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NEEDS ANALYSIS AND INITIAL EXPERT VALIDATION OF A COMPASSIONATE TEACHING-BASED GASING DIGITAL MODULE FOR GRADE IV MULTIPLICATION

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ABSTRACT

Studies of the GASING (Gampang, Asyik, dan Menyenangkan) method report gains in multiplication without specifying how students' emotional needs are addressed at each learning stage. This study reports the Analysis stage of an ADDIE development project and the initial expert validation of a compassionate teaching-based GASING digital module on whole-number multiplication for Grade IV. A qualitative dominant descriptive design was used in one class (one teacher, 18 students) in Central Kalimantan, Indonesia, drawing on curriculum documents, a semi-structured teacher interview, a classroom observation, and the teacher's score records. Qualitative data were analyzed with the interactive model of data reduction, display, and conclusion drawing; gaps between expected and actual conditions were identified and prioritized; and quantitative data were summarized descriptively. The highest-priority gaps were representational (the curriculum requires concrete, pictorial, and symbolic work, whereas the observed lesson went directly to symbols) and contextual (no Wi-Fi, one laptop, shared phones); initial scores clustered just below the school criterion (mean 62.2, SD 10.9), and few students dared to attempt tasks without fear of being wrong. Five design requirements were derived, separating data-driven from theory-driven ones, and compassion, defined as noticing students' difficulty, feeling concern, and acting to relieve it, was assigned a function at each GASING stage. In an initial validation by one subject-matter expert, one media expert, and two GASING trainers, the module was judged feasible with revision (75.0%, 87.5%, 94.1%, and 92.6%). These judgments are preliminary; the module's practicality and effectiveness were not tested.

Keywords: Compassionate Teaching, Digital Module, Expert Validation, GASING, Needs Analysis.

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PRELIMINARY

Multiplication underpins later mathematics, yet it is often taught through memorization and drills, so students may recall facts without grasping their meaning (Sari et al., 2026). Understanding multiplication involves several models, namely equal groups, arrays, and repeated addition, before fact fluency is built (Haylock & Cockburn, 2003), and

sequences that move from concrete to representational to abstract work support achievement (Bruner, 1966; Ebner et al., 2025), especially when concrete materials are explicitly linked to symbols (Kokkonen & Schalk, 2021; Danişman et al., 2026; Qolbu et al., 2026). Affective factors also matter: mathematics anxiety is consistently associated with lower achievement (Barroso et al., 2021) and lowers primary students' motivation and confidence (Tanjung et al., 2024).

GASING mathematics (*Gampang, ASyIk, dan menyenaNGkan*; Easy, Fun, and Enjoyable), developed by Yohanes Surya, applies such a sequence: each topic moves from concrete objects to symbols and then to mental calculation (*mencongak*), and mastery of one critical point is a prerequisite for the next (Surya, 2013; Prahmana & Suwasti, 2014). For multiplication, the critical points are the meaning of multiplication as equal groups, the basic facts learned in the GASING order (× 1, × 10, × 9, × 2, × 5, squares, × 3, × 4, × 8, × 7, × 6), and two-digit by one-digit multiplication using tens and ones, with addition fluency as the prerequisite. GASING studies report encouraging gains in mastery, outcomes, and speed (Damopolii et al., 2024; Tarusu & Pokaton, 2024; Marbun et al., 2024; Hamamah et al., 2026; Sari et al., 2026) but they are small-scale school-based studies, such as classroom action research (Damopolii et al., 2024), whose designs limit causal conclusions; one study concerned fractions rather than multiplication (Putri & Sundi, 2025) and a review of 31 articles noted mainly benefits for basic concepts and motivation (Adam et al., 2026). The evidence is therefore promising rather than conclusive.

In this study, compassionate teaching is defined as the teacher's, and by extension the learning material's, noticing of a student's difficulty or distress, feeling concern for it, and acting to relieve it in ways that support learning (Kanov et al., 2004; Jazaieri, 2018). It is a teacher behavior directed at students, which distinguishes it from empathy (feeling with another), from self-compassion, and from compassion-based social–emotional learning programs that teach students compassion as separate content (Xavier et al., 2023; Frazier et al., 2025). Its indicators are observable actions: noticing students' feelings, responding to errors without blame, giving informative and encouraging feedback, offering further attempts, and organizing peer help. Schools are also expected to cultivate character, and compassion can be integrated into ordinary lessons rather than taught separately (Muhajir et al., 2024).

Three bodies of work bear on this design problem but have developed separately: GASING studies focus on cognitive gains and treat affect mainly as the motivation that games produce (Adam et al., 2026); digital-module studies emphasize interactivity and

validity (Mirayanti et al., 2024; Safitri & Dafit, 2025; Mardiyanti & Gunawan, 2026; Nurendang et al., 2026; Indiani et al., 2026) but are not organized around the stage sequence of a particular arithmetic method (Tartillah et al., 2025); and compassion programs are separate from the learning of a specific mathematical concept. The rationale for combining GASING and compassion is theoretical rather than a matter of scarcity. GASING addresses the cognitive pathway, ordering content by critical points; mastery of each point, however, requires repeated attempts in which errors are unavoidable, and worry about errors consumes the working memory needed for calculation (Ashcraft, 2002). Compassionate teaching addresses this affective pathway, because a supportive relationship and classroom climate enable students to keep attempting (Jennings & Greenberg, 2009). The contribution of this study is therefore to specify which compassion function operates at each GASING stage and how it can be realized in an offline digital module, grounded in a needs analysis of a low-resource school. Media-development studies seldom report such an analysis (Fitriani et al., 2026).

Following the view of needs as gaps between what is and what should be (Witkin & Altschuld, 1995), this study aimed to (1) identify and prioritize the gaps between expected and actual conditions in the curriculum and content, the teacher and context, and the students for whole-number multiplication in one Grade IV class; (2) derive design requirements from these gaps, distinguishing data-driven from theory-driven requirements; and (3) describe the initial judgments of subject-matter, media, and pedagogical experts on the module developed from these requirements.

METHODS

This study reports the Analysis stage, and the initial expert validation at the Development stage, of a design and development study following the ADDIE model (Branch, 2009). The Analysis stage used a qualitative-dominant descriptive needs assessment in which qualitative data (interview and observation) were complemented by descriptive statistics (observation scores and score records), and it covered the three standard components of learner, context, and task/content analysis. Needs were defined as gaps between expected conditions (from the curriculum and the literature) and actual conditions (from the field data) and were prioritized by their size, the number of sources supporting them, and their relevance to the module (Witkin & Altschuld, 1995). The study took place at SDN Teluk Kanduri, Kahayan Hulu Utara District, Gunung Mas Regency, Central Kalimantan, from February to March 2026. The participants were the Grade IV homeroom

teacher and the 18 students of the class. The class was selected purposively because it was about to study whole-number multiplication, in a rural school with limited digital infrastructure; the role of students' home language was not examined. The students were observed but not interviewed or surveyed, so their media preferences and emotional needs are reported as documented characteristics and researchers' inferences.

Data were collected on 2 February 2026. First, a semi-structured interview with the teacher used a guide of 24 open-ended questions (Supplementary File 1) covering six aspects: learning conditions and difficulties, materials and media, infrastructure and technology, character values and compassionate teaching, digital-module needs, and learning outcomes. The aspects were derived from the GASING stages, the indicators of compassionate teaching, and criteria for digital materials; the guide was reviewed by the study's two supervisors for relevance, clarity, and wording, but no content-validity index or readability trial was computed. The two-hour interview was audio-recorded with consent and transcribed verbatim. Second, one mathematics lesson (07.30–09.30; 18 students) was observed by one observer with a structured sheet covering facilities (availability and use), the teacher's readiness and practice (10 items), the students' readiness (9 items), and learning difficulties (2 items), each rated on a four-point scale, with field notes; percentages were categorized as very good (81–100), good (61–80), fair (41–60), poor (21–40), or very poor (≤ 20). Third, a document study covered the curriculum, the school inventory, the lesson plan, and the score list.

Students' initial achievement was taken from the teacher's score records for the multiplication topic (document study). These records come from the teacher's own classroom assessment; its items, scoring, and psychometric quality were not analyzed in this study, so the scores indicate the general level of the class rather than specific misconceptions. The school's learning-objective achievement criterion (KKTP) of 65 is used only as a reference point, not as a judgment of mastery.

The module was developed from the design requirements. The first version was reviewed by a subject-matter expert (a professor of mathematics education) on 10 March 2026 and a media expert (a lecturer holding a master's degree in education) on 11 March 2026, each rating ten statements on a four-point scale (1 = not feasible to 4 = feasible). The media instrument was adapted from Leacock and Nesbit (2007) and Mardiyanti and Gunawan (2026), and the subject-matter instrument from Sulistiawati (2019) and Tim Gakko Tosho (2021) (instruments in Supplementary File 2). After revision, two GASING trainers with expertise in mathematics reviewed the module as pedagogical experts on 23 March

2026, rating 17 statements on the same scale. The subject-matter and media experts work at the researchers' institution and the pedagogical experts train the method under review, which may bias their judgments; with one expert per field, inter-rater agreement (e.g., Aiken's *V*) could not be computed. Ratings were expressed as percentages of the maximum score and categorized as very valid (85.01–100), valid (70.01–85.00), fairly valid (50.01–70.00), or not valid (≤ 50.00); each expert also gave an overall conclusion (feasible without revision, with revision, or not feasible).

The study was conducted under a research permit from the university and with the principal's written agreement. Parental consent and ethics-committee review were not sought, which is acknowledged as a limitation. Students are reported only by codes, and no identifying data are published. Qualitative data were analyzed following Miles et al. (2014). In data reduction, the transcript and field notes were divided into meaningful segments and coded descriptively by the researcher; in data display, codes were grouped into categories and three themes (cognitive, affective, and contextual) in a matrix (Table 1); in conclusion drawing, each theme was compared across sources, and convergent findings were treated as more certain than single-source ones. Codes and interpretations were discussed with the supervisors (peer debriefing), and the transcripts, code lists, and matrices are kept as an audit trail. The interview summary was checked with the teacher (member checking). Numerical data were summarized with the mean, SD, median, range, and distribution.

Table 1. **Thematic Matrix of the Interview and Observation Data**

Aspect	Codes	Representative evidence	Theme
Learning conditions and difficulties	Difficulty with meaning and word problems; symbol-first explanation	I: difficulty with the concept and word problems; O: symbol-first, no manipulatives	Cognitive
Materials and media	Textbook and whiteboard; occasional videos; little variation	I: textbook, whiteboard, videos about three times a week; O: little variation (E1–E5: 50.0%)	Cognitive / contextual
Infrastructure and technology	Unstable connection; shared devices; teacher needs help with devices	I: devices used occasionally, unstable internet, little training; O: no Wi-Fi, one laptop, ten phones	Contextual
Character values and compassionate teaching	Peer helping; no mocking; caring teacher	I: peers explain to classmates, no mocking; O: caring and adaptation (E6–E10: 75.0%)	Affective (resource)
Digital-module needs	Staged explanation; supportive feedback; teacher guide; offline format	I: staged explanations, non-judgmental feedback, a guide, offline format	Cognitive / affective / contextual
Learning outcomes	Understanding over scores; fear of wrong answers	I: understanding matters most; students fear wrong answers; O: few dared to try	Affective

Note. I = interview (teacher's statements condensed from the transcript and translated from Indonesian); O = observation.

RESULT AND DISCUSSION

Research Results

Curriculum and Content

The Phase B learning outcomes in force during the study (Kemendikdasmen, 2025a) expect students to perform and solve problems involving multiplication and division of whole numbers up to 100 with the help of concrete objects, pictures, and symbols. Task analysis of the learning outcomes and the teacher's lesson plan yielded the following prerequisite chain: addition fluency, multiplication as equal groups and repeated addition, pictures to number sentences, basic facts, two-digit by one-digit multiplication using place value, solving and composing word problems with products up to 100. The curriculum's three representations and the GASING stages do not correspond one to one: the concrete stage matches concrete objects; the GASING abstract stage covers both pictures and symbols; and mental calculation is a GASING addition aimed at fact fluency rather than an explicit curriculum requirement. The graduate profile (Kemendikdasmen, 2025b) includes collaboration, described as caring, sharing, and cooperating. Linking these values to compassionate teaching is the researchers' conceptual choice, not a need stated in the documents.

Teacher and Context

The teacher (ten years of experience, two in Grade IV) identified understanding the meaning of multiplication and solving word problems as the main difficulties. Students were described as less enthusiastic and worried about giving wrong answers. Teaching relies on textbooks and the whiteboard, with YouTube videos about three times a week when pictures are needed; the internet connection is unstable and digital-media training is limited. Students already work in pairs or groups, with those who understand explaining to classmates, and the teacher guides them not to mock peers. For the module, the teacher asked for staged explanations with illustrations, examples, exercises, and evaluation; supportive language and non-judgmental feedback; room to add exercises for struggling students; a guide covering preparation, the GASING steps, evaluation, and compassionate teaching; and an offline format, because the internet connection is unreliable. About half an hour per lesson was considered realistic for compassion-related activities.

The observation confirmed the conditions behind these needs. The teacher's readiness and practice scored 25 of 40 (62.5%, good) but unevenly: practice and media use scored 10 of 20 (50.0%, fair), because the explanation went directly to symbols, examples were not varied, and the teacher needed help to operate devices, whereas caring and

adaptation scored 15 of 20 (75.0%, good). The school had one laptop, a projector or TV, ten mobile phones students could use, adequate electricity, and good cellular signal, but no Wi-Fi, technician, or multiplication manipulatives; devices were rarely used, rules for their use were only verbal, and sockets were far from the classroom. The module would therefore be displayed by the teacher through the projector and used by small groups on shared phones, so immediate feedback would reach groups rather than individual students.

Students

The recorded scores ranged from 30 to 75 (mean 62.2, SD 10.9, median 62.5). Their distribution was 30 (one student), 50 (two), 60 (six), 65 (two), 70 (five), and 75 (two): nine students reached 65, six of the nine below it scored 60, and only three scored 50 or less, so most students were close to the criterion and none scored 80 or above. In the observation, students' readiness scored 23 of 36 (63.9%, good): most paid attention, completed routine exercises correctly, and cooperated, but only a few could operate a device without help, showed enthusiasm, or dared to try without fear of being wrong, and they answered only when called on. Learning difficulties scored 4 of 8 (50.0%): a few memorized facts without understanding, and a few struggled with column multiplication. Field notes showed that students became active in group work and with manipulatives. Low enthusiasm and fear of errors were thus reported and observed, whereas mathematics anxiety was not measured.

Needs Gaps and Design Requirements

Table 2 summarizes the gaps, their priority, the resulting design requirements, and the confidence of each inference. Requirements (1) and (5) are data-driven, (4) is partly data-driven, and (2) and (3) follow from the GASING and compassion framework chosen a priori; this choice is a risk of confirmation bias, discussed under Limitations. Each requirement is stated with an indicator so that it can be checked when the product is evaluated.

Table 2. Needs Gaps, Priorities, and Design Requirements

Area	Expected vs actual (sources)	Priority	Design requirement and indicator (basis)	Confidence
Content	Concrete–pictorial–symbolic work required (D) vs symbol-first teaching, no manipulatives (I, O)	High	(1) Align with Phase B and the task chain; each objective covered by module activities and evaluation items (data)	High
Context	Digital module expected vs no Wi-Fi, one laptop, shared phones, limited training (I, O, D)	High	(5) Runs offline in a browser; usage guide; usable via projector and group phones (data)	High

Area	Expected vs actual (sources)	Priority	Design requirement and indicator (basis)	Confidence
Students: cognitive	Meaning and word problems vs scores clustered just below 65; difficulty with word problems (R, I, O)	High	(2) Follow the GASING critical points from equal groups to mental calculation, with word problems in practice (theory + data)	Moderate
Students: affective	Active participation vs few dared to try without fear of being wrong; low enthusiasm (I, O)	Medium	(3) Assign a compassion function to each stage (Table 3) (theory)	Moderate
Feedback and engagement	Informative feedback expected vs uniform exercises and limited feedback (O); teacher's request (I)	Medium	(4) Every exercise states correctness, the correct result, and a retry option; illustrations close to students' lives (data + theory)	Moderate

Note. D = documents; I = interview; O = observation; R = score records. Priority reflects the size of the gap, the number of converging sources, and relevance to the module. Confidence is high when two or more sources converge.

Module Design and Compassion across the GASING Stages

The module is a single offline HTML file opened in a browser on a laptop, tablet, or phone. It contains eight sections (cover, introduction, concept of multiplication, basic multiplication, two-digit × one-digit, summary, practice, and mental calculation) and a Teacher Mode for editing exercises (Figure 1). Table 3 shows how requirement (3) was realized. The feedback principle combines information and support: each answer is marked correct or incorrect, the correct result or the step to revisit is shown, and the message encourages a further attempt (e.g., "Not quite yet. Answer: …"; below 70%: "That's okay. Read the material again and try once more"); generic praise without information is avoided (Hattie & Timperley, 2007).

Table 3. **Compassion Functions and Module Features at Each GASING Stage**

Stage	Mathematical focus	Compassion function	Module feature or teacher action
Opening	Readiness to learn	Noticing students' feelings and responding	Feelings window with a calming or encouraging message; personal greeting
Concrete	Equal groups (e.g., 4 boxes of 3 apples)	Safe exploration; cooperative building and checking of equal groups	Replayable virtual manipulatives (boxes, apples, tens and ones cards); pairs build groups and check each other; teacher demonstration with real objects
Abstract	Pictures to number sentences; basic facts in GASING order; tens and ones cards	Peer explanation; errors treated as information	A peer explains the step; feedback states correctness and the correct result, with an invitation to retry
Mental calculation	Fluency without written steps	Lowering threat through self-pacing and effort appreciation	Unlimited retries; stars and effort messages; at least 70% on exercises to proceed, otherwise review; graded items

Note. * Added after expert review, as was the usage guide. Teacher Mode lets the teacher adapt exercises across stages. The compassion functions are design propositions; their effects were not tested.

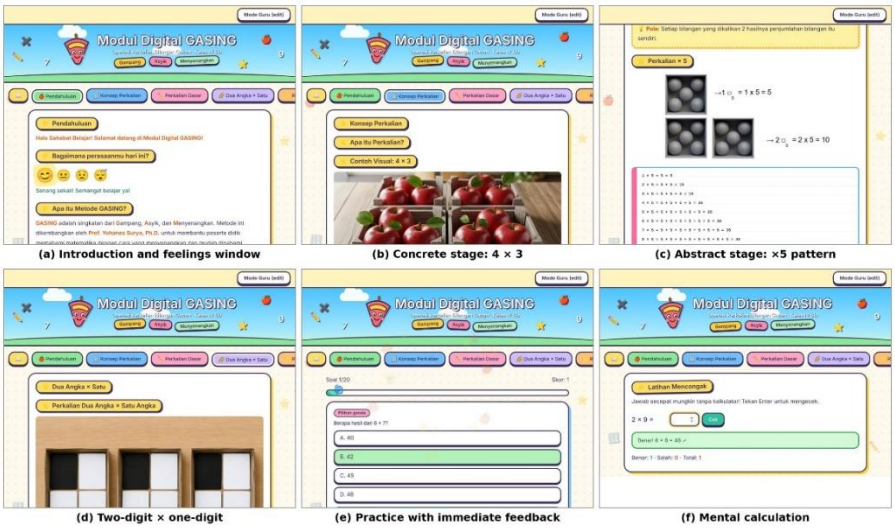

Figure 1. Screenshots of the Developed Module

Initial Expert Validation

The media expert gave 35 of 40 (87.5%, very valid); the only rating of 2 concerned the usage instructions (within interactivity and navigation). The subject-matter expert gave 30 of 40 (75.0%, valid), rating all ten statements 3. The pedagogical experts gave 64 and 63 of 68 (94.1% and 92.6%, very valid): both gave the maximum on learning objectives, the GASING approach, and construct coherence, and both rated 3 some statements on compassionate teaching (diverse needs, a safe climate) and on evaluation and feedback. All four experts concluded that the module was feasible with revision (Table 4).

Table 4. Expert Validation Ratings for the Developed Module

Aspect	Item ratings	Score	Maximum	%
Media expert (first version)				
Display design	3, 4	7	8	87.5
Interactivity and navigation	3, 2[a]	5	8	62.5
Visual and audio quality	3, 4	7	8	87.5
Consistency and readability	4, 4	8	8	100.0
Suitability of the digital platform	4, 4	8	8	100.0
Total		**35**	**40**	**87.5**
Subject-matter expert (first version)				
Each of the five aspects	3, 3	6	8	75.0
Total		**30**	**40**	**75.0**
Pedagogical experts (revised version), V1 / V2				
Learning objectives	4,4,4 / 4,4,4	12 / 12	12	100 / 100
GASING approach	4,4,4 / 4,4,4	12 / 12	12	100 / 100
Fit with cognitive development	4,4,4 / 4,4,3	12 / 11	12	100 / 91.7
Compassionate teaching	4,3,3 / 4,3,3	10 / 10	12	83.3 / 83.3

Aspect	Item ratings	Score	Maximum	%
Construct coherence	4,4 / 4,4	8 / 8	8	100 / 100
Evaluation and feedback	4,3,3 / 4,3,3	10 / 10	12	83.3 / 83.3
Total		**64 / 63**	**68**	**94.1 / 92.6**

Note. Four-point scale (1 = not feasible to 4 = feasible). [a] Rating of 2 on the usage-instructions item. Pedagogical item ratings are reconstructed from aspect totals, as every item was rated 3 or 4. The subject-matter expert rated all ten items 3, so the five aspects are combined.

Table 5 lists each suggestion, the researchers' decision, and the reason, and Figure 2 shows examples of the revisions. Two suggestions conflicted with the needs analysis. Removing the properties of multiplication was accepted because they are not among the learning objectives, although commutativity can support mental calculation and should be reconsidered. Replacing the word problems was accepted in modified form: instead of being dropped, word problems were moved to the practice section as scored fill-in items that require analysis, because word problems were a main difficulty. The multiplication-by-10 misconception found by a pedagogical expert had not been flagged by the subject-matter expert, which shows the limits of a single-expert content review.

Table 5. Expert Suggestions, Decisions, and Reasons

Expert	Suggestion	Decision	Reason and evidence
Subject matter	Describe the GASING process from concrete to mental calculation	Accepted	Strengthens requirement (2); description expanded
Subject matter	Remove the properties of multiplication	Accepted	Not among the objectives; to be reconsidered for mental calculation
Subject matter	Replace word problems with items requiring analysis	Modified	Word problems kept as scored fill-in analysis items; practice grew from 8 to 20 items (Figure 2a)
Media	Add a usage guide	Accepted	Requirement (5); guide added
Media	Use pictures from students' everyday lives	Accepted	Emoji and colored boxes replaced by real images (Figure 1b)
Pedagogical 1	Write ×10 as "followed by 0", not "add a 0"	Accepted	Prevents a misconception (Figure 2b)
Pedagogical 2	Grade the mental-calculation exercises	Accepted	Random 100 facts replaced by graded items
Pedagogical 2	Explain each visual	Partly	Captions added on the concept pages (Figure 2c); not yet for all images

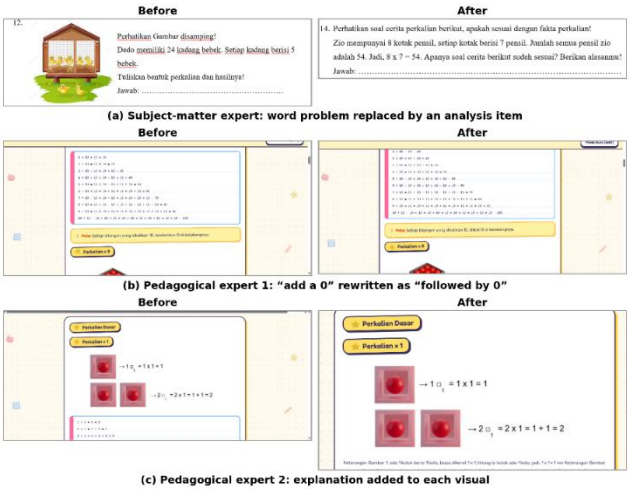

Figure 2. Examples of the Module Before and After Revision Based on the Experts' Suggestions

Discussion

Comparison with Other Needs Analyses

Like other needs analyses of elementary mathematics media, this study found textbook-bound, teacher-centered instruction and a demand for interactive materials (Mirayanti et al., 2024; Putri et al., 2026; Nurendang et al., 2026). Two findings differ. First, the school had devices but rarely used them; the data point to practical rather than motivational reasons: one laptop, no technician, distant sockets, only verbal rules, unstable internet, and a teacher who needed help operating devices. An offline module with a guide addresses some of these conditions, but not the shortage of devices, which limits individual feedback. Second, most students scored just below the criterion rather than far below it, so the main need is to consolidate the meaning of multiplication and its application in word problems, with differentiation for the three lowest scorers, rather than remediation for the whole class. Because word problems also depend on reading comprehension (Verschaffel et al., 2020), students' home language, which was not examined, may contribute to the difficulty and should be examined.

How Compassion Is Expected to Support Learning Multiplication

The proposed mechanism differs by stage. At the concrete stage, pairs build equal groups and check each other's groups; cooperation thus becomes part of forming the concept of equal groups, and errors are corrected in a low-risk setting. At the abstract stage, a peer who explains why four boxes of three apples are written as 4×3 must state the link between picture and symbol, and the empathy and patience the teacher already cultivates make it easier for a less able student to admit not yet understanding. At the mental-calculation stage, errors become visible, so feedback that informs about the task and process rather than

judging the student (Hattie & Timperley, 2007), together with self-pacing and retries, is expected to protect the working memory that worry would otherwise consume (Ashcraft, 2002).

Empirical Findings and Design Propositions

The empirical findings are limited to what the documents, interview, observation, score records, and experts showed. The mechanisms above are initial design propositions that can be falsified in later stages: if students' willingness to attempt, participation, or understanding does not differ when the compassion features are present, the propositions should be revised. Requirements (1) and (5) would change with different data (for example, a school with reliable internet), whereas (2) and (3) were set by the chosen framework, and no finding contradicted them; this is a limitation rather than a confirmation.

Expert Validation

The ratings show procedural feasibility, not accuracy or effectiveness. The experts agreed that the stage sequence was consistent with GASING, whereas the affective features needed strengthening, as indicated by the ratings of 3 on compassionate teaching and on evaluation and feedback. The uniform ratings of the subject-matter expert may reflect a rating tendency, and that expert did not review the revised module, so the percentages of the different experts are not directly comparable.

Implications and Limitations

The contribution of this study is a set of initial, falsifiable design propositions for integrating compassion into GASING multiplication and their realization in an offline module (Table 3). The limitations are substantial. The findings come from one class, one teacher, and one lesson observation, collected and interpreted mainly by the first author, who is also a GASING trainer; students were not interviewed or surveyed; the interview guide was not validated quantitatively; mathematics anxiety was not measured; achievement data came from the teacher's records rather than a validated test; and only school permission, without parental consent or ethics review, was obtained. Because the module concept was set before the analysis, confirmation bias is possible. Validation used one expert per field, with experts linked to the researchers' institution or to the GASING community, and the experts reviewed different versions. Future work should add students' voices (short questionnaires on attitudes, anxiety, and device access, and small-group interviews), item-level assessment with error analysis, re-validation of the revised module by at least three experts per field with Aiken's V, and attention to students' language background.

CONCLUSION

For one Grade IV class, the main gaps were representational (concrete, pictorial, and symbolic work required, but symbol-first teaching observed) and contextual (no Wi-Fi, one laptop, shared phones, and a teacher who needed help with devices). Students' initial scores clustered just below the school criterion, and few dared to attempt tasks without fear of being wrong; anxiety itself was not measured. The teacher asked for staged explanations, supportive feedback, a guide, and an offline format. From these gaps, five requirements were derived, three mainly data-driven and two derived from the GASING and compassion framework, and compassion was assigned a specific function at each GASING stage. In an initial validation, the module was judged feasible with revision by all four experts (75.0% to 94.1%).

These judgments are preliminary evidence of feasibility only. The study did not test the module's practicality or effectiveness in real classroom learning, and the expected effects of compassion remain design propositions.

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DECLARATIONS

Author Contribution	:	Novie Anggela: Conceptualization, Investigation, Formal Analysis, and Writing Original Draft. Syarip Hidayat: Methodology, Supervision, and Writing Review & Editing. Elan: Validation, Supervision, and Writing Review & Editing.
Funding Statement	:	No funding.
Conflict of Interest	:	The first author is a GASING trainer, the pedagogical experts are fellow GASING trainers, and the subject-matter and media experts are lecturers at the authors' university. The authors have no financial interest in GASING.

Additional Information : Supplementary File 1 (interview guide) and Supplementary File 2 (expert validation instruments) are available for this paper.

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