

# **Teacher and Student Satisfaction with Response Cards: A Qualitative Investigation in the Finnish as a Foreign Language Classroom**

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## **Abstract**

Given the impressive results of response cards on student participation, academic achievement, and classroom behavior, it is surprising that response cards are not more widely utilized. This investigation examines three hypotheses for the low utilization of response cards – low teacher satisfaction, low student satisfaction, and poor cost-effectiveness. A teacher and five students in a Finnish as a foreign language classroom were interviewed about their experiences with response cards. It was found that, overall, teachers and students liked using response cards and preferred it to other review procedures used in the class. The results of the perceived cost-effectiveness of response cards were inconclusive. The results of a synthesis of the previous qualitative response card research on teacher and student satisfaction are reported and pedagogical guidelines for using response cards are included.

A well-established fact in educational research is that active student response (ASR), defined as "an observable response made to an instructional antecedent" (Heward, 1994, p. 286), has a strong positive correlation with academic achievement (Greenwood, 1991; Greenwood, Delquardi, & Hall, 1984). It is no surprise, then, that instructional strategies that include high levels of active student response are also positively correlated with academic achievement.

Response cards, "cards, signs or items that are used by students to indicate their response to a question or problem presented by the teacher" (Heward, 1997, p. 43), are one of several validated high-ASR instructional strategies. Randolph (2003) synthesized a representative sample of the single-subject research on response cards, which included Al-Attrash (1998); Armendariz & Umbreit (1999); Cavanaugh (1992); Gardner (1989); Gardner, Heward, and Grossi (1994); King (1996); Lambert (2001); Maheady, Michielli-Pendl, Mallette, and Harper (2002); Narayan (1998), Narayan, Heward, Gardner, Courson, and Omness (1990); Reynolds (2003); Rindfuss (1997), Swanson (1998); and Wheatley (1986). In the synthesis, Randolph (2003) found that response cards had educationally, and statistically, significant benefits compared to hand-raising

in terms of student participation, academic achievement, classroom disruptive behavior, and student preference. There was a 35.6% increase in student participation ( $d = 1.34$ ,  $p < 0.0001$ ), a 16.5% increase in quiz scores ( $d = 0.80$ ,  $p < 0.0001$ ), and a 7.4% increase in test scores ( $d = 0.26$ ,  $p < 0.0001$ ). Additionally, response cards were found to decrease the number of intervals of disruptive behavior in the classroom by 42.3% ( $d = 2.77$ ,  $p < 0.0001$ ). Most students (185 of 225, or 82.2%) reported that they preferred using response cards to hand-raising. In addition to students, most teachers involved in response card research have reported at least a qualified preference for response cards over hand-raising in a number of studies (Reynolds, 2003; Shields, 1996; & Swanson, 1998) The study by Armendariz and Umbriet, however, found the opposite (1999).

Despite the impressive results of using response cards, the utilization of response cards is quite low. For example, although research on response cards began as early as 1969 (Meagher, 1969), the use of response cards is still considered *innovative* by contemporary response card researchers. (Maheady et al., 2002). I theorize four explanations, or combinations of explanations, for the low utilization:

1. Student satisfaction with response cards is low.
2. Teacher satisfaction is low.
3. Using response cards is not cost-effective.
4. There is low awareness of response cards in the teaching community.

This research investigates the first three explanations (i.e., low student satisfaction, low teacher satisfaction, or low cost effectiveness) to try to understand the phenomenon of low response card utilization given their impressive educational effects. The rationale for carrying out this study is that once the explanation(s) for the poor utilization are determined, appropriate interventions to increase the utilization of response cards can be created which will, subsequently, lead to increased academic achievement.

Although there have been several studies which quantitatively investigate student preference of response cards over hand-raising, there are few studies that deeply examine student and teacher

satisfaction or the perceived cost-effectiveness of response cards. The previous studies that have reported qualitative responses concerning teacher or student satisfaction are synthesized below.

## Previous Qualitative Findings

The body of studies collected in Randolph (2003), and Randolph (2001) was used as the sample for a review of the qualitative findings on satisfaction with response cards. Of the published articles, theses, or dissertations about response cards in the sample, 10 reported qualitative responses about either student or teacher satisfaction. To conduct the review, the unique qualitative responses within each report were coded and grouped into themes. The major themes generated from students' and teachers' qualitative responses from previous the response card literature are shown in Table 1.

Response source	Theme
Students	<p>Students enjoy increased opportunity to respond with response cards.</p> <p>Response cards increase learning, memorization, and/or confidence.</p> <p>No particular student is singled-out when using response cards.</p> <p>Response cards are fun.</p> <p>The free drawing time at the end of the session is fun.</p> <p>Students are able to cheat using response cards.</p> <p>Response cards take too much time.</p> <p>There is not enough time to write down answers on response cards.</p> <p>Markers are smelly and messy.</p>
Teachers	<p>Response cards improve time on task.</p> <p>Response cards improve academic achievement</p> <p>Response cards help teachers immediately evaluate students' understanding.</p> <p>Students look at each other's responses to check or formulate their answers.</p> <p>Students' drawing on the response cards is annoying.</p>

Table 1: *Student and Teacher Satisfaction Themes from Previous Response Card Literature*

Although there have been 10 studies that reported qualitative results of teacher or student satisfaction, each of those studies used primarily a quantitative methodology. The main methods of qualitative data collection in the previous studies were open-ended surveys or informal experimenter reports of what teachers or students said. The purpose of this research is to investigate the qualitative explanations for the low utilization of response cards with a more rigorous qualitative methodology than has been used in previous studies. It is hoped that a deeper qualitative investigation will lead to more meaningful, valid, and reliable explanations of the low utilization of response cards.

## **Method**

### *Participants*

One teacher of university level Finnish as a foreign language (FFL) participated in this study. The teacher was selected based on her willingness to begin use response cards during the middle of the semester. The teacher was a 28-year-old Finnish female and had 3 years experience teaching university level FFL at the time of the study. She was certified to teach FFL and was a graduate student in Finnish language and literature.

Thirty-six international (i.e., non-Finnish) students were enrolled in one of two sections of a first semester FFL course taught by the teacher described above. Class 1 had 22 enrolled students. Class 2 had 14 enrolled students. These classes were selected because they were the only two classes taught by the teacher at the time of study.

The teacher identified a sample of six students that she thought represented the range of satisfaction levels with response cards. These six students were invited to participate in the interviews and were offered €5 compensation. Of the six students in the sample, five were willing to complete the interview. At the time of writing, five had completed the interview.

Student-participant 1 was a 23-year-old male graduate student from Thailand who was studying cultural diversity. Student-participant 2 was a 23-year-old female graduate student from Latvia

who was studying human geography. Student-participant 3 was a 22-year-old female human geography student who came from Poland. Student-participant 4 was a 20-year-old Spanish female studying English at the undergraduate level. Student-participant 5, who came from Germany, was a 27-year-old student of history.

### *Materials*

The materials used in this study were 20 response cards, 20 dry erase markers, and 20 rags used as erasers. The response cards were made of a plastic material that could be written on and erased. The material was purchased and cut into page-size (A4) rectangles at a plastics supply store. The material and labor for the response cards cost €69.09. The 20 dry erase markers cost €46.06 and the kitchen rags used as erasers cost €2.80. The materials, which were purchased in Finland, cost €117.95 for a classroom set of 20 response cards, markers, and eraser-rags.

### *Response Card Procedure*

The response card procedure used by the teacher in this study was the same as the procedure outlined in Heward et al. (1996). In short, the teacher presented a Finnish language lesson concerning grammar, general vocabulary, or adjectives and then did whole-class review using response cards. During whole class vocabulary review, she would ask the class a question, invite the students to write their answers on their response card, and have the students display the cards at the same time. She would then give quick feedback to the class and then have the students erase their answers.

Of the 10 total class sessions, which lasted 1.5 hours each, response cards were used in the last 2 sessions in class 1 and in the last 3 sessions in class 2. Each response card session proper (i.e., not including 5 or 10 minutes for passing out and handing in response cards) lasted 20 to 25 minutes.

### *Research Procedure*

The researcher conducted semi-structured interviews, individually, with the teacher and the five students targeted for further study. The single interview with each student-participant consisted of four demographic questions, concerning age, nationality, field of study, level of education, two procedural questions, concerning frequency of use, and previous experience before, and four satisfaction questions, concerning response card likes, dislikes, preference for hand-raising or response cards, and suggestions for improvement. The interview questions for the teacher concerned demographics, likes, dislikes, plans for future use, suggestions for improvement, and perceived cost-effectiveness. The teacher interview lasted about 20 minutes; the student interviews lasted about 5 minutes each.

To analyze the data, a preliminary set of codes based on the information gathered during the interviews was created, using the sentence as the unit of analysis. Next, a codebook was created using the guidelines in MacQueen, McLellan, Kay, & Millstein (1998). Then the primary researcher and a second coder, independently coded a random sample of the same 25 response units to estimate a level of interrater agreement for each code, as described in Carey, Morgan, and Oxtoby (1996). It was decided a priori that iterative cycles of revision of the coding book would continue until  $\kappa$ , a measure of interrater reliability that corrects for chance agreement (Siegel & Castellan, 1988), was .80 or higher for each code. Once the predetermined level of interrater agreement was reached, the primary researcher coded the remaining responses. A spreadsheet was used for developing the initial codes; SPSS 11.0.1. was used to calculate the  $\kappa$  statistic for each code.

## **Results**

### *Interrater Agreement*

Two iterations of the code book were needed before all codes had a  $\kappa$  of .80 or above. Problematic codes in both iterations concerned student-participants' reports of embarrassment and their level of embarrassment compared to other classroom activities.

### *Student Results*

The codes generated from the interviews with the student participants are presented in Table 2. All students said that they preferred using response cards to the other review procedures that were used in the class, such as pseudo-randomly calling on students to respond.

### *Teacher Results*

When the teacher was asked what she thought were the advantages of using response cards, she reported that it was easy to control student's learning since she immediately saw the students' answers and was surprised to find out how many had had misunderstandings. She also mentioned that using response cards involved less preparation than her standard review methods and that it was fun for her.

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#### Theme

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Response cards aid memorization – it helps to spell and write.

Response cards are fun; they are like a game.

When using response cards, there are more opportunities to respond – every trial.

There is less fear of embarrassment compared to being called on randomly by the teacher.

Teacher can give direct feedback about the response.

Sometimes there is apprehension to show the answer when unsure of it.

Response cards take some time to get used to.

Students sometimes look at each other's cards for the answer.

Response cards would not work in every educational or cultural context.

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Table 2: *Student-Participant's Satisfaction Themes*

Concerning the disadvantages, the teacher said that it took some time for her and for her students to get used to the new procedure. She also noticed that some of the students had negative attitudes towards using response cards. Specifically, she mentioned that she felt that some of the

students thought that using the response cards was childish and the some students did not want to display their answers when they were unsure it was correct. Finally, the teacher mentioned that it took between 5 to 10 minutes for the response cards materials to get distributed to each student since she had the students take one each of a response card, marker, and eraser and then pass them on. During the time that it took for the response cards to be handed out and turned back in, she mentioned that the students took this opportunity to socialize. In the future, she said that she would work out a new method of material distribution. See Table 3 for a summary of the teacher's reports on advantages and disadvantages of response cards.

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Advantages

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The teacher can immediately modify teaching based on response card information.

Response cards required less preparation than other review activities.

It was fun for the teacher.

Everybody had a chance to participate each review trial.

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Disadvantages

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Response cards take time to get used to for teachers and students.

Some students found it childish.

Some students were apprehensive about showing their answer when they were unsure.

Response cards are not appropriate for every part of the curriculum.

Distributing response card materials was problematic.

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Table 3: *Teacher-Participant's Report of Advantages and Disadvantages of Response Cards*

The teacher mentioned that if she were to continue teaching elementary Finnish in the future, she would use response cards during the whole period of the course. However, she reported that she would not use them everyday, but perhaps every second or third day, since response cards would not be appropriate for every part of the curriculum.

Concerning the cost effectiveness of the course, the teacher reported that she would not use her own money to purchase response cards, markers, or erasers since it was part of the university teaching culture not to pay for class materials oneself. However, given the hypothetical situation

that she had €500 yearly funding to spend on teaching supplies, she suggested that she would spend €120 on response cards supplies one time if she could use them over multiple years. She also said that she would spend €45 out of the hypothetical €500 periodically to purchase a new classroom set of markers.

## **Discussion**

### *Teacher Satisfaction*

Two advantages that were reported by the teacher (i.e., fun, immediate knowledge of students' understanding) in this study coincide with the advantages mentioned in previous studies. One advantage not mentioned in the previous literature is that out-of-class preparation was easier for the teacher than when using response cards compared to her usual review activities.

Concerning disadvantages, two new pieces of information were reported. In comparison to the Kellum, Carr, and Dozier. study (2001); which reported that university students, overall, did not feel that using response cards was childish; the teacher in this study did perceive that some of her university students thought that it was childish and had a poor attitude to response cards. However, while the student-participants did affirm her assumption that it took some time to get used to using the response cards and that some of the students were apprehensive to display their response when they were unsure of the response, none of the student-participants reported that they thought using response cards was childish. The second new piece of information is poor satisfaction with the time it takes to hand out and turn in response cards and with the increased socializing during those times.

### *Cost-Effectiveness*

In terms of perceived cost-effectiveness, the teacher was not willing to pay for instructional supplies with her own funds as a matter of professional culture and principle (although she would have spent university money on them), so it is difficult to meaningfully assign a monetary figure to the worth of response cards in this case. It is worth noting, however, that the material

costs in Finland are probably much higher than in many countries and that the response card material was high-grade plastic, so the price of the set of response cards in this study may seem uncharacteristically high. Heward et al. (1996) for example estimated that the cost of 40 response cards made from 'bathroom board' could be purchased from a U.S. lumberyard or home supply store for around \$20. The 20 plastic response cards in this study cost about €69 which at the time of writing equals \$84.

### *Student Satisfaction*

By comparing Tables 1 and 2, it is evident that the student results for most of the themes coincide with the themes generated from the previous literature. However, two new themes that have not been discussed in the previous response card literature surfaced in this investigation. First, some students admitted being apprehensive about showing their responses in cases where they were unsure about the correctness of their response. Additionally, students also mentioned that response cards took some time to get used to.

## **Conclusion**

The research questions in this study involved teacher satisfaction, student satisfaction, and the cost-effectiveness of response cards. Based on the qualitative synthesis of the previous literature and the analysis conducted in the FFL classroom, teachers and students were pleased, overall, with their experiences using response cards and prefer using response cards to traditional whole-class review methods. The results of the perceived cost-effectiveness of response cards were inconclusive in this study.

Based on the negative teacher and student themes reported in this article, teachers could enhance the satisfaction of response cards by following the guidelines listed below:

- Streamline the procedures for handing out and passing back the response card materials.
- Keep the presentation rate quick; however, be cautious to give students enough time to write their answers on the response cards.

- Give students time to get used to response cards before using them intensely.
- Encourage students to keep their cards hidden until the teacher prompts the class to expose their answers if the teacher wants to avoid students' simply copying responses from other students.

See Heward et al. (1996) for more pedagogical guidelines concerning response cards.

The theory generated from this study is that since teachers and students seems satisfied overall with response cards, two alternate hypotheses could account for the low utilization of response cards – low cost-effectiveness or low awareness. It would be useful for response card researchers in the future to investigate the perceived cost-effectiveness and large-scale awareness of response cards.

## About the Author

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