Supporting Information

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SI Text

N-Back Training Group (Experimental Group). The descriptive training data for the N-back group is given in Fig. S2. Scatterplots depicting the correlation between training gain and gain in Gf are given in Fig. S3, providing further evidence of the positive relationship between training and transfer success. Considering that both measures are difference scores, the correlation coefficients can be classified as very respectable.

Knowledge Training Group (Active Control Group). A sample screenshot of the active control task is presented in Fig. S1. The demographic and descriptive data (training sessions, training performance, as well as scores for each of the testing sessions) for the active control group are given in Table S1.

As stated in *Results*, there was no significant performance gain for the active control group as a whole ($t < 1$). Nevertheless, we had a considerable amount of variability in terms of percent correct responses (between 30% and 80% overall; mean = 57%). Similar to the procedure used with the experimental group, we calculated the individual performance gain by subtracting the number of correct responses in the first two sessions from the number of correct responses in the last two sessions, and divided the group at the median. Comparing participants with large and small training gains (Table S1), we found a significant group difference in the rate of correct responses in the last two sessions, where the group with the large training gain outperformed the group with the small training gain [$t(28) = 2.43$; $P < 0.05$]. In contrast, there were no significant group differences at the beginning of training (first two sessions; $t < 2$).

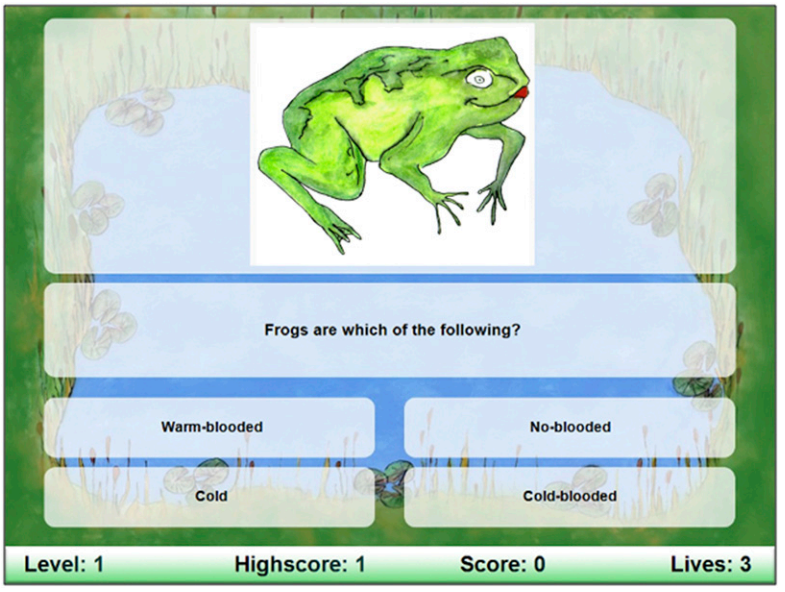

Fig. S1. Knowledge training task. Sample screenshot of a question related to the frog theme.

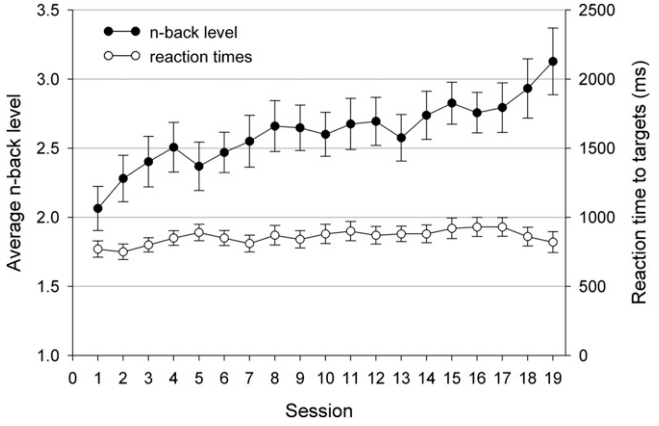

Fig. S2. N-back training data. Mean level of n (filled dots), as well as reaction times for targets (correct responses only; empty dots) as a function of training time. Error bars represent SEMs.

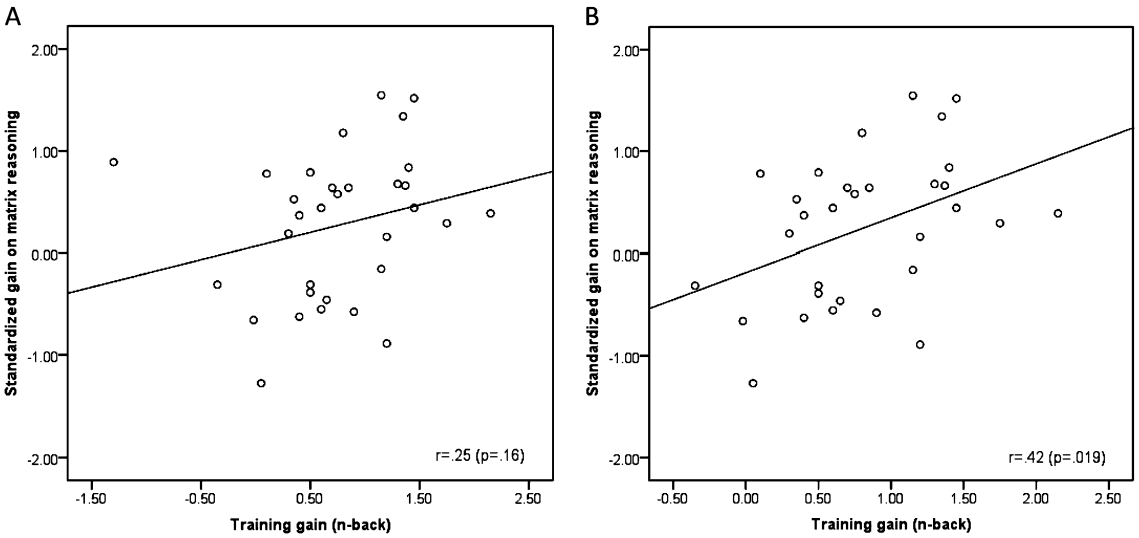

Fig. S3. The relationship between training and transfer. The *x* axis depicts the training gain (levels of n-back; difference between first and last two training sessions). The *y* axis depicts the standardized gain in matrix reasoning (standardized gain score for TONI and SPM). (*A*) Scatterplot and correlation coefficient including all data. (*B*) Scatterplot and correlation coefficient after exclusion of one outlier.

Table S1. Demographic and descriptive data for the active control group (performance subgroups)

Active control group		Age	Grade	No. of training sessions	% correct first two sessions	% correct last two sessions	SPM pre	SPM post	SPM FU	TONI pre	TONI post	TONI FU
Large training gain	Mean	8.73	3.47	19.20	55.27	66.07	14.20	15.47	15.23	20.93	21.27	24.08
	(SD)	(1.83)	(1.81)	(1.94)	(13.18)	(20.18)	(4.76)	(5.77)	(4.09)	(6.58)	(3.77)	(7.42)
Small training gain	Mean	8.93	3.80	19.60	63.00	51.53	16.47	16.93	17.86	20.80	23.73	25.50
	(SD)	(0.96)	(1.08)	(2.29)	(11.49)	(11.30)	(3.64)	(4.42)	(3.51)	(5.67)	(5.96)	(7.39)

Note: $n = 30$ (large training gain: $n = 15$, 4 girls; small training gain: $n = 15$; 11 girls). There were no significant group differences on any of the pretest measures or the demographic variables; however, the sex distribution was different. FU, follow-up test.