

Q METHODOLOGY: AN OVERVIEW AND STEPS TO IMPLEMENTATION

Siti Maftuhah Damio

Universiti Teknologi MARA
maftuhah@salam.uitm.edu.my

Received: 1 May 2016

Accepted: 18 May 2016

ABSTRACT

The research methodology known as Q Methodology is relatively unknown in the Malaysian sphere. Nonetheless, if you are uncovering 'points of view' held around a topic, Q Methodology is one of the methods to consider. There are seven (7) steps in Q Methodology implementation which combine both qualitative and quantitative methods. The aim of this article is to give an overview and steps to implementation of Q Methodology. Q Methodology, in this article is exemplified through a study on the conceptions of Autonomy in Language Learning.

Keywords: *Q Methodology; Qualitative; Quantitative; Subjectivity; Points of View*

INTRODUCTION

Q Methodology was proposed and developed by a British physicist-psychologist William Stephenson in the field of educational psychology in the 1930s. Brown, Durning & Selden (2008, p. 722) explained that:

“Q Methodology is best understood as a type of research that identifies the operant subjectivity of individuals concerning a particular subject. The methodology encompasses a broader philosophy of how subjectivity can best be studied, an inherent epistemology and a method that includes a series of well-defined steps or phases.”

It was “designed expressly to explore the subjective dimension of any issue towards which different points-of-view can be expressed” (Stenner, Watts & Worrell, 2008, p. 215). The development of Q arose from a perceived need to bring a scientific framework to the world of subjectivity, which Brown (1993: p. 94) referred to as the “basis for a science of subjectivity”. This is achieved by involving the use of factor analytic technique for grouping like-minded individuals. Basically, Q is utilised in uncovering opinion or perception of clusters and according to Brown (2004: p. 1), Q is often used for the following:

1. Identifying important internal and external constituencies
2. Defining participant viewpoints and perceptions
3. Providing sharper insight into preferred management directions
4. Identifying criteria that are important to clusters of individuals
5. Examining areas of friction, consensus and conflict
6. Isolating gaps in shared understanding

There has been a range of studies which have adopted Q Methodology in a variety of fields, such as nurse education (Barker, 2008), leadership (Militello & Benham, 2010), Mathematics education (Coogan & Herrington, 2011), psychology (Watts & Stenner, 2005; Shemmings, 2006), environment (Webler, Danielson & Tuler, 2007) and software engineering (Brown M., 2004) to name a few. The application of Q Methodology in the field of language learning and teaching is yet to gain momentum. Therefore, in this article, a study on the conceptions of Autonomy in Language Learning

(ALL) is used to exemplify the overview and steps to implementation of Q Methodology. The sections hereafter present the steps to implementation of Q Methodology.

THE STAGES OF Q METHODOLOGY

One of the best ways to comprehend Q Methodology is to look at the stages involved in the whole process. This is shown in Figure 1.

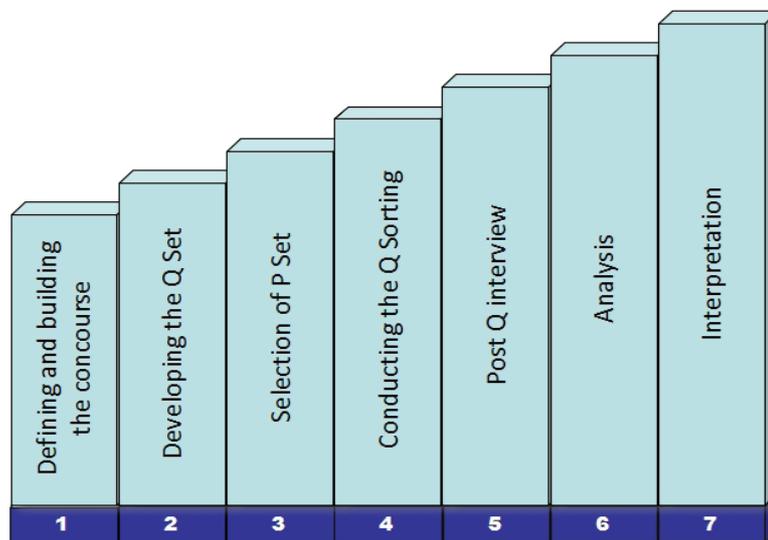


Figure 1: The stages of Q process
(All the seven stages are carried out once the research questions are formulated.)

Step One – Defining and building the concourse

Defining the concourse is the first step. The ‘concourse’ is the collection of possible statements people make about the topic. Van Exel and De Graaf (2005) stated, “the gathered material represents existing opinions and arguments, things lay people, politicians, representative organizations, professionals, scientists have to say about the topic; this is the raw material

for Q” (p. 4). The subjectivity of what people are saying about the topic is of inherent interest here. Meanings that are assigned to the discourse, according to Davis and Michelle (2011, p. 566) are “inherently social and contextual and . . . audience members must inevitably draw on the discourses of the wider social world in constructing and articulating an account from their own unique location”. The self-referential subjectivity provides one of the bases for Q researches. The representations of subjectivity and eventually meanings are not only possible through verbal but also pictures, objects, audio, video recordings or even smell.

McKeown and Thomas (1988) distinguish two types of discourse – naturalistic and ready-made. Naturalistic discourses are taken from respondents’ oral or written communications, like questionnaire, interview and focus group, while ready-made discourses are taken from sources like existing print media (newspapers articles, magazines, public records, websites). An example of the definition given by one of the respondent is;

For me, AUTONOMOUS/INDEPENDENT LANGUAGE LEARNING is where the learner intrinsically learns the language where the power is wholly handing on to them. The students need to find their own way to master the language; by using the correct techniques, by utilizing good gears, by maximizing various kinds of materials and a lot more. By this too, students can pepper up their language learning by using their own creativity. Thus, it could boost up their self-esteem that could make their understanding of the language even well. Somehow, this kind of learning will reduce the traditional talk and chalk techniques used by teachers. However, the guidance from the teachers is still necessary.

(Ayuni, B.Ed TESL)

An example of the raw statement on the definition of autonomous language learning taken from the literature review is;

We can define an autonomous person as one who has an independent capacity to make and carry out the choices which govern his or her actions. This capacity depends on two main components: ability and willingness. ... Ability depends on

possessing both knowledge about the alternatives from which choices have to be made and the necessary skills for carrying out whatever choices seem most appropriate. Willingness depends on having both the motivation and the confidence to take responsibility for the choices required.

Littlewood (1996: p. 428)

The theoretical categories used in this stage can be formed based on existing theory or created based on the concourse. One thing that has to be remembered here is that these categories are referred to as ‘artificial categories’. They are “deemed to be artificial as the statements are filtered according to the researcher’s interpretation of the statements” meaning, while Q insists that meaning is only conferred by the sorter in the context of a singular situation (Morris, 2004, pp. 167-168).

Apart from that, to strengthen the formulation of the Q statements, guidelines from Webler, Danielson and Tuler (2009, p. 16) in relation to what good Q-statements should consist of were also employed to get a standardized format. They are summarised as follows: Salient - most important, prominent, relevant, significant; Meaningful to the people doing the Q sorts; Understandable; Have excess meaning - can be interpreted in slightly different ways; Must be something that people are likely to have opinion about; Having a mix of positively and negatively worded statements is probably wise, if it can feasibly be done. Gaebler-Uhing (2003) added that the statements should be subjective opinion statements (not statements of facts) that could generate feelings regarding the topic. The statements were then reviewed more extensively by the content experts in the field of ALL.

Step Two – Developing the Q Set

The second step is the development of the Q set. A Q set is “a purposive selection of statements” (Brown, 2003: p. 2) drawn from the concourse. Apart from the Q set, there is also a need to prepare a Q grid as well as the ‘condition of instruction’.

The selection of statements for the Q set is of crucial importance, though according to Brown (1980 in Exel & Graaf, 2005: p. 5), it remains

“more an art than science”. Corresponding to this, Webler, Danielson and Tuler (2009: p. 17) stated that “the art of good research is to make all methodological judgments transparent and to have convincing explanation for the choices you make”. The Q statements that have undergone the first round of categorisations were yet again scrutinised for further enhancement. The statements went through another eight cycles of editing to eliminate ambiguity and repetition. This is critical, as this process helps to ascertain the representativeness and comprehensiveness of the statements in order to remain true to the focus of the study. This theoretical categorisation is to help reduce researcher’s bias. Some of the artificial categories cited in the first round of categorisations were collapsed with similar categories and were then renamed. For example, the category on ‘collectivism’ and ‘individualism’ were joined together and renamed ‘culture’, while categories like ‘teachers’, ‘practices’ and ‘degrees’ remained. In all, there were eight categories, namely ‘culture’, ‘teachers’, ‘practices’, ‘degree’, ‘mode of learning’, ‘context’, ‘skills’ and ‘philosophy’. The same took place with the statements under those categories. Examples of the statements include, ‘ALL involves the transfer of control to the learner’ from the teacher category, and ‘All is only applicable in the Western setting’ from the culture category. Typically, at the end of the process, the Q set will consist of 40 to 80 statements, which according to Watts and Stenner (2012: p. 61).

40 statements were chosen as the final Q Set for this study on the conceptions of ALL, incorporating an equal balance of five statements within each category to represent the view of autonomy in language learning. They were shown to my supervisor who was also an expert in the field of autonomy for face validity. The 40 statements (Appendix 1) were assigned a number randomly. This numbering system is for the purpose of analysis. For example the “ALL involves the transfer of control to the learner” was randomly numbered as statement 2 while “ALL is only applicable in the Western setting” was randomly numbered as statement 39. Using the Microsoft PowerPoint programme, each of the statements was copied into boxes. They were then printed before each of the boxes containing the statement was cut individually and then laminated. This is known as the Q-deck, which is to be used in the Q-sorting.

The next item to prepare is a Q-grid (score sheet). The preparation of this Q grid was made more manageable with Microsoft Excel. This study’s

Q-grid is a continuum ranging from -5 (least like what I think) to +5 (most like what I think) that took a quasi-normal distribution (Figure 2). According to Brown (1980), nowadays most Q-Methodology study employ a relatively flattened distribution while Excel and Graaf (2005: pp. 5-6) emphasised that the flatter the distribution, the more the participants are to have strong and well-articulated opinions on the topic at issue. Since the participants of this study are trainee teachers who are expected to have a high interest, as they had gone through the process of learning a second as well as a third language, the flatter distribution was adopted. The Q-grid was printed on two different types of papers for different purposes. The first was on an A3 for the purpose of the Q-sort and the second was on an A4 for recording the completed Q-sort. The A4 Q-grid has additional information printed on it – name of participants, year of study, date and time of doing the Q-sort.

The last mechanism needed in Q-methodology is the Condition of Instructions (Appendix 2) to be used during the Q sorting. It contained a short overview of what the study is about, the question that the participants have to consider while doing the Q-sort and, the instructions on how to do the Q-sort. The sorting instruction for this study is based on the research question of the conception of ALL. The participants sorted the cards in a manner that reflect their thinking about ALL following the ‘least like how I think’ to ‘most like how I think’. This condition of instructions was printed on an A4 and participants could always refer to it during the Q-sorting. The three items were then pilot tested.

In preparing the three entities needed for the Q sort, certain beliefs are adopted. The beliefs are:

- It is not possible to predict what salience a Q participant will read into a Q statement
- Not all Q participants will read the same salience into every statement.
- Some participants might assign positive or negative salience to every statement.

Webler, Danielson and Tuler (2009: p. 17)

Step Three – Selection of P Set

The third stage involves the selection of the Q participants. These participants are referred to as the ‘P-set’. The selection of Q participants is not randomly done, rather, participants are deliberately selected to be as heterogeneous as possible. Q methodology tends to involve “a structured sample of respondents who are theoretically relevant to the problem under consideration; for instance, persons who are expected to have a clear and distinct viewpoint regarding the problem” (Exel & Graaf, 2005: p. 6). Since the Q participants are the variables and not the samples, the number of Q participants does not need to be very large, typically no more than 40 (Brown, 2003: p. 3). On a more recent note, Webler, Danielson and Tuler (2009: p. 21) commented on this by saying that the typical number of participants sufficient for the study is between one to three dozens. Malay trainee English teachers who are undergoing a Bachelor of Education in Teaching of English as a Second Language (TESL) from different year groups made up the 31 participants in this study. All participants were voluntary.

Step Four – Conducting the Q Sorting

The Q Sorting is when the individual participant ranks the Q statements into a Q Grid, a forced quasi-normal distribution (a pre-set pattern grid with a scale labelled ‘most like what I think’, ‘neutral’ and ‘least like what I think’; Figure 2). Firstly, the participants have to read the ‘condition of instructions’ for the sorting. This is the statement given to the participants to help them sort the Q Set. For this study, the ‘condition of instructions’ is ‘What does autonomy in language learning mean to you?’. Then, they have to read the cards, on which the statements were printed and pile them into three groups – ‘most like what I think’, ‘neutral’ and ‘least like what I think’. The next stage is to take the individual pile, e.g., the ‘most like what I think’ pile, reread the individual cards to make finer distinctions among the statements and slot them into the grid in what they feel is the most appropriate location (Figure 2).

Step Six – Analysis

A by-person correlation and factor analytic technique was employed to analyse the 31 completed Q Sorts. The by-person correlation matrix reflects the relationship of each Q Sort to the other Q sort. The matrix was then factor analysed to look for patterns among the Q Sorts, which were then rotated. This process resulted in a number of factors and in this study, it resulted in five factors. The researcher then decided on the number that he/she would like to keep for interpretation. This is based on certain guidelines like simplicity, clarity, distinctness and stability of the factor (Webler, Danielson & Tuler, 2007: p. 27). In this study four factors were retained. For the purpose of analysis, conventional software for statistical analysis can be used but there is also dedicated computer software for Q analysis. For this study, PQMethod was chosen, which can be downloaded free and is available at:

<http://www.rz.unibw-muenchen.de/~p41bsmk/qmethod/>

There are links for Windows as well as for Mac. This software allows for data input, generating the initial matrix, making the processes of factor extraction and rotation more straightforward (Mckenzie, 2009: p. 114). This is further explained in another article on Q Methodology Analysis: An overview and steps to interpretation.

Step Seven – Interpretation

The interpretation of factors, according to Webler, Danielson and Tuler (2007: p. 27) is when the researcher “writes a description of the perspectives that the factor represents”. This is achievable by comparing and contrasting the positing of the statements in the reconstructed Q sorts that represent each factor. Interpretations are also guided by the semi-structured interviews carried out after the Q Sorting, the literature review on the topic, previous research and cultural knowledge.

CONCLUSION

The seven steps in Q Methodology explained in this article is an overview, of which further explanation and elaboration are available in related literature. This article is to give a glimpse of Q Methodology with the hope of engaging more people to learn and use Q Methodology as an alternative method in research.

REFERENCES

- Barker, J. H., (2008). Q Methodology: an alternative approach to research in nurse education. *Nurse Education Today*, 28, 917-925.
- Brown, S. R. (2003). *Empowerment as Subjective Operant*. Paper presented at the Workshop on “Measuring Empowerment: Cross-Disciplinary Perspectives” held at the World Bank in Washington D.C. on February 4 and 5, 2003.
- Brown, S.R. (1993). A primer on Q methodology. *Operant Subjectivity*. 16(3/4): 91-138.
- Brown, S.R. (2004). Q methodology. In M.S. Lewis-Beck, A. Bryman, & T.F. Liao (Eds.), *The SAGE encyclopedia of social science research methods* (Vol. 3, pp. 887–888). Thousand Oaks, CA: Sage
- Brown, S.R., Durning D. W. and Selden S.C. (2008). Q Methodology in Gerald J . Miller and Kaifeng Yang (eds.). *Handbook of Research Methods in Public Administration*. (2nd Edition) . Boca Raton: CRC Press.
- Bryman, A. (2008). *Social Research Methods*. Oxford: Oxford University Press.
- Cohen, L. C. & Manion, L. (1994) *Research Methods in Education (4th ed.)*. London: Routledge
- Coogan, J. & Herrington, N., (2011), Q Methodology: An overview. *Research in Secondary Teacher Education*, 1(2): 24-28

- Davis, C. H. & Michelle, C., (2011). Q Methodology in Audience Research: Bridging the qualitative/quantitative 'divide'?. *Journal of Audience & Reception Study*, 8(2), 559-593.
- Exel, V. J. & Graaf, d. G. (2005). *Q Methodology: A Sneak Preview*. Retrieved from: www.jobvanexel.nl.
- Gaebler-Uhing, C. (2003) Q-methodology: a systematic approach to assessing learners in palliative care education. *Journal of Palliative Medicine*, 6, 438-442.
- McKenzie, J. A. (2009). *Constructing the intellectually disabled person as a subject of education: discourse analysis using Q-methodology*. (Doctoral dissertation, Rhodes University). Retrieved from <http://eprints.ru.ac.za/1652/>
- McKeown, B., & Thomas, D. (1988). *Q methodology*. London: Sage Publications.
- Militello, M. & Benham, M. K. P. (2010). "Sorting out" collective leadership: How Q Methodology can be used to evaluate leadership development. *The Leadership Quarterly*, 21, 620-632.
- Morris, S. P., (2004). *Attitudes to travel: an application of Q methodology*. (Doctoral dissertation, University of Keele).
- Shemmings. (2006). Quantifying qualitative data: An illustrative example of the use of Q methodology in psychosocial research. *Qualitative Research in Psychology*, 3(2): pp147-165
- Stenner, P., Watts S., and Worrell M., (2008). 'Q Methodology' in Carla Willig and Wendy Stainton-Rogers (eds.), *The Sage Handbook Of Qualitative Research in Psychology*. Los Angeles, CA: Sage, (pp. 215-239).
- Van Exel NJA, G de Graaf. (2005). *Q methodology: A sneak preview*. Retrieved from: www.jobvanexel.nl
- Watts, S., & Stenner, P. (2012). *Doing Q Methodological Research: Theory, Method and Interpretation*. London, Thousand Oaks CA: Sage Publication.

Watts, S. and Stenner, P. (2005). Doing Q Methodology. *Qualitative Research in Psychology*, 2, pp. 67-91.

Webler, T., Danielson, S., and Tule, S., (2007). *Guidance on the use of Q Method for Evaluation of Public Involvement Programs in Contaminated Sites. Report Prepared Social and Environmental Research Institute, 278 Main Street, Suite 404 Greenfield, MA 01301 (413) 773-9955. Retrieved from: www.seri-us.org.*

Webler, T., Danielson, S., and Tuler, S. (2009). *Using Q method to reveal social perspectives in environmental research.* Green- field, MA: Social and Environmental Research Institute.

APPENDIX 1: 40 STATEMENTS FOR Q SET

The Statements

1. ALL is when language learners enjoy a high degree of freedom
2. ALL involves learners having some control over their learning
3. ALL promotes the freedom of the learners
4. ALL only involves the use of authentic (not educational) materials
5. ALL involves the universal human characteristics of independence and interdependence
6. ALL can take place in a teacher-directed context
7. ALL is learning a language without the help of a teacher
8. ALL involves learning from and interacting with others
9. ALL involves using self-instructional materials
10. ALL involves accepting that freedom is not absolute
11. ALL involves a transfer of control to the learner
12. ALL involves taking responsibility for your own learning
13. ALL involves putting a lot of effort into language learning
14. ALL is a willingness to act independently and in cooperation with others as a social and responsible person
15. ALL is about empowering learners to improve their conditions, to become authors of their own world
16. ALL involves self-access language learning in the Self-Access Centre (SAC)
17. ALL involves using new technologies (e.g. computer-assisted)
18. ALL takes place both inside and outside of the classroom
19. ALL often occurs in social groups (family, clubs or community group)
20. ALL involves learners' active participation in planning and evaluating their own learning
21. ALL is having the skills to be a proficient language learner
22. ALL is when learners improve their language learning within the institution
23. ALL involve the development of the learner's sense of individuality
24. ALL involves teachers giving instructions to learners on what to do
25. ALL is present in different degrees at different times
26. ALL is having the skills to be a flexible language learner

27. ALL is a steady state achieved by successful language learner
28. ALL is communicative language learning
29. ALL involves acquiring skills for independent learning
30. ALL is having effective learning strategies
31. ALL is a constant negotiation between the self and the social
32. ALL is learner-centred learning
33. Memorising words and sentences is an example of ALL
34. ALL can only occur outside formal classroom
35. ALL is having the skills to be a responsible language learner
36. ALL is when learners improve their language outside the institution
37. ALL development is slowed when there is teacher intervention
38. ALL involves collaboration with teachers/peers helping the learners learn the language
39. ALL is only applicable to Western setting
40. ALL involves teachers training the language learners how to learn

APPENDIX 2: CONDITIONS OF INSTRUCTION

A Study on Autonomy in Language Learning

I am interested in your opinion about Autonomy in Language Learning (ALL). What you will be asked to do is to order 45 cards that contain statements from people like you about what ALL means to you. Rank-order the statements according to most or least like what you think. This study is about your opinions, so there are no right or wrong answers.

Instructions

1. There are 40 cards numbered from 1 to 40. As you read the cards, place them in **three** piles of:
 - least like what I think;
 - most like what I think; and
 - neutral (statements which you have no opinion of)
2. From least like what I think pile, select **two** cards which you think are **the most important** and place each of the cards in the boxes (in no particular order) under **column -5**.
3. From the remaining cards in the least like what I think pile, select **three** cards which you think are **the most important** and arrange them in the boxes (in no particular order) under **column -4**.
4. Repeat this process for **column -3, -2 and -1**. You may find that you do not have enough cards to completely fill these columns. In that case, pick cards from the neutral pile to fill in the columns. In the event that you have too many cards, place the extras in the neutral pile.
5. Now from the most like what I think pile, select **two** cards with which you think are **the most important** and place each of the cards in the boxes (in no particular order) under **column +5**.

6. From the remaining cards in the most like what I think pile, select **three** cards which you think are **the most important** and arrange them in the boxes (in no particular order) under **column +4**.
7. Repeat this process for **column +3, +2** and **+1**. You may find that you do not have enough cards to completely fill these columns. In that case, pick cards from the neutral pile to fill in the columns. In the events that you have too many cards, place the extra in the neutral pile.
8. Finally, arrange the cards in the neutral pile in the boxes (in no particular order) under **column 0**. When you are finished, you should have no cards left and no blank spaces on the grid. If you wish to change the position of certain cards, you may do this at any time.

Thank you for your participation.