .65 (1105)		α = .60	Muris et al. (2004)
SEARS-F-SF (12)	α = .80 (1104)	α = .84 (1123)		α = .85	Merrell (2011)
CESI-SFF (14)	α = .71 (1102)	α = .75 (852)		α = .87*/ α =.88**	Coopersmith (2002)
SC-SSR (4)	α = .78 (1132)	α = .80 (1103)		α = .75	Bru et al. (1998)
SC-STR (5)	α = .74 (1140)	α = .79 (1078)		α = .71	Bru et al. (1998)

Notes:
Numbers in parentheses are number of items comprising scale,
N is from original dataset, missing cases deleted listwise
* = 5th grade
** = 6th grade

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program

Missing value analysis and imputation for the student outcomes at T1 and T2

Table 4.
Missing values analysis and imputation for student outcomes.

Time	Student Ratings Outcome Variable (N)	MI-PA-PID		MVA-EM Little's MCAR test, χ^2 =	MAR ScMdiff Mean, Min., Max.
		Cases	Values		
T1	SDQ Total Problems (20)	20.5	2.68	2110.62, DF = 1792, Sig. = .00	-0.04, -0.10, 0.02
T1	SDQ Conduct (5)	8.3	2.50	47.09, DF = 47, Sig. = .47	
T1	SDQ Emotion (5)	7.3	2.39	52.47, DF = 48, Sig. = .31	
T1	SDQ Hyperactivity (5)	8.4	2.65	42.63, DF = 50, Sig. = .76	
T1	SDQ Peer Problems (5)	10.7	3.21	79.60, DF = 45, Sig. Sig. = .00	-0.05, -0.13, 0.03
T1	SDQ Prosocial (5)	6.8	1.99	50.99, DF = 46, Sig. = .28	
T1	SEARS-C-SF (12)	5.8	1.89	517.35, DF = 405, Sig. = .00	0.13, 0.20, 0.34
T1	CESI-SFF (14)	23.8	5.53	1508.48, DF = 1454, Sig. = .16	
T1	SC-SSR (4)	7.3	3.79	48.13, DF = 26, Sig. = .000	0.31, 0.22, 0.41
T1	SC-STR (5)	8.6	4.42	75.83, DF = 55, Sig. = .03	0.06. -0.06, 0.16

Time	Student Ratings Outcome Variable (N)	MI-PA-PID		Missing Value Analysis Little's MCAR test, χ^2 =	MAR ScMdiff Mean, Min., Max.
		Cases	Values		
T2	SDQ Total Problems (20)	20.1	2.67	2030.79, DF = 1785, Sig. = .00	-0.06, -0.20, 0.03
T2	SDQ Conduct (5)	8.2	2.53	104.15, DF = 49, Sig. = .00	-0.07, -0.20, 0.01
T2	SDQ Emotion (5)	8.4	2.46	55.34, DF = 41, Sig. = .07	
T2	SDQ Hyperactivity (5)	7.8	2.77	67.75, DF = 47, Sig. = .03	0.01, -0,10, 0.15
T2	SDQ Peer Problems (5)	9.8	3.07	71.48, DF = 47, Sig. = .01	-0.08, -0.20, 0.04
T2	SDQ Prosocial (5)	6.3	2.09	*71.63, DF = 48, Sig. = .02*	0.10, 0.02, 0.22
T2	SEARS-C-SF (12)	4.8	1.24	451.69, DF = 426, Sig. = .19	
T2	CESI-SFF (14)	27.7	6.08	*1736.98, DF = 1585, Sig. = .00*	0.02, -0.04, 0.02
T2	SC-SSR (4)	6.4	2.86	*22.76, DF = 20, Sig. = .30*	
T2	SC-STR (5)	8.6	3.70	*70.70, DF = 53, Sig. = 0.052*	

Time	Student Ratings Outcome Variable (N)	MI-PA-PID		Missing Value Analysis Little's MCAR test, χ^2 =	MAR ScMdiff Mean, Min., Max.
		Cases	Values		
T3	SDQ Total Problems (20)	20.1	2.67	2030.79, DF = 1785, Sig. = .00	
T3	SDQ Conduct (5)				
T3	SDQ Emotion (5)				
T3	SDQ Hyperactivity (5)				
T3	SDQ Peer Problems (5)				
T3	SDQ Prosocial (5)				
T3	SEARS-C-SF (12)				
T3	CESI-SFF (14)				
T3	SC-SSR (4)				
T3	SC-STR (5)				

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Outcome measures – teacher and student ratings

Table 5.
Means and standard deviation from T1 to T2 for teacher and student outcomes.

Student behavior outcomes - Teacher ratings	Experiment T1	Experiment T2	Control T1	Control T2	Group x Time Interaction	
	M (SD)	M (SD	M (SD)	M (SD)	F	p
Prosocial behavior	4.12 (.42)	3.99 (.79)	3.86 (.50)	3.92 (.44)	(1, 198) = .44	= .51
Motivation	4.08 (.41)	3.90 (.73)	3.73 (.49)	3.85 (.45)	(1, 198) = .46	= .18
Total problems in classroom last week	31.36 (7.84)	31.20 (8.04)	35.61 (9.90)	33.64 (9.16)	(1, 198) = 1.00	= .32
Moderate problems	17.86 (6.26)	17.74 (6.70)	20.92 (7.11)	19.73 (6.92)	(1, 198) = .30	= .59
Severe problems	13.51 (2.50)	13.46 (1.85)	14.69 (3.42)	13.91 (2.89)	(1, 198) = .80	= .38
Total problems in school environment last week	21.14 (4.70)	20.20 (4.38)	23.11 (5.92)	21.80 (7.10)	(1, 198) = .03	= .85
Moderate problems	11.91 (3.67)	11.17 (3.48)	12.87 (3.99)	12.11 (5.10)	(1, 198) = .00	= .99
Severe problems	9.23 (1.54)	9.03 (1.18)	10.24 (2.39)	9.69 (2.40)	(1, 198) = .00	= .99
	Experiment T1	Experiment T2	Control T1	Control T2	Group x Time Interaction	
Student behavior outcomes - Student ratings	M (SD)	M (SD	M (SD)	M (SD)	F	p
SDQ Total problems	10.60 (5.34)	9.84 (5.50)	11.40 (5.49)	10.75 (5.49)	(1, 2351) =.07	= .79
SDQ Conduct problems	1.63 (1.53)	1.48 (1.47)	1.85 (1.70)	1.75 (1.66)	(1, 2351) =.14	= .71
SDQ Emotional problems	3.12 (2.18)	2.88 (2.18)	3.31 (2.15)	3.16 (2.25)	(1, 2351) =.23	= .63
SDQ Hyperactivity	3.79 (2.10)	3.70 (2.28)	4.02 (2.10)	3.95 (2.37)	(1, 2351) =.02	= .90
SDQ Peer problems	2.04 (1.70)	1.77 (1.74)	2.21 (1.70)	1.88 (1.63)	(1, 2351) =.10	= .75
SDQ Prosocial	8.12 (1.66)	8.23 (1.62)	7.95 (1.69)	8.19 (1.62)	(1, 2351) = 1.02	= .75
SEARS-C-SF	21.71 (5.37)	22.10 (5.60)	21.05 (5.55)	22.22 (5.60)	(1, 2351) = 2.81	= .09
SC-STR (Teacher-Student relations)	11.76 (2.67)	12.21 (2.68)	11.55 (2.98)	11.90 (2.95)	(1, 2351) = .20	= .65
SC-SSR (Student-Student relations)	9.81 (2.36)	10.08 (2.10)	9.55 (2.32)	9.98 (2.14)	(1, 2351) = .72	= .40
CSEI-SFF (Coopersmith)	9.61 (2.89)	10.18 (2.79)	9.23 (2.95)	9.82 (3.02)	(1, 2351) =.02	= .90
OBVQ (Olweus Bully/Victim Questionnaire)	M (SD)	M (SD)	M (SD)	M (SD)	F	p
How often have You been bullied						
at school during last month?	1.33 (.84)	1.35 (.79)	1.48 (.96)	1.44 (.912)	(1, 2153) = .54	= .46
on the internet or on the mobile phone during the last months	1.11 (.37)	1.17 (.54)	1.17 (.47)	1.17 (.50)	(1, 2138) = 2.38	= .12
How often have you participated in bullying one or more students in school during the last months?						
in school during the last months?	1.12 (.40)	1.10 (.40)	1.14 (.50)	1.13 (.42)	(1, 2132) = .02	= .89
on the internet or on the mobile phone during the last months?	1.04 (.21)	1.05 (.30)	1.05 (.26)	1.05 (.24)	(1, 2114) = .15	= .70

Notes: Numbers are with imputed data except for OBVQ, * = $p \leq .05$, ** = $p \leq .01$