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GROUP GUIDANCE WITH DHUHA PRAYER REFLECTIVE JOURNALING TO FOSTER GROWTH MINDSET AMONG ISLAMIC SENIOR HIGH SCHOOL STUDENTS: A QUASI-EXPERIMENTAL STUDY

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Abstract

Many Indonesian students still regard ability as fixed, which discourages effort, feedback seeking, and persistence. Schools therefore need guidance-based approaches that fit their religious culture. This study examined whether group guidance combined with reflective journaling after dhuha prayer (a voluntary mid-morning Islamic prayer already practised at the research school) improved growth mindset among eleventh-grade students of an Islamic senior high school in Salatiga, Indonesia. A quasi-experimental non-equivalent control group design with pretest and posttest was used. From one social-science class (N = 35), ten volunteers formed the experimental group and 25 students formed the control group. The experimental group received four 45-minute group guidance sessions that moved from psychoeducation on growth versus fixed mindset, through journaling practice, to dhuha-based reflective and growth-mindset journaling. Growth mindset was measured with a 32-item, four-point psychological scale based on Dweck's theory (Cronbach's α = .882). The experimental group's mean score rose from 61.00 (SD = 9.57) to 107.50 (SD = 6.35), $t(9) = 21.67$, $p < .001$, whereas the control group changed by 0.88 points, $t(24) = 0.81$, $p = .429$. The groups differed significantly at posttest, and the difference remained after adjusting for pretest scores (adjusted difference = 39.54 points, 95% CI [33.57, 45.52]). Gains appeared in all five aspects of growth mindset. Because allocation was by self-selection, the groups differed at baseline, the sample was small, and outcomes were self-reported, the very large change should be read as promising preliminary evidence rather than a causal estimate. Replication with randomisation, larger samples, active comparison conditions, and follow-up is needed.

Keywords: growth mindset; group guidance; reflective journaling; dhuha prayer; Islamic senior high school; quasi-experiment

INTRODUCTION

Students' beliefs about the nature of ability shape how they approach learning. Dweck (2006) distinguished a growth mindset, the belief that intelligence, talent, and personal qualities can be developed through effort, good strategies, and learning from others, from a

fixed mindset, the belief that these qualities are largely innate and unchangeable. Students with a growth mindset tend to seek challenges, treat setbacks as information, persist when tasks are difficult, welcome constructive criticism, and draw inspiration from the success of others (Dweck, 2006; Yeager & Dweck, 2012). Students with a fixed mindset more often avoid difficulty to protect an image of competence, become defensive when criticised, and feel threatened by peers' achievements. Reviews of the field describe mindset as one of the most visible psychological constructs in educational practice, while also noting that its effects depend on context and implementation (Dweck & Yeager, 2019).

The empirical record on mindset interventions is encouraging but uneven. A brief online intervention teaching adolescents that the brain can grow with effort improved grades among lower-achieving students in a large United States sample (Paunesku et al., 2015). Two meta-analyses, however, found that the overall association between mindset and achievement, and the average effect of interventions, were weak, with larger benefits for specific subgroups such as students at academic risk (Sisk et al., 2018). A further systematic review and meta-analysis raised concerns about study quality, researcher allegiance, and the strength of evidence for academic outcomes (Macnamara & Burgoyne, 2023). These findings suggest that the field needs well-described, context-sensitive interventions evaluated with transparent designs, and that mindset itself, as a belief and attitude outcome, is a legitimate and measurable target even where academic effects are modest.

Mindset is a pressing concern in Indonesia. In the Programme for International Student Assessment (PISA) 2018, Indonesian 15-year-olds scored 371 in reading, 379 in mathematics, and 396 in science, well below the averages of the Organisation for Economic Co-operation and Development (OECD) countries (OECD, 2019; Pusat Penilaian Pendidikan, 2019). PISA does not measure growth mindset directly, so these results cannot be attributed to students' beliefs. They do, however, indicate how much room there is to strengthen learning dispositions. Students who regard success as predetermined would be expected to view mistakes negatively, to avoid further effort, and to respond defensively to feedback, which is the pattern described for fixed mindsets (Dweck, 2006) and one that can sustain low motivation. Indonesian schools, which typically combine academic instruction with character and religious education, are therefore a natural setting for guidance-based mindset work.

School counselling offers one route. Group guidance is a core service of Indonesian guidance and counselling (*bimbingan dan konseling*) programmes. It uses group dynamics, structured topics, and a trained leader to help members gain information, new understanding, and interpersonal skills (Corey, 2016; Hartanti, 2022). Small groups are generally considered to give each member enough attention while preserving diversity of views (Corey, 2016; Yalom & Leszcz, 2005). Evidence on group guidance for mindset-

related outcomes in Indonesia is still sparse. In a classroom action study in an Islamic integrated junior high school, discussion-based group guidance raised growth mindset indicators across two cycles (Barus et al., 2024), and related Indonesian studies have used group guidance to improve personal growth and learning independence (Alessandro et al., 2019; Nisa et al., 2022). Those studies relied on discussion or problem-solving techniques. They did not examine writing-based reflection or religious practice as a vehicle for change.

LITERATURE REVIEW

Two practices that are already available in many Islamic schools could supply such a vehicle. The first is dhuha prayer, a recommended (*sunnah*) prayer performed in the morning after the sun has risen (Ubaid Ibnu Abdillah, 2007). Many madrasahs schedule it as a collective habit before lessons. Indonesian school-based studies associate the habit with calmness, discipline, and good character (Hayati, 2017; Sari et al., 2024). Yet when the prayer is performed mainly because the school requires it, it can become a formality. In a preliminary interview conducted for this study, a student at the research school said that he prayed dhuha mostly at school as a routine, rarely did so at home, and often could not concentrate because his thoughts turned to lessons and the day's agenda. One interview cannot establish prevalence, but it illustrates a plausible gap between ritual performance and reflective engagement that a guidance intervention could address.

The second practice is reflective journaling, the regular written description and analysis of experience, together with the identification of feelings and thoughts and a plan for action (Boud et al., 1985; Moon, 2006). Writing about emotionally significant experiences has been linked to better well-being and health outcomes (Pennebaker & Beall, 1986), and reflective writing is widely used to develop metacognition and self-awareness in education (Moon, 2006). The evidence is not uniform: a study of first-year nursing students in Indonesia found no effect of reflective journaling on critical thinking, although participants valued it for processing experience (Hidayah et al., 2020). Journaling therefore appears to be a plausible, but not guaranteed, support for belief change.

Combining these elements is conceptually coherent. The calm following prayer may provide a settled moment in which students can write about effort, difficulty, feedback, and others' success, and the group sessions can turn private reflection into shared learning and mutual encouragement. Within social cognitive theory, observation of peers and feedback from others are central routes to changing beliefs and behaviour (Bandura, 1986). Within self-determination theory, internally endorsed goals support sustained effort (Deci & Ryan, 2000). Resilience, which Connor and Davidson (2003) operationalised as the capacity to cope with adversity, is closely related to treating challenge as an opportunity to learn. Social comparison theory predicts that others' success is a powerful but often threatening reference point (Festinger, 1954). Each of these perspectives maps onto one or more

aspects of growth mindset, which gives the intervention a theoretical rationale for working on the construct from several directions.

To our knowledge, no published study has tested group guidance that integrates reflective journaling with dhuha prayer to build growth mindset. This study addressed that gap with a school-based quasi-experiment at an Islamic senior high school in Salatiga. Two hypotheses were tested. First, within the experimental group, growth mindset scores would differ between pretest and posttest (H1). Second, at posttest, growth mindset would differ between the experimental and control groups (H2). We also examined the five aspects of growth mindset separately to see where changes were concentrated.

METHODS

The study used a quantitative quasi-experimental non-equivalent control group design with pretest and posttest (Shadish et al., 2002; Sugiyono, 2019). Quasi-experiments estimate intervention effects when random assignment is impractical, but the comparison groups may differ at the outset. Both groups completed the growth mindset scale before and after the intervention period. Only the experimental group received the four-session programme during that period. The control group served as a waiting-list comparison and received a different, delayed session after the posttest. The design is summarised as O_1 X O_2 for the experimental group and O_3 O_4 for the control group, where O is a measurement and X is the intervention (Sugiyono, 2019).

The study took place at a state Islamic senior high school in Salatiga, Central Java, Indonesia, which operates under the Ministry of Religious Affairs and has a school-wide dhuha prayer routine before lessons. The population was all eleventh-grade IPS students in the 2023/2024 academic year, 144 students in four classes. One class, XI IPS 1 (N = 35), was chosen by purposive sampling on the recommendation of the guidance and counseling counsellor and homeroom teacher, mainly because its timetable made a four-session programme feasible. The class represents about 24% of the population.

Within the class, allocation to condition followed students' stated willingness. Ten students who volunteered to join the programme formed the experimental group (convenience sampling), and the remaining 25 formed the control group. At pretest, eight experimental participants scored in the moderate category and two in the low category. Because group membership was determined by self-selection rather than randomisation, the groups cannot be assumed to be equivalent, and this is addressed in the analyses and limitations. Gender was recorded on the response form but was not analysed. Participation in the programme was voluntary, students were told that their answers would be kept confidential and would not influence their grades, and the school granted written research permission.

The intervention was delivered as a basic guidance service in the personal-development domain, structured according to the standard stages of group guidance: formation, transition, working stage, and evaluation and termination (Corey, 2016; Hartanti, 2022). Each session lasted about 45 minutes. Sessions followed written service implementation plans (*Rencana Pelaksanaan Layanan*/RPL) that were consulted with the school counsellor, who judged them suitable for use. All sessions opened with greetings and prayer, rapport building, an explanation of the aim, procedures, roles, and group principles (confidentiality, openness, voluntariness, and compliance with religious and social norms), a readiness check, and an ice-breaker. They closed with a summary, participants' impressions, a preview of the next session, and a closing prayer. Table 1 summarises the content of the working stage of each session.

Table 1. *Working-Stage Content of the Four Group Guidance Sessions*

Session	Aim	Main activities
1	Understand growth versus fixed mindset	Five animated videos on growth and fixed mindset shared through a messaging group; note-taking; sharing of main points; trigger questions; introduction of reflective journaling as a tool to move from fixed to growth mindset; facilitator feedback.
2	Understand own thoughts, feelings, and actions; practise journaling	Guided practice with a reflective journaling template; discussion of difficulties and solutions for beginners; assignment to write a dhuha reflective journal after morning prayer using a dhuha template.
3	Understand the spiritual meaning and benefits of dhuha; build self-reflection	Sharing of dhuha journals; analysis of positive and negative journaling experiences on a shared sheet; joint problem solving for negative experiences; assignment to write a growth mindset journal.
4	Apply positive affirmations to strengthen self-belief	Sharing of growth mindset journals; facilitator feedback; writing personal and general hopes on sticky notes (personal notes kept, general notes posted); review of lessons from all sessions; closing.

Note. Sessions were built on the stages of formation, transition, working, and evaluation/termination

Reflective journaling was introduced in Session 1 as a method, practised on neutral experience in Session 2, and then applied to dhuha prayer. The journaling tasks were framed around the core elements of reflective writing, namely describing an experience, analysing the feelings and thoughts it evoked, and planning action (Boud et al., 1985; Moon, 2006). The growth mindset journal assigned after Session 3 extended the same approach from the prayer experience to students' wider experiences of challenge, feedback, and effort. The journaling tasks were assigned between sessions and linked to students' dhuha prayer in line with the school routine, and the group sessions were used to share and analyse them. Compliance with the journaling assignments was not recorded in a way that allows a dose-response analysis.

Growth mindset was measured with a psychological scale developed by the first author on the basis of Dweck's (2006) theory and the five aspects described by Dweck as cited in Mudzakkir (2020): (a) belief that abilities can be developed, (b) challenges and

failure as means of self-development, (c) persistence in pursuing goals, (d) use of feedback, and (e) views of others' success. Each aspect was broken down into indicators, for example that intelligence can be improved, that talent can be trained, that difficulty is a vital part of development, that failure is important for learning, that determination and hard work lead to results, that mistakes are viewed positively, that criticism is an opportunity, that advice is used for learning, that others' achievements are a source of inspiration, and that the process behind others' success is respected. An initial pool of 40 statements, favourable and unfavourable, was answered on a four-point scale (strongly agree to strongly disagree). Favourable items were scored 4 to 1 and unfavourable items 1 to 4, so that higher scores indicate stronger growth mindset (Table 2).

Content validity was established through expert judgment by two lecturers in Islamic guidance and counselling, followed by consultation of the instrument and service plans with the school counsellor, who judged both suitable. The 40-item scale was then tried out with 70 respondents. Construct validity was examined with Pearson item–total correlations against the critical value of $r = .235$ ($df = 68$, two-tailed $\alpha = .05$). Eight items (numbers 2, 5, 23, 28, 29, 35, 36, and 40) fell below the criterion, leaving 32 valid items; item–total correlations of the retained items ranged from .240 to .430. Reliability for the 32 items was Cronbach's $\alpha = .882$ ($\alpha = .817$ for all 40 items; Cronbach, 1951). With 32 items scored 1–4, total scores range from 32 to 128. Following the equal-interval method (interval = (128 − 32)/4 = 24), scores were categorised as low (32–55), moderate (56–79), high (80–103), or very high (104–128). Aspect scores were computed as the sum of the retained items belonging to each aspect, and because the aspects contain different numbers of items, aspect-level raw scores are not comparable across aspects.

Table 2. Growth Mindset Scale: Aspects and Indicators

Aspect (Dweck, 2006; as cited in Mudzakkir, 2020)	**Indicators**
A1 Belief that abilities can be developed	Intellectual ability can be improved; talent can be trained; character can be improved
A2 Challenges and failure as means of self-development	Challenge is vital for development; failure is important for learning
A3 Persistence toward goals and aspirations	Determination brings results; hard work is the key to goals; mistakes viewed positively
A4 Use of feedback	Criticism is an opportunity to grow; advice is used for learning
A5 View of others' success	Others' achievements inspire; others' success is a chance to learn; the process behind it is valued

Note. Items were four-point Likert statements (strongly agree to strongly disagree); 32 valid items were retained from an initial 40. Total scores of 32–55, 56–79, 80–103, and 104–128 indicate low, moderate, high, and very high growth mindset, respectively.

After school permission was obtained, the pretest was administered to all 35 students in class on 23 July, with instructions on how to complete the scale. Participation in the guidance programme was then offered, and the 10 volunteers were assigned to the experimental condition. The four sessions were held between 25 July and 3 August. The

posttest was administered to both groups on 7 August, four days after the last session. On 10 August, the control group received a different guidance session as a waiting-list measure, so that all students benefited from the programme time.

Analyses were run in IBM SPSS Statistics 23, and all results reported here were recomputed from the participant-level pretest and posttest scores to check them against the original output. Descriptive statistics (mean, standard deviation, range) and category frequencies were computed. Normality of each group-by-time distribution was assessed with the Shapiro–Wilk test (Shapiro & Wilk, 1965), and homogeneity of variance with Levene's test (Levene, 1960). Hypothesis H1 was tested with a paired-samples *t* test in each group, and H2 with an independent-samples *t* test on posttest scores (with Welch's correction as a sensitivity check; Welch, 1947). Because the groups differed at baseline, we added three analyses that were not part of the original plan: an independent-samples *t* test on pretest-to-posttest change scores, an analysis of covariance (ANCOVA) on posttest scores with pretest as covariate (with a test of homogeneity of regression slopes), and a Wilcoxon signed-rank test as a nonparametric check. Effect sizes are reported as Hedges' g (Hedges, 1981; Lakens, 2013), and effects are interpreted against conventional benchmarks (Cohen, 1988). Aspect-level paired and independent *t* tests were run on the five aspect scores. The significance level was $\alpha = .05$, two-tailed.

RESULTS

Descriptive statistics

Table 3 presents the descriptive statistics. The experimental group's mean growth mindset score increased from 61.00 (*SD* = 9.57) at pretest to 107.50 (*SD* = 6.35) at posttest. The control group changed only slightly, from 81.24 (*SD* = 8.35) to 82.12 (*SD* = 8.58). The spread of experimental scores narrowed after the intervention, rather than widened. At pretest, the experimental group had markedly lower scores than the control group (a difference of about 20 points), which reflects the self-selection of students who volunteered for the programme.

Table 3. Descriptive Statistics of Growth Mindset Scores by Group and Time

Group / time	*n*	Min	Max	Median	*M*	*SD*
Experimental, pretest	10	44	75	62.5	61.00	9.57
Experimental, posttest	10	98	119	108.0	107.50	6.35
Control, pretest	25	59	100	81.0	81.24	8.35
Control, posttest	25	62	97	82.0	82.12	8.58

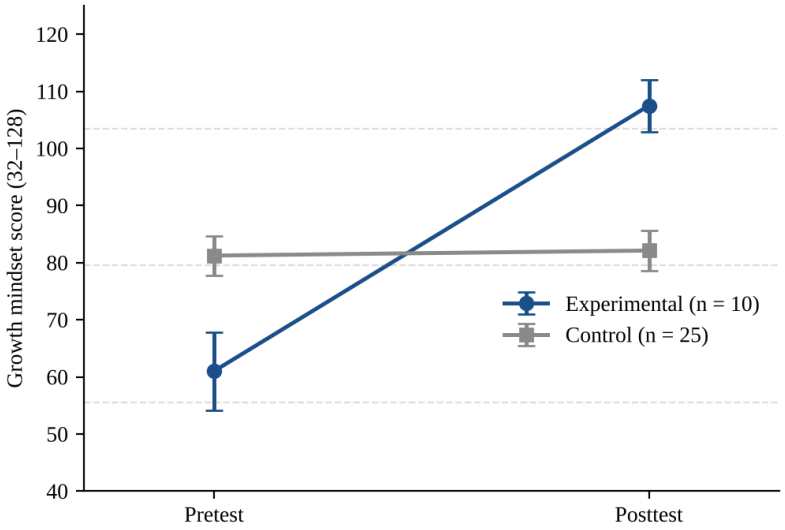
Note. Possible range = 32–128. Medians were recomputed from the participant-level scores.

The category distribution shifted accordingly (Table 4). At pretest, no experimental participant was in the high or very high category, whereas at posttest all ten were: six scored very high and four scored high. In the control group, 14 students were in the high category at pretest and 15 at posttest, with no student reaching the very high category at either time.

Individual change in the experimental group ranged from +41 to +59 points, and every participant improved. Control participants' change ranged from −13 to +13 points, with 11 students increasing, 8 decreasing, and 6 unchanged (Figure 2).

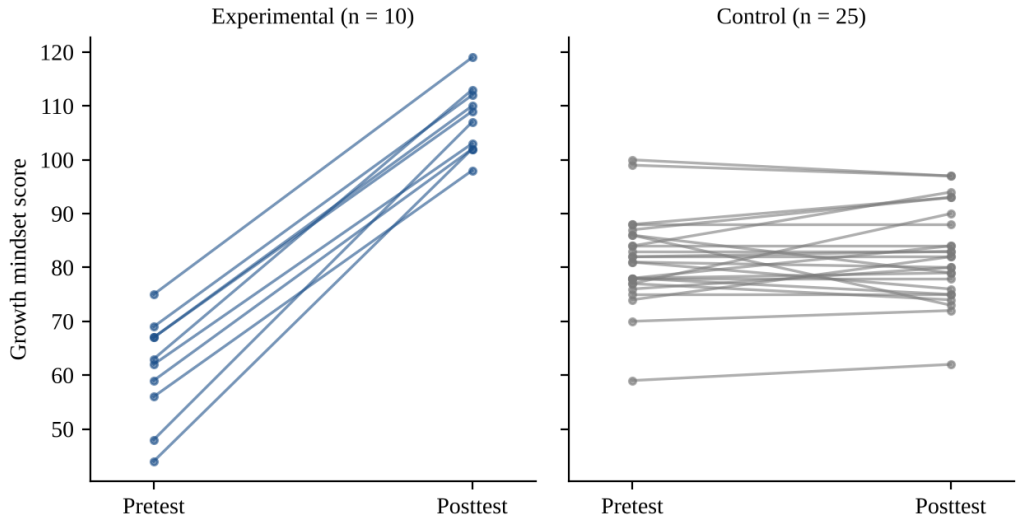
Table 4. Distribution of Participants across Growth Mindset Categories

Category (score)	Exp. pretest	Exp. posttest	Ctrl. pretest	Ctrl. posttest
Low (32–55)	2	0	0	0
Moderate (56–79)	8	0	11	10
High (80–103)	0	4	14	15
Very high (104–128)	0	6	0	0
Total	**10**	**10**	**25**	**25**



Note. Points are means; error bars are 95% confidence intervals. Dashed lines mark category boundaries (low < 56, moderate 56–79, high 80–103, very high ≥ 104).

Figure 1. Mean Growth Mindset Scores at Pretest and Posttest by Group



Note. Each line is one student.

Figure 2. Individual Pretest–Posttest Trajectories in the Experimental and Control Groups

Assumption checks

Shapiro–Wilk tests did not indicate departures from normality in any of the four distributions (Table 5), and Levene's test on posttest scores indicated homogeneous variances, $F(1, 33) = 0.70$, $p = .410$. Parametric tests were therefore appropriate. Normality tests have limited power with ten observations, so these results are reassuring rather than conclusive, and we also report nonparametric checks.

Table 5. Results of Normality and Homogeneity Tests

Test	Group / time	Statistic	*df*	*p*
Shapiro–Wilk	Experimental, pretest	0.956	10	.745
Shapiro–Wilk	Experimental, posttest	0.970	10	.889
Shapiro–Wilk	Control, pretest	0.939	25	.139
Shapiro–Wilk	Control, posttest	0.963	25	.484
Levene (based on mean)	Posttest, both groups	0.697	1, 33	.410

Within-group change (H1)

In the experimental group, growth mindset scores differed significantly between pretest and posttest, with a mean increase of 46.50 points ($SD = 6.79$), 95% CI [41.65, 51.36], $t(9) = 21.67$, $p < .001$ (Table 6). The Wilcoxon signed-rank test agreed, $p = .002$ (all ten students improved, which is the smallest possible exact p for $n = 10$). In the control group, the mean change of 0.88 points was not significant, $t(24) = 0.81$, $p = .429$, 95% CI [−1.38, 3.14]. H1 was therefore supported for the experimental group only.

Between-group differences (H2)

At pretest, the groups already differed significantly, $t(33) = -6.22$, $p < .001$ (Welch $t(14.8) = -5.86$, $p < .001$), with the experimental group about 20 points lower. At posttest, the experimental group scored higher than the control group by 25.38 points, $t(33) = 8.44$, $p < .001$, 95% CI [19.27, 31.50]; Welch's test gave the same conclusion, $t(22.5) = 9.61$, $p < .001$, Hedges' $g = 3.09$. H2 was therefore supported. Because this posttest difference combines a baseline gap and the change, we also compared change scores and adjusted for the pretest (Table 6). The mean gain was 45.62 points larger in the experimental group, 95% CI [40.45, 50.79], Welch $t(13.9) = 18.94$, $p < .001$. In an ANCOVA with pretest as covariate, the adjusted posttest difference was 39.54 points, 95% CI [33.57, 45.52], $t(32) = 13.48$, $p < .001$. The slopes of posttest on pretest did not differ detectably between groups (interaction $F(1, 31) = 2.43$, $p = .129$), although the groups overlapped only between about 59 and 75 pretest points, so the adjusted estimate relies partly on extrapolation.

Table 6. Hypothesis Tests for Overall Growth Mindset

Comparison	Estimate	95% CI	Test statistic	*p*
Exp. posttest − pretest (paired)	46.50	[41.65, 51.36]	$t(9) = 21.67$	< .001
Ctrl. posttest − pretest (paired)	0.88	[−1.38, 3.14]	$t(24) = 0.81$	.429
Pretest, Exp. − Ctrl. (independent)	−20.24	[−26.86, −13.62]	$t(33) = -6.22$	< .001
Posttest, Exp. − Ctrl. (independent)	25.38	[19.27, 31.50]	$t(33) = 8.44$	< .001
Change score, Exp. − Ctrl. (Welch)	45.62	[40.45, 50.79]	$t(13.9) = 18.94$	< .001
Adjusted posttest, Exp. − Ctrl. (ANCOVA)	39.54	[33.57, 45.52]	$t(32) = 13.48$	< .001

Note. Exp. = experimental group ($n = 10$); Ctrl. = control group ($n = 25$). Confidence intervals for the paired and pretest/posttest comparisons are from the original output; the change-score and ANCOVA estimates are additional analyses.

Aspect-level results

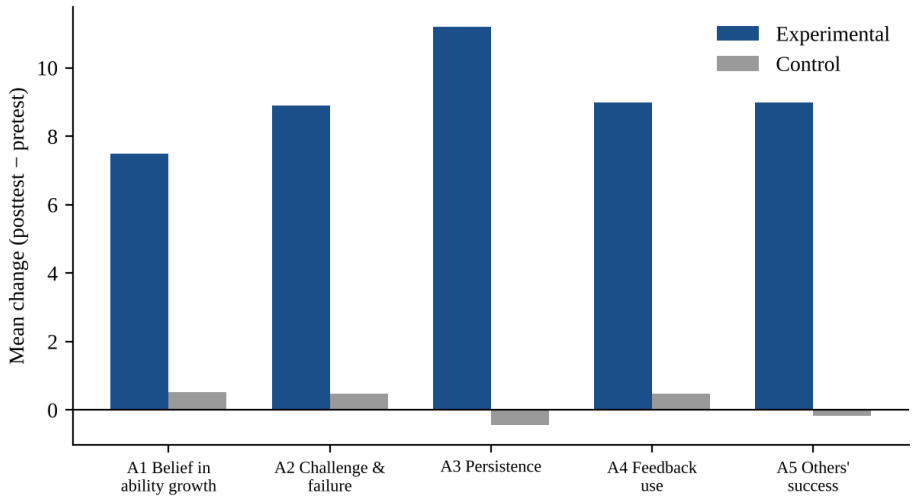
Table 7 reports changes in the five aspects. In the experimental group, every aspect increased significantly (all $p < .001$). The largest mean gain was in persistence (A3, +11.2 points), followed by use of feedback (A4, +9.0), view of others' success (A5, +9.0), challenges and failure (A2, +8.9), and belief in ability growth (A1, +7.5). Control-group aspect means changed by less than one point in either direction, with small decreases in A3 and A5. Posttest differences between the groups were significant for every aspect (A1 $t(33) = 4.65$; A2 8.96; A3 8.35; A4 7.10; A5 4.24; all $p < .001$), although these are posttest-only comparisons that do not take baseline gaps into account.

The paired *t* values were highest for use of feedback (A4, $t = 24.65$) and lowest for view of others' success (A5, $t = 7.12$). The size of a paired *t* depends on the variability of the change as well as its magnitude. Feedback showed an unusually consistent gain across participants (*SD* of change = 1.16), whereas change in A5 was more variable (*SD* = 4.00). The *t* ranking is therefore best read as an index of how uniformly students changed, not as a direct measure of how easily each aspect can be changed. Because aspects contain different numbers of items, comparing raw gains across aspects is also only indicative.

Table 7. Aspect-Level Results: Experimental Group Paired Tests and Control Group Change

Aspect	Exp. pre *M*	Exp. post *M*	Exp. gain	Paired *t*(9)	*p*	Ctrl. change
A1 Belief in ability growth	9.3	16.8	7.5	10.01	< .001	+0.52
A2 Challenge and failure	14.6	23.5	8.9	11.19	< .001	+0.48
A3 Persistence	17.5	28.7	11.2	12.56	< .001	−0.44
A4 Use of feedback	10.8	19.8	9.0	24.65	< .001	+0.48
A5 Others' success	9.8	18.8	9.0	7.12	< .001	−0.16

Note. Aspect scores are sums of the retained items in each aspect. Exp. = experimental; Ctrl. = control; Ctrl. change is the posttest minus pretest mean ($n = 25$). For one experimental participant, the pretest aspect scores in the source table summed to 10 points more than the total pretest score, so aspect-level pretest means (especially A5) should be interpreted cautiously until verified against the raw response sheets.



Note. Bars show posttest minus pretest means. Aspect scores are sums of different numbers of items, so bar heights are not directly comparable across aspects.

Figure 3. Mean Change in Each Growth Mindset Aspect by Group

DISCUSSION

Principal findings

This study asked whether group guidance that uses reflective journaling after dhuha prayer can strengthen growth mindset among students of an Islamic senior high school. The experimental group's scores rose by an average of 46.5 points, from the moderate range to the very high range, and all ten participants improved. The control group's scores did not change reliably. The difference held in every analysis we ran, including the posttest comparison, the comparison of change scores, and a pretest-adjusted comparison, and in all five aspects of the construct. In terms of the planned hypotheses, both were supported. The pattern is consistent with an earlier Indonesian study in which discussion-based group guidance improved growth mindset indicators in junior high school students (Barus et al., 2024), and it extends that work to a writing-based, religiously embedded format at the senior high level.

The size of the change, however, calls for caution. A gain of 46.5 points on a 96-point range, a standardised difference of about three standard deviations at posttest, and an improvement in every participant is far larger than the modest average effects reported for mindset interventions in the wider literature (Sisk et al., 2018; Macnamara & Burgoyne, 2023). It is also larger than what a single four-session programme would usually be expected to produce for a stable belief system. Several features of the study could contribute to an inflated estimate and are discussed below. We therefore interpret the results as strong preliminary evidence that students who took part reported substantially more growth-oriented beliefs after the programme, not as a precise estimate of the effect a school could expect.

How the intervention may have worked

The programme combined several ingredients that may each have contributed. First, Session 1 provided explicit psychoeducation about the difference between growth and fixed mindset. Instruction of this kind is the active component of many successful mindset interventions (Paunesku et al., 2015; Yeager & Dweck, 2012), and it may have changed how students answered items by teaching them the vocabulary and the socially desirable stance of the construct, as well as, possibly, their actual beliefs. Second, reflective journaling gave students a repeated, structured occasion to describe experience, identify thoughts and feelings, and set an action, which is what the reflective-practice literature proposes as the route to learning from experience (Boud et al., 1985; Moon, 2006). Third, the group format allowed students to hear peers' challenges and solutions, which, in social cognitive terms, provides models and feedback that shape self-beliefs (Bandura, 1986).

The role of dhuha prayer is more difficult to separate. The theoretical argument is that a calm, intentional prayer moment gives students a settled state from which to reflect, and that connecting prayer to learning and effort lends the exercise meaning within students' own value system. This reasoning is consistent with reports that regular dhuha practice is associated with calmness and discipline among Indonesian students (Hayati, 2017; Sari et al., 2024), and with the idea that internally endorsed goals support effort (Deci & Ryan, 2000). The present design, however, cannot show that the prayer added anything beyond the group guidance and journaling. A comparison group that received the same journaling programme without the prayer link, or a prayer-only group, would be needed to test that claim. Until then, the combined package, not the prayer component, is the unit of evidence.

Differences across aspects

Gains appeared in all five aspects, which suggests that the programme did not work through a narrow set of items. In raw terms, the largest gain was in persistence (A3), and the smallest was in belief that abilities can be developed (A1). A plausible reading is that the journaling activities, which repeatedly asked students to describe effort, obstacles, and plans, were more directly connected to persistence than to the abstract belief about malleability. Control-group means in A3 and A5 declined slightly, in line with the idea that routine academic pressure and competitive classroom climates might erode persistence and comparison-related attitudes in the absence of support, although these small movements are within the range of noise.

The highest paired *t* was found for feedback use. Rather than interpreting this as proof that feedback is the most malleable aspect, we note that the change in A4 was the most uniform across students. This pattern fits the idea that using feedback is a relatively concrete skill that group sessions model directly: students saw facilitators and peers respond to their journals and could rehearse accepting such responses (Bandura, 1986). The smaller and more variable change in A5, the view of others' success, fits social

comparison theory, which holds that comparing oneself with others is a pervasive and partly automatic evaluative process that is hard to override (Festinger, 1954). Where change did occur in A5, it may reflect deliberate reframing in group discussion rather than a durable change in comparison tendencies. Challenge and failure (A2) and belief in malleability (A1) connect to resilience and to core mindset beliefs (Connor & Davidson, 2003; Dweck, 2006), which are often thought to require more sustained experience to shift. These interpretations are post hoc, the aspects have unequal item counts, and the aspect data contain a minor inconsistency noted in Table 8, so they should be treated as hypotheses for future work.

Implications for school counselling

For guidance and counselling teachers in Islamic schools, the study suggests that a short, structured programme can be built from elements that schools already have, namely a collective dhuha routine, group guidance time, and simple journaling templates, without requiring new resources. The sequence used here, which moved from knowledge to guided practice, to application in a familiar religious routine, to a final affirmation and hope-writing activity, is easy to describe and to adapt. The programme also offers a way to make a ritual that students may experience as obligatory more reflective, provided that participation in the journaling remains voluntary and the religious element respects students' own practice. Counsellors should treat the evidence as promising rather than established and should, where possible, collect their own pre- and post-programme data and follow-up measures when adopting the approach.

Limitations

Several limitations qualify the conclusions. First, assignment was based on volunteering rather than randomisation, so selection bias is likely. Volunteers may have been more motivated, more open to reflection, or more responsive to the programme, and the groups differed substantially at baseline. The experimental group started about 20 points lower, which leaves more room for improvement and creates a risk of regression to the mean, the tendency of extreme initial scores to move toward the average on re-measurement (Barnett et al., 2005). Regression alone cannot plausibly explain a gain of this size in all ten participants, particularly when control students with low pretest scores (≤ 75) improved by only about three points on average, but it may account for part of it. Second, the sample was small, with 10 participants in the experimental group in a single class. Small samples reduce the stability of estimates, and statistically significant effects from small studies tend to be overestimated (Button et al., 2013). Generalisation beyond this class, school, and programme is not warranted.

Third, the outcome was a self-report scale completed by students who knew they were part of a programme about mindset. Participants in the experimental group had just been taught what a growth mindset is and may have responded in line with what they

believed was expected (demand characteristics), whereas the control group had not. The scale measures stated beliefs rather than behaviour, effort, or achievement, and it was not accompanied by observer ratings, grades, or behavioural indicators. Fourth, the control group did not receive an attention-matched activity, so we cannot separate the specific contribution of journaling or prayer from non-specific effects such as extra attention, group belonging, and time out of the regular routine. The same limitation applies to attributing effects to dhuha prayer in particular. Fifth, the follow-up was only four days after the last session, so durability is unknown. Sixth, the scale was newly developed, and although its reliability was good, the item–total correlations of several retained items were close to the critical value (about .25), only content and item-level construct validity were examined, and no factor structure was tested. Finally, the nonrandom, nonequivalent design means that the confidence intervals reported describe sampling uncertainty under the model assumptions, not the full uncertainty about causation. Aspect-level data also contained a small recording inconsistency that should be checked against raw response forms.

Directions for future research

Future studies should use random assignment of students (or of classes or groups) to conditions, larger samples from several classes and schools, and an active comparison condition, such as group guidance with journaling but without the prayer link, discussion-only group guidance, and a no-intervention control. Pre-registered hypotheses, blinded outcome assessment where possible, and measures beyond self-report, such as teacher ratings, persistence on difficult tasks, response to feedback in a controlled task, and grades, would help reduce bias. Follow-up measurement after several weeks and months is needed to establish whether changes persist. Process data, including journal content, attendance, and the quality of group interaction, could clarify mechanisms and dose-response, and interviews with students could show how they experienced the link between prayer and reflection. Given the uncertain average effects of mindset interventions in the international literature (Sisk et al., 2018; Macnamara & Burgoyne, 2023), researchers should also examine for whom and under what conditions the approach works.

CONCLUSIONS

In this quasi-experimental study at an Islamic senior high school in Salatiga, students who took part in four group guidance sessions that used reflective journaling after dhuha prayer reported markedly higher growth mindset after the programme, whereas control students did not change. The difference was statistically significant in the overall score and in all five aspects of growth mindset, and it persisted in analyses that adjusted for baseline differences. The findings suggest that guidance-based programmes anchored in practices already familiar in Islamic schools can be a feasible way to promote growth-oriented beliefs. However, self-selection into the programme, baseline nonequivalence, a very small

experimental group, reliance on self-report, and the absence of an active comparison and of follow-up mean that the size of the effect is likely to be overestimated and that the specific contribution of dhuha prayer remains untested. The programme should be evaluated further in randomised, larger, and longer studies before conclusions are drawn about its effectiveness at scale.

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