

Developing a Digital Spinning Wheel as a Group Guidance Medium to Support Interpersonal Communication among Madrasah Tsanawiyah Students

Pengembangan Media *Digital Spinning Wheel* dalam Bimbingan Kelompok untuk Mendukung Komunikasi Interpersonal Siswa Madrasah Tsanawiyah

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Abstract: Interactive media are needed in group guidance to foster students' interpersonal communication, yet services at MTs Negeri 1 and MTs Negeri 15 Ciamis rely mainly on lectures, discussions, and simple visual aids. This study aimed to develop a digital spinning wheel as a group guidance medium and to examine its feasibility, practicality, and effectiveness in improving students' interpersonal communication. A research and development design based on the ADDIE model was used. Data were collected through interviews, questionnaires, and a 34-item interpersonal communication scale. The product was validated by media and material experts, rated by guidance and counseling teachers and students, tried out with eight students, and field-tested using a nonequivalent control group design with 20 grade VIII students (10 experimental, 10 control). Both experts rated the product as very feasible (91.07%), and teachers (96.88%) and students (84.69%) rated it as very practical. Both groups improved significantly ($p < .001$), but the experimental group gained more than the control group (41.6 vs. 27.1 points; $N\text{-Gain}$ 0.78 vs. 0.47), and the difference remained significant after controlling for pretest scores (ANCOVA, $p < .001$). The digital spinning wheel is a feasible and practical group guidance medium with promising effects on interpersonal communication. Because the sample was small, nonrandomized, and drawn from two schools, studies with larger randomized samples and follow-up measurement are needed.

Keywords: digital spinning wheel, group guidance, interpersonal communication, ADDIE, madrasah tsanawiyah

Abstrak: Media interaktif dibutuhkan dalam bimbingan kelompok untuk mengembangkan komunikasi interpersonal siswa, tetapi layanan di MTs Negeri 1 dan MTs Negeri 15 Ciamis masih bertumpu pada ceramah, diskusi, dan alat bantu visual sederhana. Penelitian ini bertujuan mengembangkan digital spinning wheel sebagai media bimbingan kelompok serta menguji kelayakan, kepraktisan, dan efektivitasnya dalam meningkatkan komunikasi interpersonal siswa. Penelitian menggunakan desain penelitian dan pengembangan dengan model ADDIE. Data dikumpulkan melalui wawancara, angket, dan skala komunikasi interpersonal berisi 34 butir. Produk divalidasi oleh ahli media dan ahli materi, dinilai oleh guru bimbingan dan konseling serta siswa, diujicobakan kepada delapan siswa, dan diuji lapangan dengan desain nonequivalent control group pada 20 siswa kelas VIII (10 kelompok eksperimen dan 10 kelompok kontrol). Kedua ahli menilai produk sangat layak (91,07%), sedangkan guru (96,88%) dan siswa (84,69%) menilainya sangat praktis. Kedua kelompok meningkat secara signifikan ($p < 0,001$), tetapi

peningkatan kelompok eksperimen lebih besar daripada kelompok kontrol (41,6 dan 27,1 poin; N-Gain 0,78 dan 0,47), dan perbedaan tersebut tetap signifikan setelah skor pretest dikendalikan (ANCOVA, $p < 0,001$). Digital spinning wheel merupakan media bimbingan kelompok yang layak dan praktis dengan efek yang menjanjikan terhadap komunikasi interpersonal. Karena sampel kecil, tidak dirandomisasi, dan berasal dari dua sekolah, penelitian lanjutan dengan sampel acak yang lebih besar dan pengukuran tindak lanjut diperlukan.

Kata kunci: digital spinning wheel, bimbingan kelompok, komunikasi interpersonal, ADDIE, madrasah tsanawiyah

Introduction

Rapid advances in information and communication technology have changed many aspects of life, including education. Teachers are now expected to use technology creatively and in line with the needs of students in the digital era. In guidance and counseling, technology plays an important role because it allows counselors to design more creative and innovative service media (Soleha et al., 2023).

Guidance and counseling media are tools that convey information to students in an accessible way and make services more active (Prasetiawan & Alhadi, 2018). Media can also help students solve their problems (Syahputri et al., 2021). In school counseling, media carry messages from counselors to counselees; when they are relevant to the objectives and materials of the service, they increase students' interest and help them understand and internalize the content of the service (Alhadi et al., 2016).

Group guidance is one of the basic services in guidance and counseling programs. It is a process of delivering information and building group dynamics that helps each member achieve particular goals (Prayitno & Amti, 2004). In practice, these goals are often pursued through specific media and techniques (Ariska, 2019). Nursalim (2013) states that guidance and counseling teachers are expected to use media innovatively so that students can develop a range of skills through the services they receive.

A preliminary study at two Madrasah Tsanawiyah (Islamic junior high schools) in Ciamis, MTs Negeri 1 and MTs Negeri 15, found that interactive media were rarely used in guidance and counseling activities. Services were delivered mainly through lectures and group discussions, supported by simple tools such as posters and PowerPoint slides. These methods tended to be monotonous and made students passive rather than active. At the same time, both schools already had laptops, projectors, and internet access that could support more interactive services.

Students at the Madrasah Tsanawiyah level are in early adolescence, the first phase of the transition from childhood to adulthood (Sawyer et al., 2018). During this phase, students need to master social skills, and interpersonal communication is one of the most essential. Hardjana (2003) describes interpersonal communication as a direct, face-to-face exchange in which a sender conveys a message and a receiver receives it and responds immediately. DeVito (2019) explains that effective interpersonal communication is characterized by openness, empathy, supportiveness, positiveness, and equality. These five qualities form the theoretical basis of the interpersonal communication scale used in this study.

Not all Madrasah Tsanawiyah students communicate well with others. In the preliminary study, interviews with guidance and counseling teachers and an interpersonal communication questionnaire administered to students at both schools showed that 25% of the students had a low level of interpersonal communication, 46.9% a medium level, and 28.1% a high level. Although most students were in the medium or high categories, one in four was in the low

category and nearly three quarters had not reached the high category. This pattern is consistent with [Putra and Jamal \(2020\)](#), who found that junior high school students' interpersonal communication skills were still low, with symptoms such as shyness, nervousness, anxiety when speaking, and a lack of feedback when teachers explain the material. Weak interpersonal communication can hinder students' adjustment in class, and interpersonal communication skills have been shown to be related to academic achievement ([Ariyani & Hadiani, 2020](#)). These conditions indicate that students' interpersonal communication deserves serious attention at school.

Guidance and counseling teachers are responsible for providing services to all students, including services that develop interpersonal communication. Group guidance is well suited to this purpose because members interact directly, share opinions, and respond to one another. Several studies have shown that game-based techniques strengthen these processes. Group guidance with simulation games improved the interpersonal communication of senior high school students ([Ibtyandi et al., 2019](#); [Ridlwani & Wangid, 2021](#)), grade VIII students at an Islamic junior high school ([Aprilia, 2023](#)), and grade IX students ([Rahmawati et al., 2025](#)). Word games ([Nuriya & Wirastania, 2022](#)) and other games ([Loban, 2020](#)) have produced similar benefits for interpersonal communication and relationships. These effects are theoretically plausible. Social learning theory holds that people learn by observing and imitating the behavior of others ([Bandura, 1977](#)), and sociocultural theory emphasizes that skills develop through social interaction with peers and adults ([Vygotsky, 1978](#)). Games add structured turns, challenges, and immediate feedback, which can increase engagement ([Fleming et al., 2017](#)).

One interactive medium that combines these features is the spinning wheel. A spinning wheel is a visual medium in the form of a rotating wheel divided into segments, each containing a topic, question, or challenge. When the wheel is spun, it randomly selects one segment that the participant must respond to, which introduces an element of play and surprise. Studies have reported that spinning wheel media increased students' motivation in physics learning ([Hamzah et al., 2019](#)) and improved learning outcomes in tajweed lessons ([Hestina et al., 2025](#)). A review of studies published between 2020 and 2024 showed that spinning wheel media are increasingly developed on digital platforms, with a growing emphasis on personalized content, interactivity, and gamification ([Yusnita et al., 2024](#)). The preliminary questionnaire in this study also showed that 86.2% of the students preferred digital media to print media. A digital spinning wheel therefore matches both students' preferences and the facilities available at the two schools.

Despite this potential, research on spinning wheel media has focused mainly on subject learning and on cognitive outcomes or learning motivation ([Hamzah et al., 2019](#); [Hestina et al., 2025](#); [Yusnita et al., 2024](#)). Studies on game-based group guidance for interpersonal communication, in turn, have mostly used nondigital simulation or word games, and several relied on one-group designs without a comparison group ([Aprilia, 2023](#); [Rahmawati et al., 2025](#)). To date, little is known about a digital spinning wheel that is designed specifically for group guidance on interpersonal communication and that is developed and evaluated systematically for its feasibility, practicality, and effectiveness against conventional group guidance. The novelty of this study lies in (1) developing a digital spinning wheel whose content targets interpersonal communication in group guidance, rather than subject learning; (2) using a complete ADDIE procedure that combines expert validation, user assessment, and a field test with a control group; and (3) placing the product in the Madrasah Tsanawiyah context, where the medium can be run with facilities that schools already have. The study contributes a ready-to-use service medium for guidance and counseling teachers and empirical evidence on game-based digital media in group guidance. Accordingly, this study

aimed to (1) develop a digital spinning wheel as a group guidance medium, (2) determine its feasibility based on expert validation, (3) determine its practicality based on teachers' and students' assessments, and (4) test its effectiveness in improving students' interpersonal communication compared with conventional group guidance.

Method

This study used a research and development (R&D) approach with the ADDIE model, which consists of the Analysis, Design, Development, Implementation, and Evaluation stages (Branch, 2009). ADDIE was chosen because each of its stages has a clear output and because evaluation is embedded throughout the process. This structure allowed the three questions of the study to be answered at the appropriate stages: feasibility during development, practicality during development and implementation, and effectiveness during implementation and evaluation. The activities and outputs of each stage are summarized in Table 1.

Table 1. Research Procedure Based on the ADDIE Model

Stage	Main activities	Output
Analysis	Analysis of performance gaps, service objectives, student characteristics, materials, and available resources through interviews with guidance and counseling teachers and questionnaires for students	Profile of needs and resources
Design	Design of the media framework; preparation of the interpersonal communication scale, the feasibility questionnaire for experts, and the practicality questionnaires for teachers and students	Media blueprint and research instruments
Development	Production of the digital spinning wheel; validation by a media expert and a material expert; assessment by guidance and counseling teachers; small-group trial with eight students	Validated prototype
Implementation	Field test using a nonequivalent control group design: pretest, two group guidance sessions (digital spinning wheel for the experimental group, conventional group guidance for the control group), and posttest	Pretest and posttest data
Evaluation	Formative evaluation at each stage and summative evaluation of feasibility, practicality, and effectiveness	Final product

The small-group trial involved eight students from MTs Negeri 15 Ciamis, selected by purposive sampling based on medium to low interpersonal communication. The field test involved 20 grade VIII students: 10 students from MTs Negeri 1 Ciamis formed the experimental group and 10 students from MTs Negeri 15 Ciamis formed the control group. Both groups completed a pretest, received two group guidance sessions, and completed a posttest. The experimental group used the digital spinning wheel during the sessions, whereas the control group received group guidance with conventional methods. Because the groups were intact groups from different schools and were not randomly assigned, the design is quasi-experimental, and differences between the schools are a potential threat to internal validity (Shadish et al., 2002).

Data were collected through interviews, an interpersonal communication scale, and questionnaires. The interpersonal communication scale was developed from the five aspects proposed by DeVito (2019): openness, empathy, supportiveness, positiveness, and equality. A total of 48 items were tried out. Item validity was tested with the Pearson product-moment correlation between each item and the total score. Of the 48 items, 34 were valid and 14 were

invalid; the invalid items were excluded, so the final scale consisted of 34 items. The reliability of the scale, estimated with Cronbach's alpha, was 0.711, which is within the acceptable range. With 34 items scored from 1 to 4, scores on the final scale range from 34 to 136. The characteristics of the scale are presented in Table 2. The other instruments were a feasibility questionnaire completed by the media expert and the material expert and practicality questionnaires completed by guidance and counseling teachers and by students.

Table 2. Characteristics of the Interpersonal Communication Scale

Characteristic	Description
Theoretical basis	Five aspects of interpersonal communication: openness, empathy, supportiveness, positiveness, and equality (DeVito, 2019)
Items tried out	48 items
Valid items (retained)	34 items
Invalid items (excluded)	14 items
Item validity test	Pearson product-moment correlation between item and total score
Reliability (Cronbach's alpha)	0.711
Score range of the final scale	34 to 136 (34 items scored 1 to 4)

The feasibility and practicality percentages were calculated with Equation 1, where P is the percentage, Σx is the total score obtained, and Σx_i is the maximum possible score.

$$P = \frac{\Sigma x}{\Sigma x_i} \times 100\% \quad (1)$$

The resulting percentages were interpreted using the categories in Table 3.

Table 3. Categories of Feasibility and Practicality

Percentage	Category
81%–100%	Very feasible/very practical
61%–80%	Feasible/practical
41%–60%	Less feasible/less practical
≤ 40%	Not feasible/not practical

The effectiveness data were analyzed in several steps. First, the normality of the pretest, posttest, and gain scores was tested with the Shapiro–Wilk test. Second, the change within each group was tested with the paired samples t test, with the Wilcoxon signed-rank test as a nonparametric check. The hypotheses were H_0 : there is no difference between the pretest and posttest means, and H_a : there is a difference between the pretest and posttest means. Third, the initial equivalence of the groups was examined with an independent samples t test on the pretest scores. Fourth, the gain scores of the two groups were compared with an independent samples t test and the Mann–Whitney U test, and the posttest scores were compared with an analysis of covariance (ANCOVA) using the pretest as the covariate. Effect sizes were reported as Cohen's d (Cohen, 1988). Finally, the normalized gain (N-Gain) was calculated with Equation 2 (Hake, 1998), where the maximum score is 136.

$$N - \text{Gain} = \frac{\text{Posttest score} - \text{Pretest score}}{\text{Maximum score} - \text{Pretest score}} \quad (2)$$

N-Gain values of 0.70 or higher were classified as high, values from 0.30 to below 0.70

as medium, and values below 0.30 as low (Hake, 1998). N-Gain percentages were further interpreted as effective (above 76%), fairly effective (56%–75%), less effective (40%–55%), or not effective (below 40%).

Results and Discussion

Development of the Digital Spinning Wheel through the Analysis, Design, and Development Stages

The analysis stage showed that the main gap in the two schools was not a lack of facilities but a lack of interactive media designed for group guidance. Guidance services relied on lectures and discussions supported by posters and *PowerPoint* slides, while laptops, projectors, and internet access were already available. The analysis of student characteristics showed that most students preferred digital media and that about one in four had low interpersonal communication. These findings indicate that a suitable medium should be digital, should run on existing devices, and should give every group member an opportunity to speak and respond. This conclusion is in line with Prasetiawan and Alhadi (2018), who found that school counselors already use visual, electronic, audiovisual, and computer media, and with Soleha et al. (2023), who emphasize that developing digital media is an urgent need in current guidance and counseling services.

In the design stage, the media framework and the research instruments were prepared. In the development stage, the digital spinning wheel was produced as a *PowerPoint*-based medium that combines text, animation, and interactive activities in the form of questions and challenges about interpersonal communication. During a session, students spin the wheel and answer the question or complete the challenge that the wheel selects, while the other members observe and respond. The prototype was then validated by a media expert and a material expert, assessed by guidance and counseling teachers, and tried out with eight students in a small group before the field test. This sequence reflects the formative evaluation principle of ADDIE, in which each version of the product is checked before it moves to the next stage (Branch, 2009). Because the product was built with software that teachers already use, it can be operated without additional cost, which is important for schools with limited budgets.

Feasibility of the Digital Spinning Wheel

The feasibility of the digital spinning wheel was assessed by a media expert and a material expert. The results are presented in Table 4.

Table 4. Results of the Feasibility Assessment of the Digital Spinning Wheel

Validator	Score	Maximum score	Percentage	Category
Media expert	51	56	91.07%	Very feasible
Material expert	51	56	91.07%	Very feasible

Both the media expert and the material expert gave a score of 51 out of 56, which corresponds to 91.07% and falls in the very feasible category. This result means that the display of the medium and the content it carries were judged to be close to the maximum standard before the medium was used with students. The media assessment indicates that the visual design, the animation, and the operation of the wheel were considered appropriate, whereas the material assessment indicates that the questions and challenges on the wheel were considered relevant to the goal of developing interpersonal communication.

These results are consistent with the criteria for guidance and counseling media

proposed by Alhadi et al. (2016), who state that media must be relevant to the objectives and materials of the service so that students can better understand and internalize its content. Nursalim (2013) likewise emphasizes that guidance and counseling media should be designed innovatively and in line with the skills students need to develop. From the perspective of multimedia design, combining words and pictures in a coherent display helps users process information more effectively (Mayer, 2009); the high media rating suggests that the combination of text and animation in the wheel met this principle. At the same time, expert validation shows that the product is ready to be used; it does not yet show that the product improves interpersonal communication. That question was addressed in the field test. Expert validation is therefore best understood as a quality gate that allows weaknesses to be detected and corrected early, before the product reaches students (Branch, 2009).

Practicality of the Digital Spinning Wheel

The practicality of the digital spinning wheel was assessed by guidance and counseling teachers as practitioners and by students as users. The results are presented in Table 5.

Table 5. Results of the Practicality Assessment of the Digital Spinning Wheel

Assessor	Score	Maximum score	Percentage	Category
Guidance and counseling teachers (n = 2)	93	96	96.88%	Very practical
Students	271	320	84.69%	Very practical

The guidance and counseling teachers gave a practicality score of 96.88%, and the students gave a score of 84.69%. Both scores fall in the very practical category. The teachers considered the material and language of the medium appropriate and judged its display attractive enough to capture students' attention, so that the service became more varied and enjoyable. The teachers' rating was about 12 percentage points higher than the students' rating. One possible explanation is that teachers assessed the medium mainly from the perspective of ease of operation, which is high because the medium runs on familiar software and existing devices, whereas students, as direct users, may have been more sensitive to aspects such as the clarity of the questions and the pace of the game. Even so, both ratings exceeded the threshold of the highest category.

The high practicality rating is meaningful given the conditions found in the analysis stage, where services were delivered mainly through oral explanations and were perceived as monotonous. A medium that is easy for teachers to operate is more likely to be used in routine practice, particularly because counselors are already accustomed to computer-based media (Prasetyawan & Alhadi, 2018). Media that suit students' characteristics also make it easier for students to follow and benefit from the service (Syahputri et al., 2021). In addition, game elements such as challenges, turn-taking, and uncertain outcomes are known to increase users' engagement with applied games (Fleming et al., 2017). The students' rating in the very practical category, together with the 86.2% preference for digital media found in the preliminary study, suggests that the digital spinning wheel was acceptable to its intended users.

Effectiveness of the Digital Spinning Wheel in Improving Interpersonal Communication

The effectiveness of the digital spinning wheel was examined from the pretest and posttest scores of the experimental and control groups. The scores of each student are

presented in Table 6 and Table 7.

Table 6. Pretest and Posttest Scores of the Experimental Group

Respondent	Pretest	Posttest	Gain
Student 1	82	124	42
Student 2	79	124	45
Student 3	85	124	39
Student 4	84	127	43
Student 5	78	127	49
Student 6	85	129	44
Student 7	84	122	38
Student 8	81	123	42
Student 9	85	123	38
Student 10	82	118	36
Mean	82.5	124.1	41.6

Table 7. Pretest and Posttest Scores of the Control Group

Respondent	Pretest	Posttest	Gain
Student 1	79	111	32
Student 2	71	110	39
Student 3	82	108	26
Student 4	79	100	21
Student 5	72	106	34
Student 6	75	102	27
Student 7	83	105	22
Student 8	80	99	19
Student 9	83	105	22
Student 10	84	113	29
Mean	78.8	105.9	27.1

In the experimental group, the mean score increased from 82.5 on the pretest to 124.1 on the posttest, a gain of 41.6 points. In the control group, the mean score increased from 78.8 to 105.9, a gain of 27.1 points. On the 34 to 136 score range, the mean item score of the experimental group rose from 2.43 to 3.65, whereas that of the control group rose from 2.32 to 3.11. In other words, after the intervention, students in the experimental group on average endorsed the positive interpersonal communication statements at a level close to the highest response option, while students in the control group were at a moderately high level. Every student in the experimental group gained at least 36 points, whereas the gains in the control group ranged from 19 to 39 points.

Table 8. Results of the Shapiro–Wilk Normality Test

Group	Score	Statistic	df	Sig.
Experimental	Pretest	0.880	10	0.129
Experimental	Posttest	0.941	10	0.559
Experimental	Gain	0.962	10	0.808
Control	Pretest	0.891	10	0.173
Control	Posttest	0.964	10	0.825
Control	Gain	0.947	10	0.636

As shown in Table 8, all significance values were greater than 0.05, including those for the gain scores, which are the scores relevant to the assumption of the paired samples *t* test. The data were therefore treated as normally distributed. Because the normality test has low power with 10 participants per group, nonparametric tests were also run as a robustness check.

Table 9. Results of the Paired Samples *t* Test

Group	Mean difference	SD	<i>t</i>	df	<i>p</i>	95% CI	<i>dz</i>
Experimental	41.60	3.92	33.55	9	< .001	[38.79, 44.41]	10.61
Control	27.10	6.44	13.31	9	< .001	[22.50, 31.70]	4.21

Note. CI = confidence interval; *dz* = standardized mean difference for paired scores.

Table 9 shows that the posttest scores were significantly higher than the pretest scores in both groups ($p < .001$), so H_0 was rejected in both groups. The Wilcoxon signed-rank test led to the same conclusion ($p = .002$ in each group), because every student in both groups improved. These within-group results show that interpersonal communication increased after group guidance, but they do not by themselves show that the digital spinning wheel was more effective than conventional group guidance, because the control group also improved significantly. For this reason, the two groups were compared directly (Table 10).

Table 10. Results of the Between-Group Comparisons

Comparison	Result	Interpretation
Pretest (independent samples <i>t</i> test)	$t(18) = 2.20, p = .041$; Mann–Whitney $p = .062$	Groups not fully equivalent at baseline
Gain scores (independent samples <i>t</i> test)	Mean difference = 14.50, 95% CI [9.49, 19.51], $t(18) = 6.08, p < .001, d = 2.72$	Experimental gain larger
Gain scores (Mann–Whitney <i>U</i> test)	$U = 3.50, p < .001$	Same conclusion
Posttest adjusted for pretest (ANCOVA)	$F(1, 17) = 77.33, p < .001$, partial $\eta^2 = .82$; adjusted means 124.01 vs. 105.99	Experimental posttest higher

The two groups differed slightly at baseline: the experimental group had a higher pretest mean than the control group ($t(18) = 2.20, p = .041$), although the nonparametric test did not reach significance ($p = .062$). This difference confirms that the groups were not fully equivalent. However, it works against the experimental group rather than in its favor, because a group that starts higher has less room to improve. Despite this, the experimental group gained 14.50 points more than the control group ($t(18) = 6.08, p < .001, d = 2.72$), and the Mann–Whitney test gave the same result. When the pretest was controlled with ANCOVA, the adjusted posttest mean of the experimental group (124.01) remained significantly higher than that of the control group (105.99), $F(1, 17) = 77.33, p < .001$, partial $\eta^2 = .82$. The assumption of homogeneous regression slopes was met ($p = .99$).

Table 11. Results of the N-Gain Analysis

Group	Pretest	Posttest	N-Gain	Percentage	Category
Experimental	82.5	124.1	0.78	78%	High; effective
Control	78.8	105.9	0.47	47%	Medium; less effective

Note. N-Gain was calculated from group means with a maximum score of 136.

Table 11 shows that the experimental group achieved an N-Gain of 0.78 (78%), which is in the high category and is interpreted as effective, whereas the control group achieved an N-Gain of 0.47 (47%), which is in the medium category and is interpreted as less effective. Relative to the room for improvement available to each group, the experimental group therefore realized about three quarters of its possible gain, while the control group realized less than half. Taken together, the within-group tests, the between-group tests, and the N-Gain analysis consistently indicate that group guidance with the digital spinning wheel improved students' interpersonal communication more than conventional group guidance did.

These findings are consistent with previous studies showing that game-based group guidance improves interpersonal communication. Simulation games improved the interpersonal communication of grade VIII students at an Islamic junior high school (Aprilia, 2023), grade IX students (Rahmawati et al., 2025), and senior high school students (Ibtyandi et al., 2019; Ridlwan & Wangid, 2021), and word games had a similar effect among grade VII students (Nuriya & Wirastania, 2022). The present study extends these findings in two ways: it shows that a digital game medium can produce similar benefits, and it compares the medium with conventional group guidance rather than relying only on a one-group design.

The significant improvement in the control group is also informative. Group guidance itself provides opportunities for members to interact, express opinions, and respond to others (Prayitno & Amti, 2004), so an improvement in interpersonal communication after conventional group guidance is expected. The added value of the digital spinning wheel lies in how it structures these interactions. Because the wheel selects questions and challenges at random and gives every member a turn, all students must speak and respond, including those who are usually passive. The game elements make participation more engaging (Fleming et al., 2017), and applied games have shown promising effects in psychological interventions, although the evidence base is still developing (Lau et al., 2017).

Several theories help explain how the medium may work. From the perspective of sociocultural theory, skills are first practiced in interaction with others before they become part of the individual's repertoire (Vygotsky, 1978); the wheel creates repeated opportunities for such interaction. From the perspective of social learning theory, people learn by observing and imitating others (Bandura, 1977); when one student responds to a challenge, the other members observe examples of open, empathic, and supportive communication that they can imitate in their own turns. Multimedia principles also suggest that combining text and animation can help students understand the communication concepts presented on the wheel (Mayer, 2009), although interpersonal communication as a skill develops mainly through practice rather than through understanding alone. These explanations are plausible, but they were not tested directly in this study because the process of the sessions was not observed systematically. A novelty effect may also have contributed to the larger gain in the experimental group.

The findings should be interpreted in light of several limitations. The sample was small, with 10 students in each group, and the groups came from different schools and were not randomly assigned, so the effect of the medium may be confounded with differences between the schools, such as teachers, class climate, and student background (Shadish et al., 2002). The intervention consisted of only two sessions, the outcome was measured with a self-report scale, and no follow-up was conducted to assess whether the improvement was maintained. In addition, the medium is still based on *PowerPoint*, so it cannot yet store data or be accessed through a dedicated platform. The very large effect sizes should therefore be read as evidence

that the medium is promising rather than as a precise estimate of its effect in the wider population.

Conclusion

This study developed a digital spinning wheel as a group guidance medium through the ADDIE stages and found that the product was very feasible according to a media expert and a material expert and very practical according to guidance and counseling teachers and students. In the field test, interpersonal communication improved in both groups, but the improvement was larger in the group that used the digital spinning wheel than in the group that received conventional group guidance, and this difference remained after pretest scores were controlled. These results answer the aims of the study by showing that the digital spinning wheel is feasible, practical, and effective as an initial indication for improving the interpersonal communication of Madrasah Tsanawiyah students. Theoretically, the findings support the view that structured game-based interaction in group guidance can strengthen interpersonal communication by giving every member opportunities to practice and observe communication with peers.

Practically, guidance and counseling teachers can use the digital spinning wheel with devices that schools already have to make group guidance more interactive and to involve passive students, and schools can support such media through training and access to technology. The conclusions are limited by the small, nonrandomized sample from two schools in one subdistrict, the short intervention of two sessions, the use of a self-report scale, the absence of follow-up, and the *PowerPoint*-based format of the product. Future researchers are encouraged to use randomized designs with larger and more diverse samples, extend the number of sessions, add follow-up measurement and observation of the group process, analyze changes in each aspect of interpersonal communication, and develop the medium into a web-based or dedicated platform with more interactive features and data management.

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