



Criteria for Qualitative Evaluation of Strategy Training

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Abstract

Most research on reading strategy instruction has employed quantitative methods to evaluate the impact of strategy instruction. But quantitative evaluation offers only a partial picture, and it must be complemented by qualitative evaluation. The predominant use of quantitative methodology may be attributed to the absence of established qualitative assessment criteria. There is a need for developing qualitative assessment criteria to evaluate the effect of strategy training on reading progress. Therefore, the present study aims to develop potential criteria for qualitative evaluation of the impact of strategy instruction. The study proposes five criteria: conditional knowledge, use of clusters, responsive actions, specificity in strategy description and fluent verbalisation. These five criteria emerged from the evaluative analysis and interpretation of data collected through reflective journals. The journals were maintained by 38 ninth-grade students for reflecting on their reading strategy use and reading process as part of strategy instruction. The five criteria can be useful for designing and evaluating strategy instruction.

1 Introduction

The importance of reading strategies has been widely acknowledged (Cain, Oakhill, & Bryant, 2004; Pressley & Afflerbach, 1995). Research on reading indicates that readers employ a repertoire of strategies to acquire, store, and retrieve information when they read texts (Pinninti, 2016; Rigney, 1978). Researchers identified the enormous potential that strategy training has for reading comprehension improvement and called for more strategy training experiments (Anderson, 1999; Carrell, Pharis, & Liberto, 1989; Janzen & Stoller 1998; Taylor, Stevens, & Asher, 2006). The proponents of strategy instruction assume that when readers are trained in using reading strategies, they will become autonomous learners for a lifetime. Research that examined the effect of reading strategy instruction on comprehension shows encouraging results (Dole, Duffy, Roehler, & Pearson, 1991; Guthrie, 2002; Palincsar & Brown, 1984; Scharlach, 2008; Spörer, Brunstein & Kieschke, 2009; Stahl, David, & Yaden, 2004). After conducting a meta-analysis of 23 studies, Taylor et al. (2006) concluded that participants who received training in reading strategies comprehended texts better than those who did not receive such instruction. The primary strength of strategy training is that it encourages teachers to model comprehension strategies rather than simply assess students through comprehension questions.

Research on strategy instruction so far predominantly employed quantitative measures in evaluating its impact on learning (Bimmel, 2001; Ngo, 2019; Plonsky, 2011; Rubin, Chamot, Harris, & Anderson, 2007). Pressley et al. (1992) observed that strategy instruction researchers had “relied exclusively on quantitative, hypothesis-testing analyses in arriving at their conclusions” (p. 515). Additionally, Plonsky (2011) was critical of testing null hypothesis by saying that this practice, by

ignoring process and progress data of strategy development, has done the field of strategy instruction a disservice. He also opines that dependence on p-values for discovering the significance of the impact of strategy instruction is a major barrier to the advancement of strategy instruction research (Plonsky, 2011). Quantitative methods in strategy research concealed the continuous nature of data by distilling it into crude quantifiable responses. For example, a rating scale or a quantitative survey would reduce the complex nature of strategy use to a dichotomous 'yes/no' response or to a 'five-point' rating frequency. As a result, the specific attributes of effective strategy use and the patterns of strategy development have not been thoroughly investigated.

To measure the effect of strategy instruction on participants' reading strategy use, quantitative tools such as MARSİ (Metacognitive Awareness of Reading Strategies Inventory) and SORS (Survey of Reading Strategies) are mostly employed. Although measures like the SORS (Mokhtari & Sheorey, 2002) and the MARSİ (Mokhtari & Reichard, 2002) can be used to quantify the frequency of reading strategies students use, they cannot reveal the conditions under which strategies are deployed, the clusters of strategies students use in real-life reading situations, and the specific nature of effective strategy use. Consequently, the research on reading strategy instruction failed to inform the stakeholders about the qualitative parameters that constitute effective and successful use of reading strategies. It is also argued that readers use diverse strategies depending on the texts they read and the contexts in which they read, and that context-free measures may not specifically reveal strategy use (Hadwin, Winne, Stockley, Nesbit, & Woszczyna, 2001). The predominant use of the quantitative methodology in strategy instruction research may be attributed to two reasons: the absence of assessment criteria for evaluating the qualitative improvement of reading strategies and the ease rating scales that MARSİ and SORS afford for administration and analysis.

A significant initiative to develop criteria for qualitative evaluation of listening strategies development was taken up by Chen (2007). He suggested four dimensions of such evaluative criteria: 1) externally observable modifications in learners' behaviour; 2) changes in learners' internal learning processes; 3) strategy-specific changes in learners' approach to language study; and 4) general changes in attitudes towards FL learning. These four dimensions were developed in qualitative evaluation of the strategy training programme conducted on 64 Taiwan college students. Sources of the data included 'working journals' and unstructured interviews. Though the four dimensions developed by Chen are useful in evaluating the general changes in language learner's behaviour, they are inadequate to evaluate the specific attributes of strategy development. Chen also suggested the modification of the evaluation criteria for developing reliable qualitative approaches to strategy instruction evaluation.

While quantitative evaluation through test results and scores on MARSİ and SORS constitute an essential element of strategy training evaluation, they provide only an incomplete picture of what constitutes efficient and successful use of strategies. Hence, strategy instruction research needs to employ qualitative methodology to offer an in-depth analysis of strategy instruction (Ngo, 2019; Pressley et al. 1992). Therefore, there is a need for developing efficient, process-oriented, qualitative measures for evaluating the effectiveness of strategy instruction (Chen, 2007; Plonsky, 2011; Pressley et al. 1992; Yeldham, 2019). To address this need, the present study, modelled on and inspired by Chen's research (2007), attempts to develop potential qualitative evaluation criteria for examining the impact of reading strategy instruction.

2 Methodology

2.1 Participants of the study

The participants of the study were 38 ninth-grade students (24 boys and 14 girls, aged between 14-16) of Jawahar Navodaya Vidyalaya (JNV), Hyderabad Central University Campus, Hyderabad. JNVs are run by Navodaya Vidyalaya Samithi, which is an autonomous organisation under the Ministry of Human Resource Development, Department of Secondary & Higher Education, Government of India. JNVs were established to provide quality modern education to talented rural children. They introduce English as the medium of instruction from the ninth-grade onwards. Hence, the

participants had their education in their mother tongue/regional language up to the eighth grade and studied English as a second language. The participants were developing learners in terms of English language proficiency.

2.2 Data collection

The source of data was 'reflective journals' (RJs) maintained by the participants during a strategy instruction programme which attempted to develop strategic reading and comprehension ability through scaffolding, collaboration and reflection. Reflective journal writing was incorporated to provide participants with a tangible tool for reflecting and regulating their reading strategy use and reading process. Reflective journals contained typewritten prompts (followed by blank space) such as "I used the following strategies while I was reading", "I used these strategies to deal with the difficult parts of the text", "I used these strategies effectively" and "these strategies did not work for me"-. These prompts were incorporated to guide the participants to stay focused on reporting strategy use.

2.3 Strategy instruction programme

The reading strategy instruction involved a scaffolding session, followed by peer-collaborative-strategic reading sessions and reflective journal writing. First, the researcher, who was the training instructor, offered an introductory scaffolding session for about 90 minutes to raise participants' reading-strategy awareness. Subsequently, the researcher conducted collaborative strategic reading sessions weekly twice for 90 minutes each, spread over 12 weeks. Concurrently, the participants reported their reading experience and strategy use once in two weeks, six times during the instruction programme. Six reading passages (one each for each time) were used to facilitate contextual reflection. The passages had appropriate titles, suitable illustrations and highlighted key expressions to support preview, prediction and activation of participants' schemata on the topic. Every time, a reading passage and a reflective journal were handed to the participants. They read the passage and responded in English to the prompts on the reflective journal.

2.4 Data analysis

I followed Braun & Clarke's (2006) six phases of thematic analysis and Donato & MacCormick's (1994) study in analysing the reflective journals. The analysis consisted of the following recursive processes: 1) familiarising with the data; 2) generating initial codes; 3) searching for developmental themes; 4) reviewing themes; 5) naming and defining themes; and 6) producing the report. The analysis aimed at identifying potential evaluative categories based on the developmental changes in participants' strategy use. The number of reflective journals from 38 participants ($38 \times 6 = 228$) is too large to conduct a detailed qualitative analysis. Hence, I selected nine representative participants of three proficiency groups (five boys and four girls) based on the aggregate marks of the reading comprehension tests administered before and after the intervention. Representativeness of the selected participants was verified by comparing their strategy description with that of participants left out of that group. The verification revealed that the chosen participants adequately epitomise their respective groups in strategy description. The data collection period was divided into two phases to compare the changes in participants' reading strategy use during the intervention: first phase (first three RJs) and later phase (last three RJs). This division enabled the researcher to compare reading strategy use from the first to the later phase of the strategy instruction.

Analysis and interpretation of the data were audited to ensure reliability by following Baumann and Ivey's (1997) study. An Assistant Professor from a Central University, who has over twelve years of experience in the field, was given the raw data, the definitions and the developed criteria. He was asked to 1) audit whether the analysis and interpretation were reliable, 2) review whether each criterion is distinct from others, and 3) verify whether each extract belongs to the criterion it

was tagged to. After reviewing the data, the definitions and the criteria, the auditor concluded that the analysis and interpretation of the data are reliable and trustworthy. He also found that each criterion is different from others and each excerpt fits the criterion it was marked to.

3 Findings

Data analysis and interpretation of the reflective journals led to the identification of five criteria for assessing strategy development in qualitative terms. The criteria are *conditional knowledge*, *use of clusters*, *responsive actions*, *specificity in strategy description* and *fluent verbalisation*. Table 1 illustrates the criteria with a description of each component. The five criteria were identified based on the developmental changes in participants' reading strategy use as reported in reflective journals. It was found that the participants conveyed conditional knowledge of strategies, used clusters of strategies, employed responsive actions, communicated specific details of strategy use and fluently verbalised their reading process only during the later stage when they attained proficiency in and mastery over reading strategy use.

Table 1. Components of proposed criteria with their description

S/N ^o	Criteria	Description of the criteria
1	Conditional knowledge	Conditional knowledge refers to the knowledge of 'why' a particular strategy is used, and the awareness of the conditions that influence the utility, appropriateness and efficacy of strategies.
2	Use of clusters	Clustering of strategies refers to unifying and integrating related strategies for a combined effect.
3	Responsive actions	Responsive strategic actions mean performing actions such as 'writing' or 'commenting' or 'underlining' or 'narrating'.
4	Specificity in description	Specific strategic descriptions are precise, particular, illustrative, and in detail.
5	Fluent verbalisation	Fluent verbalisation is the ability to verbalise and express one's strategy use with ease.

In the following section, these criteria are illustrated with representative excerpts from the reflective journal entries. All the excerpts are retained as in the original, including grammatical and lexical errors.

3.1 *Conditional knowledge of strategies*

The analysis of the entries revealed that the participants expressed their conditional knowledge of reading strategies during the later phase, while they merely stated what reading strategies they were using during the first phase. For instance, the transition of P3 (P stands for Participant) to "I concentrated on the bold letters because if we understand that bold letters we can somewhat guess the passage" from "I looked through bold letters" demonstrates participants' development in conditional knowledge of reading strategies (see Table 2 for more examples). The participants used prepositions 'for' or 'to', coordinating conjunctions like 'because' 'so that' and 'so', verbal phrases like 'will help' and conditional conjunction 'if' to express the conditional knowledge of reading strategies.

3.2 *Clusters of strategies*

The participants developed the ability to integrate related reading strategies for a combined effect in the later phase, whereas they employed individual strategies in the early phase. For example, the progress of P4 to "I saw pictures, I read title, I read the bold words because by reading title and bold words we come to know what is the passage is about" from "I read the title first" establishes that the participants developed the ability to form new combinations and complexes of related reading

strategies, thus forming new functional systems of strategies (see Table 2 for more examples). This excerpt also shows the interactive nature of 'previewing' and 'predicting'. Readers predict the main idea of the text only by previewing the textual resources. Another reading strategy implied in this interaction, though not expressed explicitly, is 'associating the previewed material with previous knowledge'. Only when readers associate previewed resources with their previous knowledge, can they predict the central idea of the text. Hence, it can be inferred that 'previewing', 'associating' and 'predicting' are a sequence employed for a combined effect.

3.3 Responsive actions

The participants employed 'responsive' actions during the later phase, while they employed merely 'cognitive' processes during the first phase. For example, a participant (P2) 'wrote notes' while reading and 'wrote summary' after reading in the later phase compared to the first phase in which the participant just 'recalled a summary' (see Table 2 for more examples). Recalling summary is just a mental process signifying a need for some extra effort and special action to remember the summary for a long time. But writing a summary subsumes mental processes such as recalling and organising ideas in the summary. Responsive actions such as 'summarising' can be regarded as an indication of the participants' active involvement in the reading process. 'Summarising' and 'writing brief notes' show that readers are not only comprehending the text, but also attempting to organise and re-organise the ideas of the text in their own words.

3.4 Specificity in strategy description

The participants were found to be specific and focused in their strategy use in the later phase, while they were unspecific and unfocused in the first phase. In other words, reading strategies developed from a general tactic to highly precise plans of action over the course of time. For example, the progression of P1 who "underlined the years along with the importances and names of some important persons" from "kept a star mark for important points" illustrates the participant's development from being general and unspecific in the first half to be specific and precise in the second half (see Table 2 for more examples).

3.5 Fluent verbalisations

The participants thickly illustrated their strategy use during the later stage, whereas they thinly described it in the first phase. To be precise, the participants developed the ability to reflect on their reading process and verbalise their understanding of the reading strategies. When we compare all the extracts of the later phase to those of the first phase in Table 2, they illustrate participants' development in fluent verbalisation of their strategy use. However, it should be noted that it is not the number of characters or words but the number and quality of meaningful expressions about strategy use that was noticed as an indication of fluent verbalisation.

Table 2. Participants' improvement in reading strategy use

S. No.	Criteria	Later phase	First phase
1	Conditional knowledge	I underlined some difficult words to know their meaning by guessing or referring a dictionary. I related the story with my past readings experiences because if we once recall the readings experiences we can easily can imagine what the story is about. I first read the title to guess the content in the passage.	I underlined difficult terms (P2). I remember my childhood experiences (P3). Firstly I saw the title (P4).
2	Clusters of strategies	I saw pictures and related it with title so that I can understand the introduction (content) of the text. Reading the title because of reading the title we can think about what it is about and we can also imagine how it will be. If the sentence is can't understanding to me then I will read it twice slowly and loudly for better understanding.	I saw the title (P2). Reading title (P5). I had read the sentences twice for to understand well as possible (P9).
3	Responsive actions	Summarized the story. I had also wrote the content briefly in my own words so we can remember more. Noted the important points of the article.	Recalled the summary (P1). I once again recalled the passage in my mind (P3). Remembered the important points (P6).
4	Specificity in description	I thought of the book "The Jungle Book" in that book the same story was there. I try to remember the submarines. How they look like when I saw it in Visakhapatnam. I imagined the submarines and recalled them that I saw in the discovery channel.	I remembered my childhood experience (P2). I tried to remember the past (P6). I imagined the text (P8).
5	Fluent verbalisation	All the above excerpts.	All the above extracts.

4 Discussion

The criteria that emerged from the findings of the study support some of the observations made and conclusions drawn in the literature on reading strategies. The literature on metacognitive awareness of reading strategies supports the proposal of conditional knowledge as a criterion of qualitative evaluation of strategy instruction. For instance, research indicates that high proficient readers have better metacognitive awareness of their reading strategies regarding 'why and when' strategies are useful and effective (Baker & Brown, 1984; Garner, 1987; Pressley & Afflerbach, 1995; Soto et al., 2019). Additionally, Carrell, Gajdusek and Wise (1998) reason that conditional knowledge of reading strategies is essential for a reader to know whether a particular strategy is effective, and whether it works effectively for that reader.

The development of 'use of clusters' as a criterion of qualitative evaluation of strategy training is in agreement with previous research which reveals that students who use combinations of strategies perform better than those who use individual strategies (Akkakoson, 2012; Baker, 2002; Brown,

2002; Cohen & Wang, 2018; Duke & Pearson, 2002; Nolan, 1991; Pressley, 2002a, 2002b; Vandergrift, 2003; Yeldham, 2019). Additionally, a link between academic success and the use of combinations of strategies was established (Ikeda & Takeuchi, 2006). As indicated by Macaro (2006), for a strategy to be effective in promoting performance on learning tasks, it should be clustered with other related strategies either sequentially or simultaneously. Clusters of strategies may be used by readers either to compensate for the ineffectiveness of a strategy or to strengthen the effectiveness of another strategy. For example, the same cluster, 'guessing the meaning from the context and referring to a dictionary' may be used for two different purposes. If a reader cannot guess the meaning of an unfamiliar word from the context, s/he may refer to a dictionary to find the meaning, but if s/he can guess the meaning and is doubtful about it, s/he may refer to a dictionary to crosscheck the guessed meaning.

Responsive actions such as 'commenting', 'writing summary', 'narrating to a friend' and 'underlining keywords' are obvious indicators of readers' active involvement in the reading process compared to cognitive processes such as 'recall' or 'remember'. Responsive action as a criterion of qualitative evaluation of strategy instruction corroborates three lines of research on strategies. First, previous research suggests that 'writing summary' is a strategy used by higher performing readers (Duke, Pearson, Strachan, & Billman, 2011; Lau & Chan, 2003; Winograd, 1984). Second, Paris & Myers (1981) found that 'good' readers wrote notes or summarised more than 'poor' readers. Last, Jacobs & Paris (1987) rated a 'responsive' response higher than a 'cognitive' response in their Index of Reading Awareness (IRA). They gave two points to the response 'writing it down in your own words' and only one point to 'think about remembering it' (To a prompt: 'Which of these is the best way to remember a story?').

The emergence of specificity in strategy description as a criterion of qualitative evaluation of strategy training upholds two exemplary studies on strategies. First, Donato and MacCormick (1994) found that learners' strategic actions became more focused and specific over time after writing their reflections on their language learning experience in portfolios. They conclude that strategies improve from being general to specific plans of action in the course of development. Second, Jacobs & Paris (1987) also rated a 'specific response' higher than a 'general response'. In their Index of Reading Awareness (IRA), to a prompt 'if you are reading for science or social studies, what would you do to remember the information?', the option 'ask yourself questions about the important ideas' was rated higher than the option 'concentrate and try hard to remember'. Jacobs & Paris reason that whereas the former response "*specifies* an active self-questioning strategy that allows students to monitor retention of the material", the latter just "describes *general* cognitive act indicating an understanding that some extra effort and special thinking will be required to remember the material" (p. 268; emphasis added).

The development of fluent verbalisation as a criterion of qualitative evaluation of strategy training supports the specific finding of Zhang (2001) who found that the proficient readers were more able to articulate their knowledge of the reading strategies available to them than poor readers. Additionally, previous research suggests that high proficient readers write a lot of details about strategy use in comparison to low proficient readers, who write few details (Afflerbach & Johnston, 1984; Akkason, 2012; Ikeda & Takeuchi 2006; Singhal, 2001).

The above five criteria are interrelated to one another. For example, when readers describe conditional knowledge in addition to declarative knowledge, when readers use clusters of strategies instead of individual strategies, and when they provide specific rather than general details, they are likely to verbalise their strategy use fluently. Responsive actions such as 'commenting', 'summarising' and 'underlining' are associated with active and critical strategic readers, because research (Lau & Chan, 2003; Paris & Myers, 1981; Winograd, 1984) shows that active readers perform such responsive actions.

The five criteria developed in the present study contribute to the expansion of the qualitative evaluation measures of strategy training beyond the product-oriented quantitative methods. As the impact of strategy training goes beyond an increase in the frequency of strategy use to significant changes in the specific nature in which strategies are deployed, the five criteria are to be considered

for the qualitative evaluation of strategy training. The five criteria, it is hoped, may usher in a paradigm shift in strategy instruction and its evaluation. However, these five criteria are by no means complete, and further research should add other possible components.

5 Conclusion and implications

The objective of the present study was to develop potential qualitative criteria for evaluating the effect of strategy instruction. The five criteria that emerged from the findings of the study are conditional knowledge of strategies, use of clusters of strategies, use of responsive actions, specificity in strategy description and fluent verbalisation of strategy use. These criteria were then illustrated with relevant excerpts from reflective journals maintained by the participants. Though these criteria were developed in the context of reading, they can be generalised both to learning in general and language learning in particular.

The findings of the present study have implications for strategy instruction and its evaluation. To begin with, strategy instructors may employ the five criteria for evaluating the impact of strategy instruction in qualitative terms. Employing the criteria, strategy instructors may compare pre-instruction reports with those of post-instruction to ascertain participants' development in strategy use. Second, strategy instruction and its evaluation may incorporate qualitative methods of enquiry in collecting and analysing data in addition to quantitative methods to obtain optimal benefits. Diaries, journals, portfolios and logs can be employed to collect data qualitatively. Such qualitative tools would yield significant data on how strategies develop over a period, what factors influence strategy use and how and why strategies are employed. Third, strategy training should include the component of developing metacognitive awareness of strategy use. Particularly, it should develop readers' critical awareness of the conditions under which each strategy is useful and effective. For developing metacognitive awareness, readers should be provided with a tangible tool to reflect and record their reading experiences to enable them to monitor and regulate their strategy use appropriately. Research suggests that reading journal (Pinninti, 2016; Oxford, 1990; Rubin, 2003), portfolio (Donato & MacCormic, 1994) and strategy log (Auerbach & Paxton, 1997) can be effective tools for strategy training purposes to develop learners' metacognitive awareness of reading strategies. Last, strategy instruction should emphasise the use of possible clusters of strategies. Reutzel, Smith and Fawson (2005) also suggest that teaching clusters of related strategies yields better results than teaching individual strategies, one-at-a-time. For instance, though research identified 'preview' and 'prediction' to be individual strategies, they are highly interrelated and should be integrated/clustered. Only after previewing textual resources such as title, illustrations, highlighted expressions, sub-headings, introduction and conclusion, would readers be able to predict the content of the passage they are reading.

The present study opens up directions for future research. First, other possible components of qualitative evaluation of strategy instruction may be added to modify the proposed criteria. One such addition, though not supported by the data of the present study, can be *regulation of strategy use*. Regulation refers to the process of revising or modifying the tactics and strategies based on their utility in relation to the goals set by the learner. Second, future research may be conducted to examine the applicability of the proposed criteria to other language skills, for example, listening, writing, and speaking. Third, research is needed to identify the specific contexts, texts and tasks that would prompt a language learner to employ a cluster of strategies. Last, research is also needed to identify 'why and when' a particular strategy is useful and effective – and in what sociocultural context and under what reading conditions.

Before concluding, the factors that limit the conclusions of the study need to be mentioned. First, retrospection tools such as reflective journal have drawn scepticism about their validity as data collection tools (Garner, 1982). Second, the findings of the present study are limited in its setting (a Navodaya School) and the number of participants considered for the detailed data analysis (9 representative ninth-grade students). Hence, the conclusions of the study may be generalised con-

sidering these limitations in mind. The criteria developed in this study, therefore, should be examined and reexamined with different age groups reading a variety of texts for a variety of purposes in diverse sociocultural contexts.

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