

Generic vs. Explicit Grammatical Feedback for Moodle Quiz Items

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Flow of this presentation

- Importance of feedback in L2 learning
- Underuse of feedback function in Moodle question development
- Our study: set up and results
- Obstacles to using Moodle feedback functions
- Obstacles to developing test bank items
- Overview of feedback function in Moodle question bank items



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The role of feedback in language learning

- Fanselow (1987): to teach is to provide feedback" (p. 267)
- Gass & Mackey (2006): appropriate feedback when there is an error in the learners' output
- Parr & Timberlyey (2010): address gaps between the learners' current and the desired ability
- All feedback (whether provided by teachers, tutors, or technology) shares the goal of encouraging self-learning and regulation of the learners' behavior (e.g., Loncar et al., 2021; Saadat et al., 2016)



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Grammatical feedback mediated through technology

Recent studies about feedback have examined how feedback on writing and grammar can be mediated through technology:

- Technological mediation allows a greater degree of adaptability and flexibility, whether delivered synchronously or asynchronously (e.g., Delante, 2017; Shintani & Aubrey, 2016)


Reviews of research in corrective feedback by have indicated that

- Feedback adds to the learners understanding (e.g., Li & Vuono, 2019; Loncar et al., 2021; Russell & Spada, 2006; van Beunigen, 2010)

This suggests that providing feedback to students when they are completing activities available on an LMS is essential




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Moodle LMS

- One of most used LMS at Japanese universities
 - Best LMS as rated by by Learning Platforms (2021), an independent evaluator of online education options
- Provides educators controls missing from Google Classroom
 - assignment cut off dates
 - question banks for random generation of items
 - share



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The Study, 1


Hypothesis:

- Students taking quizzes in Moodle that receive instructive feedback about incorrect answers will outperform students receiving non-specific feedback


Materials:

- The materials consisted of 240 2-option multiple choice questions targeting knowledge of present participles, past participles, and passive forms.
- The questions were uploaded to Moodle and imported into an item test bank.

Participles	Attri buti ve	Pre dica te	Pas sive	Tot al
Present	61	36		97
Past	65	24	54	143
Total				240




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The Study, 2

Participants:

- Participants were drawn from two institutions. Participation was voluntary. Site 1: Course teachers administered the pretest. Students were 1st – 3rd year students. Site 2: Participation voluntary but encouraged by grammar course teachers. All first-year students invited.



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The Study, 3

Procedures

- A 40-item pre-test was administered in classes, and participants were then divided into two equivalent groups, control and treatment. Only generic feedback was provided.
- Teachers decided on the timing of practice tests. Some were done during class time, but most were done as homework.
- 40-item practice tests were opened that consisted of the same proportions of items from each group as in the pre-test, but items were drawn randomly from the item test bank. Control group students received generic feedback and treatment group students received formative feedback.
- The 40-item pre-test was then re-administered and used as the post-test.

Test Item Distributions

Participles	Attri buti ve	Pre dica te	Pas sive
Present	10	5	
Past	10	5	10



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The Study, 4

The Data

- There were widely different patterns of participation, from some students who took the pre-test only and other students who took both the pre- and post-tests and did 10 practice sessions.
- From this pool of students, we selected the 51 (Set 1) who had full data sets (pre-test, post-test and at least 1 practice session). We also picked up a second set of students (Set 2) who had pre-test and multiple practice test scores, but no post-test. For these 43 students, we used the final practice test in place of the post-test.

Stage	N
Pretest	149
Practice 1	125
Practice 2	83
Practice 3	47
Practice 4	41
Practice 5	13
Practice 6	7
Practice 7	5
Practice 8	3
Practice 9	3
Practice 10	2
Posttest	52



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The Study, 5

ANCOVAs

We conducted two ANCOVAs with pre-test post-test change as the dependent variable, group (control vs treatment) as the independent variable, and number of practice attempts as the covariate.

The first ANCOVA was with all 94 students from both sets. The results were statistically significant, $F(1, 93) = 5.20, p = .007, \eta^2 = 0.103$.

The second ANCOVA used only set 1 students. Again, the results were statistically significant, $F(1, 48) = 3.70, p = .032, \eta^2 = 0.133$.

In both cases, students receiving item-level feedback on incorrect answers outperformed students receiving generic feedback.

In both cases, the effect size can be considered medium.



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The Study, 6

Time

One advantage of using Moodle is that it reports time taken on tests. This can help the researcher or teacher understand the amount of burden.

The amount of time for the average student to complete the pre-test, the post-test and four practice tests would be less than 45 minutes of total test time.

Students in Sets 1 and 2 averaged 5.46 minutes per test based on 498 tests.

Students whose data was not used for the ANCOVAs averaged 8.84 minutes per test based on 95 tests.

For all attempts, the average test time was 5.99 minutes per test based on 593 tests.



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Obstacles

There are two main obstacles to developing these materials: item generation and Moodle set up.

- Item generation
 - Identifying what point(s) to target
 - Developing a taxonomy of error types
 - Preparing formative feedback
- Moodle set up
 - Importing items
 - Setting tests



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Moodle feedback option as seen by educators

- Overall feedback entry:

- Item feedback when entering quiz items directly into Moodle.

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Moodle overall feedback entry

- Overall feedback entered by educators for this project provided to the Control Group

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Grammar points & item generation

Grammar focus	Example items
<ul style="list-style-type: none"> Passives 	<ul style="list-style-type: none"> They were aggravated by the noise.
<ul style="list-style-type: none"> Past participles <ul style="list-style-type: none"> Attributive Predicate 	<ul style="list-style-type: none"> He was arrested for aggravated assault. The president looked alarmed
<ul style="list-style-type: none"> Present participle <ul style="list-style-type: none"> Attributive Predicate 	<ul style="list-style-type: none"> What an aggravating noise! His way of talking was very aggravating.

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Grammar item & feedback generation

Item	Feedback for incorrect answer
<ul style="list-style-type: none"> PASS: They were ___ by the noise. aggravated aggravating 	<ul style="list-style-type: none"> PASS: 音によって「腹立たせられる」ため、aggravated
<ul style="list-style-type: none"> PA-A: He was arrested for ___ assault. aggravated aggravating 	<ul style="list-style-type: none"> PA-A: 「加重された」暴行であるため、aggravated} PA-P: 大統領が「不安にさせられている」ため、alarmed
<ul style="list-style-type: none"> PA-P The president looked ___. alarmed alarming 	<ul style="list-style-type: none"> PR-A: 音自体が「悪化させられる」のではなく、「悪化させるような」音であるため、aggravating
<ul style="list-style-type: none"> PR-A: What an ___ noise! aggravating aggravated 	<ul style="list-style-type: none"> PR-P: 「話し方」が「人を怒らせるような」ものであるため、aggravating
<ul style="list-style-type: none"> PR-P: His way of talking was very ___. aggravating aggravated 	

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Identification of error types & item generation

Items generated & uploaded to Moodle (Question bank view)

- Passives: 54 items
- Past participles
 - Attributive: 65 items
 - Predicate: 24 items
- Present participle
 - Attributive: 61 items
 - Predicate: 36 items

Passive item examples

:: PASS-aggravate-5
(to aggravate = いやな気分させる、怒らせる)
They were _____ by the noise.

:: PASS-aggravate-6
(to aggravate = いやな気分させる、怒らせる)
They were _____ by the traffic delays.

:: PASS-alarm-7
(to alarm = 警報する、心配させる)
Everyone was _____ by the report.

:: PASS-alarm-8
(to alarm = 警報する、心配させる)
The dog was _____ by the loud noise.

:: PASS-amaze-14
(to amaze = 驚かせる)
He was _____ by the news.

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Past participle, attributive item examples

:: PA-A-aggravate-2
(to aggravate = いやな気分させる、怒らせる)
The _____ policemen finally got angry.

:: PA-A-aggravate-3
(to aggravate = いやな気分させる、怒らせる)
He was arrested for _____ assault.

:: PA-A-alarm-3
(to alarm = 警報する、心配させる)
He had an _____ expression on his face.

:: PA-A-alarm-4
(to alarm = 警報する、心配させる)
The _____ doctor immediately scheduled tests.

:: PA-A-amaze-10
(to amaze = 驚かせる)
He laughed at my _____ expression

Present participle, predicate item examples

:: PR-P-aggravate-4
(to aggravate = いやな気分させる、怒らせる)
His way of talking was very _____.

:: PR-P-alarm-5
(to alarm = 警報する、心配させる)
That report was very _____.

:: PR-P-amaze-12
(to amaze = 驚かせる)
That was _____!

:: PR-P-annoy-7
(to annoy = 困感させる、いらいらさせる)
You are so _____.

:: PR-P-astonish-3
(to astonish = びっくりさせる、おどろかせる)
His energy was _____!

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Concatenated items in spreadsheet, Moodle import format for moodle

Example of concatenated Moodle import format:

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::PR-A-aggravate-1::(to aggravate = いやな気分させる、怒らせる) What an (=aggravating#Good-aggravated#音自体が「悪化させられる」のではなく、「悪化させるような」音であるため、aggravating) noise!
::PR-P-aggravate-4::(to amuse = 楽しませる、楽しい気分させる) His way of talking was very (=aggravating#Good-aggravated#「話し方」が「人を怒らせるような」ものであるため、aggravating) aggravating.
::PA-A-aggravate-2::(to alarm = 警報する、心配させる) The (=aggravated#Good-aggravating#警察官が「激怒させられた」ため、aggravated) policemen finally got angry.
::PA-A-aggravate-3::(to amaze = 驚かせる) He was arrested for (=aggravated#Good-aggravating#「加重された」暴行であるため、aggravated) assault.
::PASS-aggravate-5::(to annoy = 困感させる、いらいらさせる) They were (=aggravated#Good-aggravating#音によって「腹立たせられる」ため、aggravated) by the noise.
::PASS-aggravate-6::(to astonish = びっくりさせる、おどろかせる) They were (=aggravated#Good-aggravating#「交通遅延」によって「腹立たせられるため」、aggravated) by the traffic delays.
::PR-A-alarm-1::(to bewilder = 当惑させる、迷わせる) He had an (=alarming#Good-alarmed#「不安にさせるような」表情であるため、alarming) expression on his face.
::PR-A-alarm-2::(to bore = 退屈させる) The news of the terrorist attack was (=alarming#Good-alarmed#「不安にさせるような」ニュースであるため、alarming) news.
    
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Question bank: Treatment & Control item view

Comparison of Moodle Question Bank views:

- Treatment:** Select a category: Treatment(Specific Feedback). Shows question text in the question list. Search options are checked.
- Control:** Select a category: Control (No Specific Feedback). Shows question text in the question list. Search options are checked.

Both views show a list of items with their IDs and descriptions, such as PA-A-aggravate-2 and PR-P-aggravate-4.

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Question view & feedback provided Control group

Question 1
Not yet answered
Marked out of 1.00

(to please = 喜ばせる)
That was a ____ thing that you did.

Select one:
 a. pleasing
 b. pleased

Question 2
Not yet answered
Marked out of 1.00

(to puzzle = 困惑させる)
He gave his mother a ____ look.

Select one:
 a. puzzling
 b. puzzled

Question 5
Incorrect
Mark 0.00 out of 1.00

(to puzzle = 困惑させる)
He was ____ by her answer.

Select one:
 a. puzzling X
 b. puzzled

The correct answer is: puzzled

Question 6
Correct
Mark 1.00 out of 1.00

(to comfort = 慰める、希望をあたえる)
They were ____ when they heard the news.

Select one:
 a. comforted ✓ Good
 b. comforting

The correct answer is: comforted

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Feedback provided Treatment group

Question 1
Not yet answered
Marked out of 1.00

(to please = 喜ばせる)
That was a ____ thing that you did.

Select one:
 a. pleasing
 b. pleased X 「楽しませる」ことなのでpleasing

The correct answer is: pleasing

Question 2
Not yet answered
Marked out of 1.00

(to puzzle = 困惑させる)
He gave his mother a ____ look.

Select one:
 a. puzzling ✓ Good
 b. puzzled

Question 5
Incorrect
Mark 0.00 out of 1.00

(to insult = 侮辱する)
That kind of behavior is ____.

Select one:
 a. insulting
 b. insulted X 「そのような行動」が「侮辱するような、行動なのでinsulting」

The correct answer is: insulting

Question 6
Incorrect
Mark 0.00 out of 1.00

(to surprise = びっくりさせる)
He tried to calm down the ____ animal.

Select one:
 a. surprised
 b. surprising X 「驚かされた」動物なのでsurprised

The correct answer is: surprising


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Conclusions

The use of item-level feedback for incorrect answers on quizzes improves learner performance.

The time burden for students taking 40-item multiple choice quizzes on moodle is quite low.

Preparation of items takes considerable time, so care should be taken when deciding what form to target and a commitment should be made to reuse items many times (and classes).



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References

Delante, N. L. (2017). Perceived impact of online written feedback on students' writing and learning: A reflection. *Reflective Practice, 18*(6), 772-804. <https://doi.org/10.1080/14623943.2017.1351351>

Fanselow, J. (1987). *Breaking rules: Generating and exploring alternatives in language teaching*. Longman.

Gass, S. & A. Mackey. (2006). Input, interaction and output: An overview. *AILA Review, 19*, 3-17. <https://doi.org/10.1075/aila.19.03gass>

Li, S., & Vuono, A. (2019). Twenty-five years of research on oral and written corrective feedback in System. *System, 84*, 93-109. <https://doi.org/10.1016/j.system.2019.05.006>

Loncar, M., Schams, W., & Liang, J. S. (2021). Multiple technologies, multiple sources: trends and analyses of the literature on technology-mediated feedback for L2 English writing published from 2015-2019. *Computer Assisted Language Learning, 1-63*. <https://doi.org/10.1080/09588221.2021.1943452>

Parr, J. M., & Timperley, H. S. (2010). Feedback to writing, assessment for teaching and learning and student progress. *Assessing writing, 15*(2), 68-85. <https://doi.org/10.1016/j.asw.2010.05.004>


Russell, J., & Spada, N. (2006). The effectiveness of corrective feedback for the acquisition of L2 grammar: A meta-analysis of the research. In J. Norris and L. Ortega (Eds.), *Synthesizing research on language learning and teaching* (pp. 133-164). John Benjamin. <https://doi.org/10.1075/llt.13.09ya1>

Saadat, M., Mehrpour, S., & Khajavi, Y. (2016). Internet-mediated corrective feedback for digital natives. *TESOL Journal, 7*(1), 233-245. <https://doi.org/10.1002/tesj.232>

Shintani, N., & Aubrey, S. (2016). The effectiveness of synchronous and asynchronous written corrective feedback on grammatical accuracy in a computer-mediated environment. *The Modern Language Journal, 100*(1), 296-319. <https://doi.org/10.1111/modl.12317>

Swenson, T., & Visgatis, B. (in press). Providing feedback in moodle question bank items. *Osaka Jogakuin University Journal*. March, 2022

Van Beuningen, C. (2010). Corrective feedback in L2 writing: Theoretical perspectives, empirical insights, and future directions. *International Journal of English Studies, 10*(2), 1-27. <https://doi.org/10.6018/ijes/2010/2/119171>



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