

## How are Teachers Beliefs Influenced: A Replication of Munby's (1984) Qualitative Approach to the Study of a Teacher's Beliefs

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### Abstract

*In "A Qualitative Approach to the Study of a Teacher's Beliefs", Munby (1984) undertook a study of the beliefs and principles of one science teacher. In his case study, he employed the methodologies of the Repertory Grid Technique of Kelly (1955) and interviews with the teacher involved in his study to determine the beliefs which she held. Munby's research remains as one of the earliest qualitative studies into the beliefs and principles which teachers hold and the ways in which those beliefs tend to alter the professional classroom practice. A replication of this study is necessary in that it sheds light on another method of data collection which may be used to determine teachers' belief systems and to serve as a guideline for interviewing them about how their beliefs were influenced. In the replication study done here, Maggie's decisions appeared to relate more to the balance of power in the classroom and whether the focus should be on the teacher or on the students. This was in direct contrast to Ellen in Munby's study where the six groups could be said to center more on the curriculum and content of the course and materials rather than on who was actually leading the discussion. Most likely, these differences could be accounted for their teacher training and previous classroom experiences. Some of the differences noted here offer valuable insight into teachers' beliefs and what affects them.*

**Keywords:** beliefs, replication, teacher training, prior language learning

### 1. Introduction

In "A Qualitative Approach to the Study of a Teacher's Beliefs", Munby (1984) undertook a study of the beliefs and principles of one science teacher. In his case study, he employed the methodologies of the Repertory Grid Technique of Kelly (1955) and interviews with the teacher involved in his study to determine the beliefs which she held. Munby's research remains as one of the earliest qualitative studies into the beliefs and principles which teachers hold and the ways in which those beliefs tend to alter the professional classroom practice. As such, the Munby article, although producing evidence about a science teacher and not a language teacher, is significant in the field of Applied Linguistics as well, in the specialized pedagogical area of "teacher beliefs and cognition". A replication of this study is necessary in that it sheds light on another method of data collection which may be used to determine teachers' belief systems and to serve as a guideline for interviewing them about how their beliefs were influenced.

Although the evidence produced by Munby does seem to be convincing and to be applicable to teachers of other subjects, including language, there remains the need to replicate this study using a participant involved in language teaching if we are to draw such conclusions about the “universality” of the Munby study. Therefore, there is a need for the current study to do just that.

Furthermore, the methodologies of the Munby study tend to fall short of providing solid evidence for the case that beliefs are transferred into classroom teaching. With the Repertory Grid Technique of Kelly, which will be described in more detail below, the teacher is responsible for providing the insights into her own professional behavior. As we often know, what teachers think they do in the classroom and what they actually do can be two very different areas. Therefore, the strength of the Munby argument could be bolstered with actual classroom observation to notice the extent to which the teacher’s beliefs actually are true of her teaching.

By extending the methodologies of the original case study used in Munby, the current study can be classified as an approximate replication. Approximate replication involves the duplication of the methods of the original study as closely as possible but with some altering variable, in this case a different subject teaching a different subject. Before presenting the results of the Munby study and those of the current study, it is important to first look at the recent literature on teachers’ beliefs, as the Munby article presents a review that is now over twenty years old and which is based solely on scientific paradigms.

## **2. Current research on teachers’ beliefs**

There have been many studies that have been conducted relating to teachers’ beliefs. Some studies have used self-report and observational data to compare the extent to which teachers’ beliefs are consistent with their actual teaching practices (Farrell & Lim, 2005; Borg, 1998). Other studies have found a number of inconsistencies between teachers’ stated beliefs and practices (Fang, 1996; Basturkmen, Loewen & Ellis, 2004).

Farrell and Lim (2005) presented a case study which investigated the beliefs and classroom practices of two English language teachers in an elementary school in Singapore. Farrell and Lim used interviews as their primary research tool, with three interviews each lasting one hour for each of the two participants: the first a pre-study interview to establish the teacher’s experience, the second a pre-lesson interview to obtain information about the up-coming lesson, and the third a post-lesson interview to have the teachers reflect on their experience in the lesson. In addition, they carried out two classroom non-participatory observations. Finally, random samples of students’ marked compositions were collected and analyzed in order to find further ways about how the teachers approached grammatical errors. A triangulation process was used to find convergence and divergence between the teachers’ beliefs and practices. Results from the study showed that both teachers did a large amount of focus-on-form instruction, although one preferred explicit methods to implicit methods. For example, both teachers held teacher-centered lessons during their observations, with both teachers providing explanations and instructions followed by eliciting responses from the students on their knowledge of grammatical items. Little integration of this grammar instruction was done with the speaking and writing activities which followed (Farrell & Lim, 2005: 8). Their behavior was in general consistent with their beliefs and attitudes towards grammar education, as both teachers had said in the pre-study interviews that they felt that grammar study was important.

Borg (1998) also explored the cognitive bases of teachers’ instructional decisions in grammar teaching. In this study, Borg (1998) had intense contact with the teacher being observed. A pre-observational interview was followed by 15 hours of observation in which Borg analyzed each lesson for key instructional episodes and followed up the observations with post-observation interviews, where the

transcripts were then returned to the teacher so that he could clarify or add anything to his verbiage that Borg had perhaps misunderstood. Six categories of data were presented: error analysis, reference to students' L1, grammatical terminology, grammar rules, grammar practice, and grammar and communicative ability. In each of these sets of data, Borg showed how the teacher was able to justify his actions in the classroom from prior language learning experience, teacher training or classroom experience. The results showed that the teacher was largely influenced by his teacher training, which involved participation in the CTEFLA (Certificate in English Language Teaching to Adults) and DELTA (Diploma in English Language Teaching to Adults) training courses, and taught him the value of communicative language teaching. The teacher's approach to grammar teaching was largely unplanned, due to this teaching training, and rather than give grammatical rules to the students, he let them elicit the rules through interactive class discussions (Borg, 1998: 22). Classroom experience, classroom management issues and the teacher's own prior learning experience of the traditional grammar-translation type led him to take time out of class to work on grammar points which the students had usually made in the course of the activities which preceded the instruction. Farrell and Lim (2005) and Borg (1998) show us the importance of not only interviewing the subjects but also observing them in real-time classroom situations. Munby, although a pioneer in using the grid approach to capture a teacher's beliefs, lacked empirical data when he failed to observe Ellen's actual teaching practices.

### 3. Munby (1984) Revisited

#### 3.1 Participant

The teacher featured in Munby, Ellen, was a science, health and physical education teacher for grades six through eight and had taught for six years at the time of the study. Her responsibilities for grade seven life science and grade eight earth science were in question in Munby's research. Ellen held a B.S. degree in biology and physical education, and had completed six hours of graduate study in biology. Ellen taught in a suburban middle school of about 1000 students in an independent school district in central Texas.

#### 3.2 Methodologies

Munby employed the methodology of the Repertory Grid Technique of Kelly (1955) which involves ratings on a grid between an axis of "elements" (Kelly's term) and an axis of "constructs" which are ways in which the participant thinks about the "elements". The elements and the constructs were elicited from the participant. Once the completed grid was produced, the relationships among the constructs were discussed through interviews. In this way, insight could be provided about the teacher's belief system.

#### 3.3 Data Analysis

In eliciting the "elements" for the grid, Munby asked Ellen to describe the sorts of activities which characterized her teaching. As Ellen provided the statements, Munby wrote them down on index cards. A total of twenty statements were provided, as shown in Table I.

Table I  
"Elements" Elicited from Ellen for the Grid

1. Ss write notes as T lectures
2. T asks questions for direct feedback
3. T calls on specific S to answer a question

4. T explains what is being discussed
5. T has Ss answer questions on worksheets
6. T walks around classroom and checks for problems
7. T explains one-to-one
8. T asks quick review questions for immediate answers from Ss
9. T asks if there are any questions during the lecture
10. T explains that Ss are to understand the concept
11. T involves several Ss by asking same questions around the room
12. T gives a pop test for Ss to write
13. Ss explain answers to questions in class
14. Ss work in groups on labs
15. Ss watch a film/ T.V.
16. Ss watch T do a demonstration lab
17. Ss compete in teams in a review game
18. Ss bring their projects to class and discuss them
19. Ss go to library to prepare a report
20. Ss read information and prepare questions as if there were the T

Table I: “Elements” elicited from Ellen for the grid

Next, Munby invited Ellen to take the index cards and to arrange them into groups. Munby insisted that the actual grouping of the cards – of which Ellen made five but then changed to six – was not significant to the procedure, but that “the assumption is that ways in which Ellen characterized the cards within each group and distinguished one group from another represents something substantial about how she thinks of her teaching” (Munby, 1984: 30). The groups are presented below.

Once the groups were determined, Munby asked Ellen to talk her way through the groups and to discuss what each of the groups meant in more specific detail. These statements formed the twenty “constructs” for the grid, as presented in table II below.

Table II  
Ellen’s Terms for the “Construct” Axis

1. Learning by seeing and doing
2. See the concept come to life
3. Certain results T is after
4. Using things at home
5. A chance to use their imagination
6. Ss put more of themselves into it
7. Ss do the work
8. Originality
9. Get it into their heads
10. Learning to determine what’s important
11. Ss use what they learn from lecture
12. A way of testing
13. T wants them to understand

14. T doesn't want Ss to feel frustrated
15. T provides them the information
16. T keeps them alert
17. To see if T is getting through
18. Ss respond enthusiastically
19. Learning to work in groups
20. Learn how to paraphrase

Table II: Ellen's terms for the "construct" axis

According to the procedures of the Repertory Grid, the statements appearing as "elements" were placed on one axis of a blank grid while the "constructs" were placed on another axis. Each element was ranked on a scale of 1-3 by Ellen depending on the rate of association it held for her. A rating of "3" meant "definitely associated", "2" meant "neutral", and "1" meant "definitely not associated." Munby wrote that "the operative assumption at this point in the procedure is that the phrases used by Ellen to distinguish or characterize the groups of elements are representations (at one level) of some set of coherent beliefs and principles (at another level) about her teaching, and the immediate task becomes one of determining what these might be" (Munby, 1984: 30). The completed grid with rankings produced by Ellen is provided below in Table 3.

In a second interview, Ellen was probed for what might underlie her belief system, that is where her beliefs might have originated: in her experiences as a high school student, from her university courses, through student teaching, and so forth. Also, she was asked to comment again on why the groups of "constructs" were grouped together in the way they were. It was these groups which showed what Ellen valued most as a teacher. Munby provided the following labels for these groups:

- Group 1: Student success at curriculum content and their subsequent confidence.
- Group 2: Making them think.
- Group 3: "Daily life" information.
- Group 4: Application and transfer making factual information more real.
- Group 5: Successful use of resource material.
- Group 6: Group work and social learning.

3= definitely associated  2= neutral  1= definitely not associated	1. Learning by seeing and doing
	2. See the concept come to life
	3. Certain results the T is after
	4. Using things at home
	5. A chance to use imagination
	6. Put more of themselves into it
	7. Ss do the work
	8. Originality
	9. Get it into their heads
	10. To determine what's important
	11. Ss use what they learn from
	12. A way of testing
	13. T wants them to understand
	14. T doesn't want Ss to feel frustrated
	15. T provides them the information
	16. T keeps them alert
	17. To see if T is getting through
	18. Ss respond enthusiastically
	19. Learning to work in groups
	20. Learn how to paraphrase

1. Ss write notes as teacher lectures	3	3	3	1	1	2	3	2	3	3	1	1	3	2	3	3	2	2	1	3
2. T asks questions for direct feedback	1	3	3	1	2	2	3	1	3	1	3	3	3	3	3	3	3	3	1	3
3. T calls on specific S to answer a question	1	3	3	1	2	2	3	1	3	3	3	3	3	3	3	3	3	3	1	3
4. T explains what is being discussed	1	3	3	1	1	1	1	1	3	1	1	1	3	3	3	2	1	1	1	1
5. T has students answer questions on worksheets	3	2	3	1	1	1	3	1	3	3	3	3	3	3	3	2	3	1	1	1
6. T walks around room and checks for problems	1	1	3	1	1	1	3	1	3	1	3	3	3	3	3	2	3	1	1	1
7. T explains one-to-one	1	2	3	1	1	1	3	1	3	3	3	3	3	3	3	1	3	2	1	1
8. T asks quick review questions for immediate answers from Ss	1	2	3	1	1	1	3	1	3	3	3	3	3	3	2	3	3	3	1	1
9. T asks if there are any questions during the lecture	1	1	3	1	1	3	2	2	3	3	3	3	3	2	3	2	3	3	1	1
10. T explains that Ss are to understand the concept	1	3	3	1	1	1	3	1	3	3	1	1	3	1	3	1	1	1	1	1

11. T involves several Ss by asking same question around the room	1	3	3	1	1	1	3	1	3	3	3	3	3	3	3	3	3	1	1	
12. T gives a pop test for Ss to write	1	3	3	1	1	1	3	1	3	3	3	3	1	1	1	3	3	3	1	1
13. Ss explain answers to questions in class	3	3	3	1	3	3	3	3	3	3	3	3	3	2	2	2	3	3	1	3
14. Ss work in groups in labs	3	3	3	1	1	3	3	1	3	1	3	3	3	3	3	2	3	3	3	1
15. Ss watch a film/T.V.	3	3	3	1	1	1	1	1	3	3	1	1	3	3	2	2	3	2	1	1
16. Ss watch T do a demonstration lab	3	3	3	1	1	1	1	1	3	3	1	2	3	1	3	3	3	3	1	1
17. Ss compete in teams in a review game	3	1	3	1	1	3	3	1	3	1	3	3	3	3	2	3	3	3	3	1
18. Ss bring their projects to class and discuss them	3	3	3	3	3	3	3	3	3	1	3	2	3	3	1	1	3	2	1	1
19. Ss go to library to prepare a report	3	2	3	1	1	1	3	2	3	3	2	2	2	1	1	1	1	1	1	3
20. Ss read information and prepare questions	2	2	2	1	3	3	3	1	3	3	1	1	3	2	1	1	1	1	1	3

Table III: Ellen’s completed repertory grid

### **3.4 Conclusions and Limitations**

By using the repertory grid, Munby was able to capture some of Ellen's deepest thoughts into her teaching style and preferences. As a science teacher, judging from her answers in table III, it can be concluded that she favored a balance between teacher-fronted and student-fronted lessons. She appeared to give students a variety of tasks – lab work, reports, question and answer sessions, films, review games, projects, etc. - in the hopes of motivating and educating them on the subject. There are activities which she believed fostered imagination, allowed students to use what they had learned, taught them how to paraphrase, and gave them a chance to respond enthusiastically.

By answering “3” on statements which were highly associated, the things which Ellen valued most could be seen. For example, in element 1, Ellen recorded that she thought that lecturing allowed students to see the concept come to life, learn information (“get it into their heads”), provide them with information and allow them to understand, and to keep them alert. The larger number of 3's in this area showed that Ellen valued lecturing.

## **4. Current Study**

### **4.1 Participant**

The participant selected for this study is named Maggie (not her real name). Maggie is an American female teacher currently teaching in a department of English language and literature in a women's university in Tokyo, Japan. Although having only arrived at this university five years ago, Maggie has taught English as a Foreign Language (EFL) in Japanese university settings for over fourteen years. Maggie holds a B.A. in English and an M.A. in Applied Linguistics. Prior to coming to Japan, she served as an English teacher in an American public high school for three years.

### **4.2 Methodologies**

Like Munby, the current case study utilized the methodologies of the Repertory Grid of Kelly and one-to-one interviews with the teacher involved in the study. However, taking Munby one step farther, this study also used the instrument of classroom observation. One ninety-minute class was observed for purposes of this research to show any congruencies between the participant's stated teaching behaviors and actual classroom performance. For replication, the same twenty “elements” from table one above were used, with slight alterations in wording to adjust to the language classroom. Therefore, element 16 was changed to “Students listen to the teacher do a sample dialogue”, and element 18 became “Students do role plays in front of the class”.

### **4.3 Data Analysis**

In the current study, Maggie grouped the cards into five categories. When questioned about her thought processes in dividing the cards into groups, Maggie stated that her experience in teaching influenced her decision. The five groups that she made are categorized as follows:

Group 1: Teacher-centered lesson

Group 2: Teacher serves as a monitor

Group 3: Students take responsibility for their learning outside of the classroom

Group 4: Great communication between teacher and students

Group 5: Tests and evaluations



In this way, Maggie’s decisions appeared to relate more to the balance of power in the classroom and whether the focus should be on the teacher or on the students. This was in direct contrast to Ellen in Munby’s study where the six groups could be said to center more on the curriculum and content of the course and materials rather than on who was actually leading the discussion. Most likely, these differences could be accounted for their teacher training and previous classroom experiences.

In the next part of the experiment, Maggie was provided with the same 20 “constructs” which Ellen produced in Munby’s study. As these constructs were deemed to be universal in any educational setting, they were not altered at all for the current study. Therefore, the constructs are the same as table two above.

Finally, as in Munby’s study, Maggie was asked to rank the relationship between the elements and the constructs on a scale of 1 to 3. The complete grid with her answers is produced below.

	1. Learning by seeing and doing	2. See the concept come to life	3. Certain results the T is after	4. Using things at home	5. A chance to use imagination	6. Put more of themselves into it	7. Ss do the work	8. Originality	9. Get it into their heads	10. To determine what’s important	11. Ss use what they learn from lecture	12. A way of testing	13. T wants them to understand	14. T doesn’t want Ss to feel frustrated	15. T provides them the information	16. T keeps them alert	17. To see if T is getting through	18. Ss respond enthusiastically	19. Learning to work in groups	20. Learn how to paraphrase
3= definitely associated  2= neutral  1= definitely not associated																				
1. Ss write notes as teacher lectures	2	1	3	1	1	1	1	1	3	3	1	2	3	1	3	1	1	2	1	3
2. T asks questions for direct feedback	1	2	3	1	3	3	3	2	3	3	3	3	3	1	2	3	3	2	1	3
3. T calls on specific S to answer a question	1	2	3	1	1	3	1	1	3	3	3	3	3	1	2	3	3	2	1	3
4. T explains what is being discussed	2	2	3	2	1	1	1	1	3	3	1	1	3	3	3	1	2	2	1	1
5. T has students answer questions on worksheets	3	3	3	2	2	2	3	2	3	3	3	3	3	2	2	1	3	2	2	3

6. T walks around room and checks for problems	3	3	1	3	2	3	3	2	3	2	3	1	3	3	2	3	3	2	2	2
7. T explains one-to-one	3	3	3	3	1	2	2	1	3	3	3	1	3	3	3	1	3	1	1	1
8. T asks quick review questions for immediate answers from Ss	1	2	3	1	3	3	3	2	3	3	3	3	3	1	2	3	3	2	1	3
9. T asks if there are any questions during the lecture	1	2	3	1	3	2	2	2	3	3	3	3	3	1	2	3	3	2	1	3
10. T explains that Ss are to understand the concept	1	1	3	1	1	1	1	1	3	3	2	1	3	1	3	1	2	2	1	1
11. T involves several Ss by asking same question around the room	1	2	3	1	2	3	1	1	3	3	3	3	3	1	2	3	3	2	1	3
12. T gives a pop test for Ss to write	1	2	3	1	1	1	3	1	3	3	3	3	1	1	1	3	3	1	1	1
13. Ss explain answers to questions in class	3	2	3	3	2	3	3	2	3	3	3	3	3	1	1	2	3	1	1	3
14. Ss work in groups in labs	3	3	3	3	3	3	3	3	3	2	1	1	3	3	1	3	3	3	3	1
15. Ss watch a film/T.V.	3	3	2	1	1	1	1	1	2	1	1	1	1	3	2	1	3	1	1	1
16. Ss watch T do a demonstration lab	3	3	2	3	1	3	3	1	3	3	2	1	3	1	1	3	3	2	1	1

17. Ss compete in teams in a review game	3	3	2	3	1	3	3	2	3	2	3	3	3	2	1	3	3	2	3	1
18. Ss bring their projects to class and discuss them	3	3	2	3	3	3	3	3	3	2	2	2	3	2	1	3	3	2	1	1
19. Ss go to library to prepare a report	1	2	3	1	2	3	3	2	2	3	2	2	2	1	1	2	2	1	1	1
20. Ss read information and prepare questions	1	1	2	1	2	3	3	2	3	2	2	2	3	1	1	2	2	1	1	1

Table IV: Maggie's Completed Repertory Grid

In her answers on the grid, Maggie displayed an attitude very different from Ellen in Munby's study. For example, where Ellen seemed to value lecturing, Maggie was not fond of it and seemed to be dissuaded from a teacher-centered classroom. This could be concluded from the low number of 3's that she gave to element 1. Instead, she seemed to like the role of "monitor" more than "lecturer" as in element 6, she answered positively about the teacher walking around the room and checking for problems while the students were busy doing an activity.

From their diverse answers on the grid, the two teachers shared little in common in their belief systems about their roles. In fact, of the 400 possible answers on the grid, only 245 of them were the same (61%). However, the purpose of this replication study is not to show the areas in which two teachers were the same or different, but rather to show the methodology of research, that is, the grid as either an acceptable form research tool or not.

The repertory grid and think-aloud interviews do seem to be solid in their role of soliciting the beliefs of teachers. However, in order to provide real empirical data, observations would help to determine if the beliefs which teachers stated they held were in fact applicable to their classroom practices. The classroom observation that I did for my own study showed that the participant showed some inconsistencies in her beliefs and actual teaching. For example, answers in her grid pointed to the belief that she had regarding group work and student participation. However, in her observed lesson, although there was group work, she offered little in assistance to error correction and serving as a "monitor" to the students.

## 5. Concluding Remarks

Unlike more traditional testing methods, the repertory grid is good in that it is more person-centered. It allows the subject to come up with their own ideas to fill in the element and construct sections of the grid. By making use of the grid, Munby was one of the first researchers to measure the belief system of teachers. This is an approach to gathering data which is applicable to all education settings, including foreign language learning. Although Munby's findings were limited in their lack of empirical value, the study did provide one step for observing teacher's beliefs. Yet, it is only a first step. Further data should be gathered

in using other methods, such as classroom observation. If so, more reliable data can be recorded. Therefore, the current study calls on researchers and teachers alike to produce qualitative and quantitative projects measuring teachers' beliefs and the relationship of those beliefs into the classroom.

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