Introducing and discussing the virtual special issue on using Q methodology in higher education

A R T I C L E   I N F O

Keywords
Q methodology
Higher education
Subjectivity
Pedagogical applications

A B S T R A C T

This is the editorial paper for the virtual special issue “Using Q methodology in higher education: Opportunities and challenges”, consisting of nine original research studies from different international contexts. In addition to presenting novel findings, contributors were invited to discuss the following two questions at the center of the special issue call: In what sense has Q methodology served as a fitting approach to investigate subjectivity in higher education? What methodological opportunities and challenges arise with Q methodology in higher education settings? This editorial provides an overview and discussion of the various justifications mentioned for Q methodology. Furthermore, it collates the opportunities and challenges contributors discuss in relation to their studies using this almost 90-year-old methodological approach. The editorial paper concludes with recommendations for future Q methodological studies in higher education and beyond.

1. Introduction

This virtual special issue (VSI) is dedicated to the context of higher education, in which universities bear the responsibility to educate society. This is done through the provision of access “to the knowledge present in society through providing pedagogical and didactical learning instruments” (Griffioen, 2023, p. 5). In line with changes in society, higher education is in constant need of adaptations. To better understand the dynamics and complexities inherent to transformations and social change in higher education contexts, it is vital to capture different stakeholders’ subjective experiences and viewpoints (Dick & Muller, 2021). This leads us to subjectivity, which has long been regarded as “what pollutes objective knowledge” (Shapin, 2012, p. 171) and described as a site of struggle (Ball, 2016; Han, 2023). Ball (2016) for example, discusses how subjectivity is “the point of contact between self and power” (p. 1131) and that “we might begin to struggle about ourselves differently” (p. 1134). Moving from an individual site of struggle to a more socio-cultural one, a recent study involving 46 social science researchers from various geographical areas has confirmed the lack of an overarching consensus on the meaning and characteristics of subjectivity (Lundberg et al., 2023). Such disagreement might contribute to the difficulty of understanding subjectivity and accepting it as an integral part of scientific research.

Investigating subjective viewpoints is crucial to gathering reliable evidence “for a comprehensive representation of educational issues” (Lundberg et al., 2020, p. 1) and thereby seeing the studied topic more holistically. In simplified terms, where personal viewpoints and perspectives are seen as subjectivity, we need methodologies to reveal and capture those without inferring and imposing anybody else’s research categories onto them. Through the investigation of the variety of perspectives, stemming from different stakeholders, including the marginalized and underrepresented ones, changes and adaptations can be made based on better-informed discussions.

This virtual special issue zooms in on a methodology that has been described as “the best-developed paradigm for the investigation of human subjectivity” (Dryzek & Holmes, 2002, p. 20) and “the basis for a science of subjectivity” (Brown, 2019, p. 565). Well-suited to capture individual and shared perspectives, Q methodology was developed and introduced by Stephenson (1935). Introducing the Q methodological framework and set of procedural steps in detail is beyond the scope of this editorial introduction. Interested readers are instead asked to peruse some of the most fundamental literature, such as Brown (1980), Stephenson (1953) or Brown’s re-introduction of Stephenson’s Q methodological principles and practices in his more recent article in The Psychological Record (Brown, 2019). Summarized in just a few sentences, Q methodology engages participants (called P-set) in an item rank-ordering activity (called Q sorting). These items are provided by the researchers and are supposed to be a representative sample of the corpus of subjective communicability about the studied issue (called concourse). Individual Q sorting results (called Q sorts) are then correlated, and data is condensed through by-person factor analysis (called Q method). Finally, emerging group responses (called Q factors) are abductively and iteratively interpreted by the researchers.

2. This special issue

We regard Q methodology to be at a tipping point. Despite the fact that the approach has been around for nearly 90 years, many authors still call the research method a novel method (Wolf, 2018). Simultaneously, various review studies (e.g. Dieteren et al., 2023; Lundberg et al., 2020; Morea, 2022) illustrate Q methodology’s growing popularity in various fields of research. As a consequence, we invited...
researchers to submit their Q methodological studies to showcase opportunities and challenges of the approach in higher education. We were also interested in contributions that discuss any methodological and pedagogical advancements connected to Q methodology. The two questions this virtual special issue intended to focus on were the following:

- In what sense has Q methodology served as a fitting approach to investigate subjectivity in higher education?
- What methodological opportunities and challenges arise with Q methodology in higher education settings?

This editorial provides an overview of the nine contributions. In the next section, we highlight some of the characteristics of the included Q studies (e.g. setting, P-set, research question, Q sample) and summarize their findings. We then present an analysis of the reported rationales for selecting Q methodology to respond to our first question. Regarding the second question, we discuss the opportunities and challenges of Q methodology in higher education settings reported in the nine contributions. The editorial concludes with recommendations for future Q methodological studies in higher education.

2.1. A summary of included studies

This VSI features papers from eight different national contexts spread over three continents (Asia, Europe, and North America). The perspectives investigated are either those of students or teachers in higher education. Only one paper (Baas & Thomas, 2023) included other members of faculty from university directory and administration. Table 1 serves as an overview of the contributions’ settings, participants, and Q sample sizes. In addition, the research questions are provided. Where there was no clearly stated research question in the paper, we rephrased the study’s research aim or purpose.

The first published paper of this special issue presents the study by Fraschini and Park (2022), utilizing an online Q methodology toolset to examine the different anxiety perspectives of L1 Korean undergraduate student-teachers (N = 37) in a Korean Second Language course experience. The participants sorted 47 statements to explore which emotional challenges teachers perceive. The study results reveal four different perspectives, indicating that L1 Korean undergraduate students have concerns and antecedents of anxiety related to the preparedness of entering the teaching profession. Based on these perspectives, Fraschini and Park identify three key implications for the curriculum design of Korean language teachers. First, they recommend incorporating more educational activities related to pronunciation and accents. Second, they emphasize the importance of intercultural understanding as part of the curriculum and training programs. Lastly, addressing the feeling of being insufficiently prepared necessitates higher quality internships, providing students with more actual classroom teaching experiences and (peer)feedback from experiences teachers on their teaching plans.

The second paper of the special issue focuses on the cultural influence of entrepreneurship students. Heinzle et al. (2022) used Q methodology to study how Indian (n = 15), German (n = 15) and Swedish (n = 16) entrepreneurship students cope with failure and explored whether the coping strategies are influenced by individual or culturally factors. The participants sorted 60 statements, and the research findings reveal that for each of the countries (Q analysis were conducted per national context), there are four typal subjectivities in learning from failure, with one factor primarily rooted in individual differences rather than cultural distinctions. By applying cluster analysis the authors supplemented the Q factors with an additional layer of data and further explored which differences entrepreneurship students have in learning from failure. The authors recommend that educational entrepreneurship programs should explicitly include reflection moments to support students in making sense of and learning from failure, as taking risks, failing and developing resilience are integral to successful entrepreneurship.

The study by Grijpma et al. (2022) aimed to explore how and why medical students’ appreciation of active learning in small groups changed over time. To this end, a repeated Q study with 54 statements was conducted with 20 medical students from the Netherlands. The study found that the motivation and engagement of the first-year students differ in later stages of their study. This implies that medical teachers should tailor education programs to meet the needs of both development-oriented and success-oriented students. This study also makes a methodological contribution, as repeated Q studies are relatively uncommon. To support and inspire other researchers to conduct similar longitudinal Q studies, the authors provide a detailed example of how to analyze a repeated Q study.

Lundberg (2022) conducted an online Q study with 25 university teachers in a professional development program toward a Certificate of Advanced Studies (CAS) in higher education in Switzerland. The participants sorted 38 characteristics of good teaching practice. In total, 26 Q sorts were analyzed, including the author’s own participation in the study procedure, “making the researcher present” (Lundberg, 2022, p. 3). Participants were invited to interpret the Q factor arrays on which they loaded significantly. With this approach, Lundberg illustrates how Q methodology can be applied as a participatory research approach, stating that this design enhances the validity of factor descriptions and highlights the potential of Q methodology as a reflection tool for academics to explore their subjectivity towards their teaching. Lundberg suggests to use the narratives of both factors for academic development in higher education.

In the study by Alkhateeb et al. (2022), the effect of the underrepresentation of men in the teaching profession was explored. Thirty-five Qatari male school-leavers conducted a Q sort of 29 statements, providing their perspectives on why or why not they would join the teaching profession and enroll in higher education training. An interesting finding from this Q methodology study is that, despite the presence of four different factors, the participants share a strong perspective of the importance of the teaching profession. However, they are hesitant about their suitability as teachers. Additionally, this study found that Qatari men were also influenced by the appeal of other careers and the lack of a male representation as teachers. Based on these findings, Alkhateeb and colleagues provide implications for policymakers, such as improving the economic status and career developments in the teaching profession.

In the paper by Baas and Thomas (2023), 50 professors and staff members of one university sorted 40 statements to explore their perceptions of the purpose of college education. The analysis of the Q sorts resulted in five distinct and plural perspectives. This study indicates that the purpose of higher education, even in one single college education, is highly subjective and necessitates open discussion among faculty members and staff. The authors suggest that the study’s results serve as a starting point for such discussions, where different stakeholders can explore and discuss the differences and similarities of various perspectives. This implication illustrates another opportunity for using Q methodology as a basis for dialog (Lo Bianco, 2015; Wolf, 2016).

The study by de Leeuw (2023), specifically explored the potential of Q sorting as an educational activity. The author conducted a sorting activity as a group task and group exercise and reported how the sorting activity facilitated student dialogues and reflections on the curriculum. Fourteen Bachelor students participated in the study and completed both group (N = 3) and individual (n = 11) sorting activity. For both activities, the participants sorted 12 statements (slightly adjusted to fit the sorting instruction). The author applied a factor analysis per activity, resulting in a one-factor solution for the group setting and a three-factor solution for the individual setting. This study demonstrates a practical application of Q sorting as an educational tool,
which can be utilized as both a group and individual activity.

In the study by Yang (2023), 24 pre-service teachers in the USA shared their perspectives on various sources of frustrations in group learning through a Q sample with 29 items. By interpreting the Q factors, Yang identified five distinctive learner personas representing different student preferences or collaboration styles. Instructional designers and educators can use these personas when designing courses or curricula with group learning activities, selecting tasks that align with the identified personas. Moreover, students can use these personas to self-identify their attitudes, beliefs and preferences in group activities, helping them understand the dynamics of group collaboration. Before forming groups, students and educators can assign students to specific groups based on the self-identified personas to create balanced groups.

In the final contribution, Pilcher (2023) set out to investigate the extent to which Q methodology is suited to reveal the complex-dynamic systems theory structures and processes of pre-service teachers’ role identity development in the USA. In this exploratory pilot study, six pre-service teachers sorted 46 statements representing teachers’ beliefs and self-perceptions. The Q analysis resulted in two teacher belief factors, with one factor formed by a single participant. This phenomenon, not commonly explored in Q studies, adds to the theory of Q methodology. The practical implications of this study relate to other publications in this VSI, as the Q statements allow pre-service teachers and their educators to explore and reflect upon the complexity of identity formation as a teacher.

3. Discussion

Contributors to this VSI were asked to provide novel empirical research using Q methodology in higher education contexts and discuss the following two questions:

- In what sense has Q methodology served as a fitting approach to investigate subjectivity in higher education?
- What methodological opportunities and challenges arise with Q methodology in higher education settings?

In the next sections, we will provide our editorial interpretations of how the nine VSI articles have responded to these questions.

3.1. Q methodology as a fitting approach

Our first question is inherently connected to our personal interest in using Q methodology and the challenging undertaking of explaining why we do so. As Amanda Wolf stated in her 2018 conference paper presentation, many researchers use a tautological and technical justification for their selection of Q methodology, along the line of being interested in participants’ subjective views on a topic, noting that Q methodology is the study of subjectivity and therefore decided to study participants’ subjective views on the topic with Q methodology (Wolf, 2018). In her analysis of email elaborations about the authors’ rationale for using Q methodology, Wolf could describe the following types of justifications for selecting Q methodology:

a) situational features, in the sense of what it is like for researchers and/or participants
b) methodological features, highlighting Q’s qualities, also in comparison with other approaches
c) application features, meaning how Q methodology was particularly suited for the purpose of the specific study
d) philosophical justification, meaning how Q methodology fits the researcher’s philosophical position
e) reasons of theory, concerning how Q can support the building, testing, and refining of theory

To respond to our first question, we carefully read all the full texts in the VSI and collated all justifications for Q methodology in Table 2. As it is sometimes done in journal articles with limited space, justifications for methodological decisions are truncated or entirely omitted. At the same time, authors might state several justifications for their selection of Q methodology. We have used the classification presented by Wolf (2018) to make sense of why Q methodology was described as a fitting approach for the nine studies in this VSI. As visible in Table 2, authors of the contributions to this VSI mostly provided justifications connected to Q methodology’s particular suitability for the purpose of their studies. In fact, in seven out of nine papers, we detected application features to be relevant for the choice of methodology. Four articles also provided a methodological feature as a justification, and two mentioned aspects, which were categorized as situational. Only in one paper could “theory building” be detected as a justification for the selection of Q methodology.

From a self-critical standpoint, we want to report that the term subjective/subjectivity is mentioned in all the VSI papers. However, if the justifications listed here are simply of a tautological and technical nature (Wolf, 2018) or to what extent Q methodology was in fact selected to study subjectivity in higher education or even contribute to a
Table 2
Rationales for selecting Q methodology in each contribution to the virtual special issue.

<table>
<thead>
<tr>
<th>VSI Paper</th>
<th>Rationale for selecting Q methodology</th>
<th>Classification by Wolf (2018)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fraschini &amp; Park</td>
<td>“Thanks to its focus on subjectivity, Q methodology is particularly appropriate to research emotions” (p. 3)</td>
<td>Application features (understanding depth)</td>
</tr>
<tr>
<td>Heinze et al.</td>
<td>“Highlighting concealed patterns within the subjective experiences of individuals asks for a hybrid methodology that combines the capacity to analyze data with statistical methods as well as the ability to explore and interpret the subjective meaning of the statistical outcomes. Q methodology is such a method.” (p. 4)</td>
<td>Methodological features (preferred to qualitative)</td>
</tr>
<tr>
<td>Grijpma et al.</td>
<td>“This method is used to create clusters of people with similar viewpoints […] which can be compared and contrasted with each other. As such, it is a way to do person-centered analysis” (p. 2)</td>
<td>Application features (comparative)</td>
</tr>
<tr>
<td>Lundberg</td>
<td>“The aim […] is an in-depth interpretation of academics’ own subjective perspectives” (p. 1)</td>
<td>Application features (understanding depth)</td>
</tr>
<tr>
<td>Alkhateeb et al.</td>
<td>“To explore the perceptions of Qatari male school-leavers towards choosing teaching as a profession, this study uses the Q methodology.” (p. 3)</td>
<td>Application features (understanding depth)</td>
</tr>
<tr>
<td>Thomas</td>
<td>“To tap the subjective understandings of the purpose of higher education within this institution” (p. 2)</td>
<td>Methodological features (structured)</td>
</tr>
<tr>
<td>De Leeuw</td>
<td>“Sorting activities such as Q sorting facilitate discussions and reflections”</td>
<td>Situational features (meaning revealing and involving others in meaning making)</td>
</tr>
<tr>
<td>Yang</td>
<td>“To achieve the research goals, this study used Q methodology—a unique mixed methods approach to investigating people’s subjectivity” (p. 1)</td>
<td>Application features (understanding depth)</td>
</tr>
<tr>
<td>Pilcher</td>
<td>“Q methodology would help uncover something about the complexity” (p. 3)</td>
<td>Application features (complexity and understanding depth)</td>
</tr>
</tbody>
</table>

Table 2 - Rationales for selecting Q methodology in each contribution to the virtual special issue.

4

science of subjectivity (Brown, 2019) cannot be conclusively examined. Because there exist different conceptualizations of subjectivity, even among Q researchers (Lundberg et al., 2023), and the authors of the VSI did not specifically mention how they define the concept, the VSI only partially responds to the first question.

3.2. Opportunities and challenges of Q methodology in higher education settings

To answer our second question in this VSI, we first describe the most prominently mentioned methodological opportunities and then the challenges that arose with Q methodology in the studied higher education settings.

Grijpma et al. (2022) describe how the use of Q methodology provides an opportunity in designing tailor-made educational interventions for students. Yang (2023) supports this by outlining how the approach can support the creation of learner personas that can be seen as “an important tool in instructional design and user experience design” (p. 8). In more general terms, Q methodology can help adapt higher education teaching and learning contexts in alignment with students’ needs.

Some of the most vital issues in higher education are characterized by great complexity. Some VSI papers can be understood as tackling this complexity through Q methodology. Pilcher (2023) for instance, states that Q methodology is “an invaluable asset for those trying to understand and navigate wicked problems” (p. 7). Another example is the study by Fraschini and Park (2022), who studied teachers’ “numerous and complex emotions” (p. 1). Applied as a participatory approach, Lundberg (2022) mentions how Q methodology can “facilitate and elevate the interpretation process” (p. 8). With regard to complex issues, this seems particularly important.

Finally, several papers in this special issue illustrate that Q methodology can be more than a research method in higher education. Many authors explicitly reflect on the possibilities of using the data collection instrument (Q sample, distribution grid and the idea of Q sorting) as a reflective tool in higher education teaching and learning settings. As mentioned in the words of Heinze et al. (2022), “the study itself has been a lesson for the student participants” (p. 11). de Leeuw (2023) states how “the sorting activity acted as a prompt” (p. 7) for further discussion. These stated opportunities of Q methodology in higher education are in line with findings from previous studies that used or suggested Q methodology as a dialogical tool (Lo Bianco, 2015; Wolf, 2016).

Contributors to this VSI also identified several challenges that might arise with using Q methodology. Some of the challenges mentioned in the papers are recurring issues listed in the limitation sections of Q studies. Mentioned most prominently is the issue of generalization or generalizability in Q methodology. It seems important to add that Q methodological results should always be regarded as generalizable based on substantive inference (Thomas & Baas, 1993) and not with regard to statistics.

Additional challenges mentioned in the VSI papers connect to the construction of the data collection instrument, i.e. the designing of a well-balanced Q sample (Heinze et al., 2022) and the requirement of the researcher’s both qualitative and quantitative analytic skills (Yang, 2023). While emerging Q researchers can overcome these technical challenges, the issue is also connected to Q methodology’s acceptance in the field of higher education. As Baas and Thomas (2023) stated it, the approach is still “operating on the margins, far from being embraced by mainstream academics” (p. 6). Nevertheless, seeing the growing popularity of Q methodology in various fields (e.g. Dieteren et al., 2023; Lundberg et al., 2020; Morea, 2022), we return to our initial claim that Q methodology might be at a tipping point towards more acceptance as an approach with more advantages than disadvantages for both researchers and participants.
4. Conclusion

This VSI consists of nine original research papers, demonstrating how Q methodology can be applied in higher education contexts. Contributors selected Q methodology based on different justifications and to explore the perspectives of teacher-educators, (potential) students and staff members. The papers also address multiple opportunities and challenges of Q methodology as a research approach and as an educational tool. In conclusion, we believe that the VSI supports the claim that Q methodology is a valuable methodological choice to allow the emergence of diverse stakeholders’ subjectivities in higher education contexts. We end this editorial introduction and discussion with a call for a deeper understanding about the choice of the research approach this VSI has focused on and a more comprehensive representation of educational issues in higher education and beyond.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgments

We would like to express our gratefulness to the authors who contributed to this virtual special issue and acknowledge the valuable input of the reviewers, who provided feedback and comments on the submissions.

References


Adrian Lundberg*, Reniske Ria de Leeuw*

* Department of School Development and Leadership, Malmö University, Sweden

b School of Education, Saxion University of Applied Sciences, Deventer, the Netherlands

c Corresponding author at: Malmö University, Nordenskiöldsgatan 10, 205 06 Malmö, Sweden.

E-mail address: adrian.lundberg@mau.se (A. Lundberg).