



CONSTRUCTING WHAT CAN BE SAID: CONCOURSE DEVELOPMENT IN Q-METHODOLOGICAL AUTISM RESEARCH

RAZVOJ KORPUSA ISKAZA U Q-METODOLOŠKOM ISTRAŽIVANJU AUTIZMA

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ABSTRACT

Q methodology is a systematic procedure for studying subjective viewpoints: participants sort a set of statements according to their personal perspective, and the resulting patterns reveal distinct shared viewpoints within a group. The quality of this procedure depends entirely on the quality of its central instrument. A statement pool that fails to represent the full range of relevant perspectives constrains what participants can express before a single sort has taken place. Despite this, the process of Q-set development in autism research is rarely documented with sufficient transparency to permit validity assessment, replication, or adaptation: sources are named, final instruments are presented, and the decisions in between remain opaque. This paper documents that process in full. Drawing on semi-structured interviews with 11 purposively sampled stakeholders in the Bavarian school system, an initial concourse of 173 statements was generated and reduced through four explicit criteria to a final instrument of 39 statements, piloted with three autistic individuals before finalisation. The piloting phase identified perspectives entirely absent from eleven professional stakeholder interviews, illustrating how structured autistic involvement can surface viewpoints that professionally generated concourses may not capture. Full traceability from coded interview segments to final statements is provided in the supplementary materials. The procedural model offered here does not exist in the published Q-autism literature and is offered as a replicable template for the field.

Keywords: Q methodology, concourse development, methodological transparency, autistic students, educational trajectories, participatory research, instrument development

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SAŽETAK

Q metodologija predstavlja sistematski pristup proučavanju subjektivnih stavova: učesnici rangiraju skup izjava (statements) prema vlastitom mišljenju, a dobijeni obrasci otkrivaju različite perspektive koje su zajedničke pojedinim učesnicima grupe. Kvalitet ovog postupka u potpunosti zavisi od kvaliteta njegovog ključnog instrumenta. Ako skup izjava ne obuhvata cijeli spektar relevantnih perspektiva, on unaprijed ograničava ono što učesnici mogu izraziti. Uprkos tome, način na koji se razvija Q-set u istraživanjima u području autizma rijetko se opisuje dovoljno transparentno da bi bilo moguće procijeniti njegovu validnost, ponoviti postupak ili ga prilagoditi. U pravilu se navode izvori i prikazuje konačni instrument, dok koraci i odluke između tih faza ostaju nedovoljno objašnjeni. Ovaj rad ima za cilj da taj proces prikaže u cjelini. Na osnovu polustrukturiranih intervjua sa 11 namjerno odabranih učesnika iz bavarskog školskog sistema, formiran je početni skup od 173 izjava, koji je zatim, na osnovu četiri jasno definisana kriterija, reduciran na konačnih 39 izjava. Prije konačne verzije, instrument je testiran sa tri autistične osobe. Tokom ove faze uočene su perspektive koje nisu bile zastupljene u intervjuima sa jedanaest ispitanika, što pokazuje kako strukturirano uključivanje autističnih osoba omogućava uvid u stavove koje pristupi zasnovani isključivo na stručnim perspektivama ne obuhvataju. U dodatnim materijalima jasno je prikazan put od kodiranih dijelova intervjua do konačnih izjava. Model postupka predstavljen u ovom radu nije prisutan u dosadašnjoj literaturi o Q metodologiji u području autizma te se nudi kao model pogodan za reprodukciju u budućim istraživanjima.

Ključne riječi: Q metodologija, razvoj Q-seta, metodološka transparentnost, autizam, obrazovni putevi, participativno istraživanje, razvoj instrumenata

INTRODUCTION

The educational trajectories of autistic students are marked by discontinuity. Across national contexts, research consistently documents elevated rates of school change, prolonged absence, disciplinary exclusion, and withdrawal into alternative or reduced schooling arrangements (Ahmetovic et al., 2026; Guldberg et al., 2021; Nordin et al., 2024; Sasso & Sansour, 2024). In Bavaria, as across the German federal states, autism is not recognised as a distinct disability category; autistic students are subsumed under broader disability classifications and consequently rendered statistically invisible in official educational data (Ahmetovic & Sasso, 2025). This structural invisibility compounds an already marked empirical and political marginalisation: a group whose schooling experiences are poorly understood and rarely the subject of targeted research or policy remains without the disaggregated evidence base that would be necessary to drive systemic change.

Part of what makes this evidence base so thin is that the experiences of autistic young people themselves have rarely been the primary data source. The overwhelming majority of studies involving young autistic persons rely on parent or teacher report (Ambrose et al., 2024). While such perspectives have genuine value, they are inherently external: they describe what adults observe, assume, or interpret rather than what autistic young people experience, prioritise, and mean. The gap between adult-reported and self-reported accounts of anxiety

and school functioning has been documented empirically, with autistic children consistently reporting experiences that adults fail to recognise or substantially underestimate (Adams et al., 2020; Ambrose et al., 2024). This asymmetry raises a concrete methodological question: how can research access the varied, individually nuanced perspectives of autistic young people themselves, rather than relying on what adults report about them?

The present paper addresses this question through Q methodology, a method that has emerged as a promising approach for studying subjective viewpoints in autism research (Ambrose et al., 2024; Arnell et al., 2022; Esqueda Villegas et al., 2025; Mantzalas et al., 2023; Stenner et al., 2025; White et al., 2026). Yet, a consistent limitation across these studies is the opacity of the instrument development process. Concourse sources are occasionally mentioned, but the criteria applied in statement reduction, the pathway from source material to final instrument, the basis on which perspectives were included or excluded, and the role of participatory validation are rarely if ever documented. The validity of any Q-Sort study is therefore contingent on the adequacy of its Q-set: a statement pool that fails to represent the full range of relevant perspectives will constrain the viewpoints participants can express, regardless of how carefully the subsequent analysis is conducted (Brown, 1993; Watts & Stenner, 2012).

Rather than reporting Q-sort results, which are presented elsewhere, this paper documents the full development of a Q-set for research on the school experiences of autistic young people aged 14 to 22 in Bavaria, tracing each stage from initial concourse generation through iterative reduction to participatory piloting and final validation. The documented process constitutes a procedural model that does not currently exist in the Q-autism literature: a staged, explicitly criterion-guided development with full traceability from source material to final instrument, offered here as a replicable template for the field.

To situate this methodological contribution, the following section outlines the educational context in which the instrument was developed and the theoretical basis for Q methodology as the appropriate approach.

Theoretical Framework

Educational Trajectories of Autistic Students

The concept of educational trajectory has gained traction in German educational research as a way of capturing the cumulative effects of institutional decisions, transitions, and discontinuities on individuals' long-term relationships to learning and schooling (Dausien, 2017; Grunert, 2005). "Biographies" represent both objective social structures and their subjective processing in the context of lived time (Grunert, 2005), and this dual character is particularly consequential in schooling contexts. For autistic students, the biographical dimension of schooling is especially salient: a school change that might constitute a routine administrative event for a neurotypical student may, for an autistic young person, entail the loss of carefully established routines, trusted relationships, and familiar spatial and sensory environments. The biographical weight of educational disruption is therefore not reducible to its administrative form; it depends critically on how that disruption is experienced and interpreted by the person who lives it. For some autistic young people, however, school changes or periods of reduced attendance may be experienced not as failure but as a necessary

form of self-protection (Dausien, 2017), a rational response to environments that are not designed to accommodate their needs. Whether a disruption is lived as loss, relief, or ambivalent necessity is a question that only the young people themselves can answer.

Capturing this kind of subjective, individually varied experience requires methodological approaches that go beyond observable outcomes and third-party accounts. Recent research has foregrounded masking and sustained adaptation as central mechanisms through which autistic students negotiate environments not designed for them: while such adaptation may enable short-term participation, it accumulates psychological costs and has been linked to autistic burnout (Dyer et al., 2025; Jahandideh et al., 2025), complicating conventional distinctions between inclusion and exclusion. The meaning attached to a school change, the felt difference between masking and belonging, the point at which adaptation becomes untenable: these are questions that require a method capable of systematically accessing subjective viewpoints in their diversity, without presupposing consensus, without relying on verbal fluency, and without reducing individual experience to aggregate tendencies. Q methodology was developed precisely for this purpose.

Q Methodology: Principles and Suitability for Autism Research

Q methodology combines the strengths of both qualitative and quantitative research traditions (Müller & Kals, 2004). It was developed by the British physicist and psychologist William Stephenson in the 1930s as a systematic procedure for studying subjective viewpoints (Stephenson, 1935, 1953). Its central epistemological claim is that subjectivity is not a source of error or bias to be controlled, but a legitimate object of scientific inquiry in its own right. Stephenson himself was explicit on this point: his concern was never with Q-technique alone but with a comprehensive approach to the study of behaviour in which subjectivity is the rightful aim of psychological inquiry (Stenner, 2025). Q methodology provides a structured, replicable procedure for making individual viewpoints publicly observable, comparable, and analytically tractable, without reducing them to the aggregate tendencies measured by conventional survey research (Watts & Stenner, 2012).

The method combines two analytical phases. In the first, participants are presented with a set of statements, the Q-set, drawn from the discursive field surrounding a topic, *the concourse*, and asked to sort these statements according to their personal perspective, typically along a continuum from most applies to me to least applies to me. The sorting takes place within a fixed quasi-normally distributed grid, which requires participants to allocate a specified number of statements to each position.

The Q-Sort Grid is a horizontal scale from -4 to +4. The scale labels are: -4 Does not apply at all, -3 Barely applies, -2 Applies little, -1 Rather does not apply, 0 Neutral, +1 Somewhat applies, +2 Applies quite well, +3 Applies strongly, +4 Fully applies. Below each label is a vertical column of boxes for sorting cards. The number of boxes per column is: -4 (2), -3 (3), -2 (4), -1 (5), 0 (6), +1 (5), +2 (4), +3 (3), +4 (2).

Image 1. Q-Sort Grid

This ipsative constraint means that participants prioritise statements relative to one another rather than rating them in absolute terms: a statement placed at the negative pole signals that it is less personally central than those placed higher, not that it is considered untrue or unimportant (Watts & Stenner, 2012; van Exel & de Graaf, 2005; Müller & Kals, 2004). In the second phase, completed Q-sorts are submitted to by-person factor analysis, in which persons, rather than variables, constitute the unit of analysis (van Exel & de Graaf, 2005). Participants who sorted similarly are grouped into factors, and each factor represents a distinct shared viewpoint (Watts & Stenner, 2012). Several properties make Q methodology particularly well suited to research with autistic young people. First, Q-sorting can be completed without spoken output and without face-to-face verbal interaction with researchers (Ambrose et al., 2024). Second, the structured nature of the task, with defined parameters, a clear endpoint, and a concrete manipulable output, offers a predictable format that aligns with the preference for clarity and sameness documented in autism research (Normansell-Mossa et al., 2021). Third, the method is particularly well suited to topics that are difficult to access through verbal means alone (Müller & Kals, 2004), such as the nuanced and often not easily articulated subjective meanings that autistic young people attach to their school experiences. Fourth, and most importantly in the present context, Q methodology is specifically designed to detect heterogeneity of viewpoint rather than aggregate tendency: it does not presuppose consensus and is therefore well placed to reveal the genuine diversity of perspectives within a group frequently treated as homogeneous (Watts & Stenner, 2012). Recent applications with autistic and neurodivergent populations confirm the method's feasibility and value across a range of research contexts (Ambrose et al., 2024; Mantzalas et al., 2023; Stenner et al., 2025).

The Concourse and the Q-Set: Why Instrument Development Matters

The concourse refers to the flow of communicability surrounding any topic (Brown, 1993; van Exel & de Graaf, 2005): all the things that can meaningfully be said, felt, and experienced in relation to the issue under investigation, drawn from the ordinary discourse, commentary,

and conversations of those closest to it. The validity of any Q-sort study rests fundamentally on the quality of its Q-set, which in turn depends on the quality and coverage of the concourse from which it is drawn. As Watts and Stenner (2012) emphasise, the concourse must be representative of this discursive field. A Q-set constructed from researcher assumptions, from theoretical frameworks without empirical grounding, or based exclusively on professional or institutional accounts will constrain the viewpoint space available in the sorting study. Participants can only express their subjectivity through the statements they are given; a narrow, biased, or inauthentic statement pool will produce correspondingly limited and potentially misleading factors. The researcher's fundamental responsibility is to arrive at a Q-set that is genuinely representative of the wide range of existing viewpoints on the topic (van Exel & de Graaf, 2005).

These methodological concerns carry additional ethical weight when the research population belongs to a historically marginalised group. In autism research, the dominance of parent and professional report data in instrument development has been critiqued as a form of epistemic injustice (Fricker, 2007): the experiences and perspectives of autistic people are filtered through third-party accounts before they are ever operationalised as research variables (Milton, 2012; Pellicano & Stears, 2011). When third-party perspectives systematically underrepresent certain subjective experiences, particularly those not easily visible to external observation, or that challenge dominant professional narratives, the research instrument carries this exclusion into the data collection process itself. A concourse development process that actively incorporates autistic voices, in both the source interviews and the piloting of the instrument, is therefore not merely a methodological quality measure but an ethical commitment to participatory research practice, a consideration that has become an active area of methodological debate in autism research (Stenner et al., 2025).

In practice, however, this commitment has not been accompanied by methodological guidance on how to enact it at the level of instrument construction. An examination of published Q-methodological studies with autistic populations confirms this pattern: while concourse sources are occasionally mentioned, none of the studies reviewed provides a staged account of reduction criteria, a traceability mapping from source material to final instrument, or a record of participatory piloting as a validation procedure (Ambrose et al., 2024; Arnell et al., 2022; D'Arcy et al., 2021; Esqueda Villegas et al., 2025; Mantzalas et al., 2023; Stenner et al., 2025; White et al., 2026). No published template currently exists for how to conduct and document Q-set development for use with autistic populations in a way that permits validity assessment and replication. This paper addresses that gap directly. Rather than arguing for transparency in principle, it provides a concrete procedural model: a staged, criterion-guided concourse development process with full traceability from source material to final instrument and autistic-insider validation through piloting, documented in sufficient detail to permit assessment, replication, and adaptation across different populations and research contexts.

Methods

Overview of Study Design

This paper reports the development of the concourse and final Q-set for a Q-methodological study on the school experiences of autistic students in Bavaria, Germany. The paper focuses exclusively on the instrument development process; the results of the subsequent Q-sort study are reported separately. The development followed a qualitative, multi-perspectival design aimed at generating a concourse grounded in the perspectives of multiple stakeholders and transforming this material into a set of Q-statements that is empirically grounded, linguistically accessible, and suitable for use with autistic adolescents and young adults aged 14 to 22. The final instrument of 39 statements falls just below the range typically recommended for Q-sets of approximately 40 to 50 items (van Exel & de Graaf, 2005), with this slight reduction reflecting the younger age of the target population and the need for practical manageability within a researcher-accompanied session format. The development process comprised three main stages: 1. generation of an initial concourse from semi-structured interviews and purposive coding in MAXQDA; 2. iterative reduction and refinement of the statement pool guided by four explicit criteria; and 3. construction and piloting of the final Q-set.

Participants and Sampling

The concourse was developed from semi-structured interviews with 11 participants representing different stakeholder positions in the educational trajectories of autistic students in Bavaria. The sample was intentionally heterogeneous with respect to professional role, personal relationship to autism, and institutional position. Purposive, multi-perspectival sampling was employed because the goal of concourse development in Q methodology is not statistical representativeness but discursive coverage: the aim is to capture the range of relevant viewpoints within the discursive field (Brown, 1993; Watts & Stenner, 2012). Table 1 provides a full overview of the sample.

Table 1. Sample composition for concourse development interviews

ID	Role	Position in system	Additional note
INT01	Teacher (Special school setting)	Teacher	
INT02	Primary school teacher	Teacher	
INT03	Parent of autistic child	Parent	
INT04	Parent of autistic child; teacher by profession	Parent / Teacher	Dual perspective
INT05	Teacher; autistic	Teacher / Autistic adult	Professional and insider perspective
INT06	School support staff (School aide)	School support	
INT07	Autistic adult; no professional or parental role	Autistic adult	Insider perspective only
INT08	Parent of autistic child; autistic	Parent / Autistic adult	Dual perspective
INT09	Parent of autistic child	Parent	
INT10	Secondary school teacher	Teacher	
INT11	School support staff (School aide)	School support	

Autistic voices were represented by three participants: an autistic teacher (INT05), an autistic adult parent (INT08), and an autistic adult without professional or parental roles (INT07). This deliberate design decision ensured that experiential and insider knowledge of autism informed the concourse from the outset, rather than being added only at the piloting stage. Several participants occupied overlapping roles, enabling the dataset to capture accounts that cut across the conventional boundary between professional and personal knowledge, a boundary that is particularly consequential in autism research.

Recruitment and Ethics

Participants were recruited through purposive sampling via the researcher's professional networks in Bavarian education and autism research. Potential participants were approached directly on the basis of their stakeholder role and direct experience with autistic students. Participation was voluntary; all participants provided informed consent before the interview commenced, and the study was conducted in full accordance with ethical standards applicable to research involving human participants. All interviews were conducted in German, audio-recorded with consent, transcribed verbatim, and imported into MAXQDA; audio recordings were deleted following transcription.

Interview Guide

Interviews were based on a semi-structured guide organised around seven thematic domains, designed to ensure broad coverage of the discursive field and to elicit both descriptive and evaluative accounts, important for concourse construction because Q-statements must reflect not only events and conditions but also judgements, tensions, preferences, and perceived alternatives (Watts & Stenner, 2012). The seven domains were: 1. general schooling experiences of autistic students, including both challenges and positive developments; 2. educational disruption, school changes, prolonged absence, withdrawal, exclusion and their consequences; 3. school-related demands and contextual barriers including social demands, sensory load, and structural rigidity; 4. helpful support, accommodations, and adaptations; 5. collaboration between school, family, and support professionals; 6. views on what should fundamentally change in Bavarian autism education; and 7. further reflections on autistic students' educational trajectories. Questions were adapted in phrasing for each participant group: autistic participants were invited to speak from personal experience; teachers, parents, and school support staff were asked about their professional or familial observations.

Data Analysis in MAXQDA and Concourse Generation

All transcripts were imported into MAXQDA Analytics Pro 2022. The coding process was purposive and selective rather than exhaustive; the guiding analytic question was: which passages contain a perspective, evaluation, or experience that can be meaningfully transformed into a Q-sortable statement? A hierarchical coding structure was developed, partly deductively from the interview guide domains and partly inductively from the material. Main codes included: STATEMENT-RELEVANT (a cross-cutting code applied to any

passage considered particularly suitable for direct transformation into a Q-statement); Educational disruptions (with subcodes for withdrawal, exclusion, and school change); BURDEN (subcodes: adaptation pressure, emotional, social, sensory); Resources (subcodes: self-determination, relationships, structure, retreat); Teachers and teacher-related experiences; solutions and school development; and Problem (systemic and institutional problems). Many segments received multiple codes, reflecting the thematic complexity of individual passages. All coded segments, not only those carrying the Statement-relevant code, were treated as potential sources for the initial statement pool, since each thematic code identified content that could contribute meaningfully to the concourse.

The resulting concourse constitutes a *naturalistic Q-sample* in the sense described by Müller and Kals (2004): one in which interviews and participant accounts serve as the basis for statement construction rather than as direct quotations. The reformulation of interview passages into researcher-generated statements follows the principle described by Müller and Kals, preserving the substantive perspective of each original passage while rendering it sortable as a Q-statement. The concourse development proceeded across three main stages, described in the Development Process section. At each stage, explicit criteria were applied and documented to ensure methodological accountability and permit subsequent scrutiny. The four reduction criteria applied in Stage 2 were: 1. *semantic redundancy*: merging statements expressing the same underlying claim in different words into a single, more generalisable formulation; 2. *conceptual coverage*: ensuring no major thematic domain was lost through the reduction process; 3. *statement quality*: revising or removing statements that were too vague, too closely tied to a single person's experience, or unlikely to be meaningfully answerable by an autistic young person aged 14 to 22; and 4. *perspective balance*: retaining contrasting perspectives within each thematic domain without privileging those that appeared more frequently in the interview material.

Reflexivity

The entire development process was conducted by a single researcher. This ensures analytical consistency but forecloses the inter-rater validation that a team would provide. To compensate, explicit and documented criteria were applied at every stage, and the instrument was subjected to external validation through autistic piloting (described in Development Process section). The researcher is not autistic, is a trained teacher, and is a parent to an autistic child with high and complex support needs. These positionalities provide insider familiarity with Bavarian educational contexts but also introduce the risk of confirmatory interpretation, particularly in relation to the predominantly burden-oriented character of the interview material. This risk was addressed by treating breadth and perspective balance as explicit design goals, and by systematically retaining statements that challenge or nuance dominant burden narratives wherever empirically present.

Development Process

Step 1: The Initial Concourse (N = 173 Statements)

Coding of 11 interviews produced an initial pool of 173 statements, capturing a broad range of perspectives across ten emergent domains: school trajectories and educational disruption; overload and exhaustion; adaptation and masking; the invisibility of distress; withdrawal and exclusion; resources and support; teacher relationships; systemic constraints; questions of justice and participation; and possible alternatives and solutions. The breadth of the initial pool reflected the multi-perspectival composition of the sample: teachers and school support staff described institutional constraints and observable behaviour patterns; parents contributed knowledge of experiences outside school and the emotional consequences of educational disruption; autistic adults supplied insider accounts of subjective experience that third-party observers could not have generated.

A notable pattern in the initial pool was the predominance of statements describing barriers, burdens, and negative experiences. This was not a design decision but an empirical reflection of the interview material: participants across all stakeholder groups reported considerably more experiences of difficulty, exclusion, and structural failure than experiences of effective support or positive trajectories. Positive and resource-oriented statements did emerge, particularly in relation to specific accommodations, individual teacher attitudes, and the value of diagnosis for self-understanding, but they were substantially outnumbered. This distribution reflects the current reality of schooling for autistic students in Bavaria as reported by those closest to it. The complete traceability mapping from coded interview segments to final Q-statements is provided in the supplementary materials (Appendix A to C).

Step 2: The Refined Concourse (N = 68 Statements)

Following iterative reduction and refinement, the initial pool was condensed to 68 statements organised across ten thematic domains: school trajectories and educational disruption (7 statements); burden and demands (7); adaptation and invisibility (3); resources and support (8); teachers and relationships (5); social experiences and belonging (4); systemic conditions and critique (6); norms, justice, and participation (5); solutions and school development (6); and communication, collaboration, self-regulation, and rights (17; this domain was intentionally broad, consolidating several thematically related but conceptually distinct areas that resisted reduction without loss of coverage). The reduction involved the merging of 67 statements with conceptually related counterparts and the removal of 38 statements that failed to meet the quality or answerability criteria. No thematic domain present in the original material was left unrepresented in the refined pool. The complete list of 68 refined statements, together with the criterion applied for each inclusion or exclusion decision at the subsequent selection stage from 68 to 36 statements, is provided in Appendix B_Phase 2.

Two decisions from the reduction process illustrate the operation of the perspective balance criterion. First, within the domain of educational disruption, both the interpretation of a school change as a failure and its interpretation as a necessary protective response were retained, despite the latter appearing less frequently in the interview material. Both perspectives were

empirically present in the concourse, and their contrast was considered analytically significant for the subsequent Q-sort study: the question of how autistic young people understand their own educational disruptions is precisely the kind of divergence that Q methodology is designed to detect. Second, statements representing a norm-critical perspective, that schools are organised around a standard to which all students are expected to conform, were retained as a distinct thematic cluster because removing them would have eliminated an analytically important perspective entirely.

Step 3a: The Pre-Piloting Q-Set (N = 36 + 1 Anchor Statement)

From the 68-statement pool, a pre-piloting instrument of 36 statements was constructed and organised into five thematic domains: Section A, subjective interpretations of school experience and educational disruption (9 statements); Section B, burden and stress factors (8); Section C, protective factors and resources (9); Section D, alternative educational formats and digital learning (5); and Section E, teacher-related experiences (5). All retained statements were reformulated into a first-person format, as Q-statements for adolescent participants must be expressible as personal claims that the participant can evaluate from their own perspective. Sentence structures were simplified and specialist terminology was avoided; the adequacy of this linguistic adaptation was assessed empirically through piloting rather than solely by researcher judgement.

One anchor statement was developed alongside the 36 Q-statements as a plausibility check: *I usually know what is expected of me at school*. This statement was not included in the Q-sort grid and does not contribute to the factor-analytic data; it serves exclusively to indicate whether participants understood the task and were engaging with the sorting procedure in a meaningful way. The pre-piloting instrument thus comprised 36 statements plus one anchor item, arranged in a 9-point quasi-normally distributed grid.

Step 3b: Piloting Outcomes and the Final Q-Set (N = 39 + 1 Anchor Statement)

Prior to finalisation, the 36-statement instrument was piloted with three autistic individuals: an autistic adult woman who engaged with the instrument and provided detailed written feedback; an autistic adolescent within the target age range of 14 to 22; and a younger autistic child aged 10, included specifically to test the lower boundary of comprehensibility. The full documentation of piloting decisions, including which statements were revised, added, or consolidated and on what basis, is provided in Appendix B, Phase 3. Each participant sorted the 36 statements and, where they wished, provided feedback on individual items. The piloting served two purposes: to assess linguistic accessibility, and to validate thematic coverage from an autistic insider perspective.

Linguistic Revisions

Several statements were revised in phrasing on the basis of pilot feedback, affecting both vocabulary and sentence structure. For example, *causes me great difficulties* was simplified to *stresses me*; *I feel lonely* was revised to *I feel left out* to better capture the social exclusion

dimension rather than a general emotional state. The youngest pilot participant, aged 10, required clarification of several terms during sorting, directly informing subsequent linguistic simplification and confirming the decision to use a researcher-accompanied format as the default data collection mode for the subsequent Q-sort study.

Addition of Four New Statements

Four new statements were added to the instrument on the basis of pilot feedback. The most substantively significant arose from the piloting session: the autistic adolescent reported that his autism diagnosis had brought more difficulties than support in the school context, a perspective entirely absent from the original concourse derived from professional stakeholder interviews. The statement *My autism diagnosis has brought me more difficulties than support at school* was accordingly added to Section A. This absence is analytically significant: professional and parental accounts, however knowledgeable, may underrepresent experiences that are not easily observable, that conflict with dominant narratives about the benefits of formal diagnosis, or that are shared primarily within autistic communities.

Two further statements were added to Section C on the basis of written feedback from the autistic adult participant. These addressed the importance of completing tasks without interruption (*It is important to me to be able to finish a task without interruption*) and the wish to choose subjects according to personal interests and strengths (*If I could choose subjects according to my interests and strengths, things would go better for me*). Both reflect aspects of self-determination and structural adaptation that pilot participants indicated as personally significant and that had been underweighted in the original concourse.

A fourth statement was added to Section E on the basis of written feedback from the autistic adult participant, who indicated that a positive dimension of the teacher relationship, being genuinely appreciated as one is, was absent from the existing instrument. The statement *There are teachers who appreciate me as I am* was accordingly added to Section E, strengthening the perspective balance within that section by providing a positive counterpoint to the statements describing insufficient understanding or critical teacher attitudes.

Structural Consolidation in Section D

Two statements in Section D addressing overlapping aspects of flexible participation formats were consolidated into a single statement, reducing Section D from five to four statements. Specifically, the pre-piloting statements addressing participation from a quiet room within the school and participation via avatar or telepresence solutions were merged into one statement capturing the broader principle of alternative participation formats. This consolidation reduced potential redundancy in the instrument without sacrificing thematic coverage.

Content Validity Confirmation

All three pilot participants contributed substantively to the content validation of the instrument. The autistic adult participant provided detailed written feedback that directly generated three of the four new statements added to the instrument. The autistic adolescent's account of his diagnosis experience led to the addition of the analytically significant new

statement. All three participants expressed clearly positive views regarding alternative and digital participation formats, affirming the relevance and personal significance of the statements in Section D. This endorsement across all three pilot participants suggests that the statements in Section D were experienced as personally relevant and comprehensible, a finding that supports their retention but does not substitute for formal content validity assessment with a broader panel.

The Final Q-Set: Structure and Content

The net result of piloting was an increase from 36 to 39 statements, with four new statements added across Sections A, C, and E, one consolidation in Section D, and a net increase of three. The final instrument comprises 39 statements plus one anchor item, organised across five thematic domains. Table 2 provides an overview of the final Q-set structure with illustrative examples from each section. The complete Q-set is provided in Appendix C.

Table 2. Structure of the final Q-set

Sec.	Domain	N statements and illustrative examples
A	Subjective interpretations of school experience and educational disruption	10 statements <i>'I sometimes feel that school actually does not want me anymore'</i> <i>'When I had to change schools, it felt like a failure'</i> <i>'My autism diagnosis has brought me more difficulties than support at school' [added in piloting]</i>
B	Burden and stress factors	8 statements <i>'Noise, many people, and restlessness at school are very exhausting for me'</i> <i>'It is exhausting to constantly adapt to others'</i>
C	Protective factors and resources	11 statements <i>'When my needs are taken seriously, I can learn well'</i> <i>'It is important to me to be able to finish a task without interruption' [added in piloting]</i> <i>'If I could choose subjects according to my interests and strengths, things would go better for me' [added in piloting]</i>
D	Alternative educational formats and digital learning	4 statements (consolidated from 5 in pre-piloting) <i>'If I could choose how I participate depending on how I feel that day, learning would be less stressful'</i>
E	Teacher-related experiences	6 statements (increased from 5 in pre-piloting) <i>'Patient and calm teachers help me a great deal'</i> <i>'Some teachers shame or criticise me instead of helping'</i> <i>'There are teachers who appreciate me as I am' [added in piloting]</i>
Anchor	Plausibility check (not included in sort grid)	<i>'I usually know what is expected of me at school.'</i>

Traceability and Analytical Transparency

To ensure analytical transparency, a mapping procedure was employed to link each of the 39 final Q-statements to one or more statements from the refined 68-item pool, and thereby to the original coded interview material. The full traceability mapping is provided in Appendix C. Table 3 illustrates three exemplary pathways from coded interview segment to final Q-statement.

Table 3. Three exemplary traceability pathways from coded interview segment to final Q-statement.

Source and codes	Coded segment (translated from German)	Step 1 statement	Final Q-statement
INT11_Schoolaid2 (STATEMENT- RELEVANT; SOLUTIONS; RESOURCES)	<i>"of course, you need space to be able to leave the room"</i>	Students seek withdrawal spaces. [Statement #89]	<i>'There are too few opportunities to withdraw when everything becomes too much for me.' [Final #17]</i>
INT11_Schoolaid2 (STATEMENT- RELEVANT; TEACHER; PROBLEM)	<i>"many teachers normally have little experience or no experience at all"</i>	Teachers are often insufficiently prepared for autistic students. [Statement #21]	<i>'Many teachers have little knowledge about autism.' [Final #34]</i>
INT05_Teacher_Autistic (STATEMENT- RELEVANT; EDUCATIONAL DISRUPTIONS; Meaning)	<i>"For every child who was removed from my class, it was often against the will of the child, against the will of the parents."</i>	Decisions reinforce exclusions and are frequently made without the involvement of the autistic child. [Statement #154]	<i>'Others have already decided that I should no longer come to school.' [Final #5]</i>

Table 4 provides a summary overview of all four development stages, the procedures applied at each stage, and the guiding criteria.

Table 4. Overview of the concourse development process across all four stages, with procedures and guiding criteria.

Stage	N statements	Procedure	Guiding criteria
Step 1	173	Transformation of all thematically coded segments into generalisable third-person formulations; all coded passages (STATEMENT-RELEVANT, BURDEN, PROBLEM, RESOURCES, SOLUTIONS, TEACHER, EDUCATIONAL DISRUPTIONS) treated as potential sources	Distinctiveness; generalisability; potential answerability for target population (aged 14 to 22)
Step 2	68	Iterative merging of conceptually overlapping statements; thematic grouping into 10 domains; standardisation of formulation	Semantic redundancy; conceptual coverage; statement quality; perspective balance
Step 3a	36 + 1 anchor (A=9, B=8, C=9, D=5, E=5)	Selection from 68-statement pool; first-person reformulation; linguistic adaptation for target age group	Thematic coverage; perspective contrast; comprehensibility; practical manageability (approx. 40 items)
Step 3b	39 + 1 anchor (A=10, B=8, C=11, D=4, E=6)	Piloting with 3 autistic individuals; linguistic revisions; +4 new statements (A+1, C+2, E+1); Section D consolidated (-1); net increase: +3	Comprehensibility; content validity from autistic insider perspective; compatibility with Q-methodological factor analysis

DISCUSSION

This paper has described the systematic development of a Q-set for research on the school experiences of autistic students in Bavaria, moving from multi-stakeholder interviews through iterative reduction to a final instrument of 39 participant-oriented statements validated through piloting with autistic individuals. The discussion addresses what the procedural model contributes to the field, what the piloting finding illustrates about a general mechanism in instrument development, and how the model may transfer to other populations and research contexts.

What the Procedural Model Contributes

The development process documented here constitutes a procedural model absent from the existing Q-autism literature: staged, criteria-guided concourse reduction with full traceability from source material to final instrument, combined with participatory piloting as a substantive validation stage. In contrast to the studies reviewed, which either name sources without documenting selection decisions or describe piloting without recording its consequences for individual statements, the present process makes each step assessable and reproducible. A defining methodological feature of this study was the deliberate inclusion of structurally distinct stakeholder perspectives in the interview sample. This multi-perspective approach reflects the core logic of concourse construction: the concourse is understood as a discursive field rather than a single authoritative account, and its representativeness depends on capturing the range of viewpoints within that field (Brown, 1993; van Exel & de Graaf, 2005; Watts & Stenner, 2012). Drawing the concourse from multiple sources, including interviews with teachers, school support staff, parents, and autistic adults, ensures that the raw material represents the full range of existing positions on the topic rather than only those that are institutionally visible (van Exel & de Graaf, 2005). Different stakeholder groups contributed qualitatively different kinds of knowledge. Teachers and school support staff described observable behaviour patterns and institutional constraints; parents contributed knowledge of experiences outside school and the emotional burden of educational disruption; autistic adults supplied insider accounts of subjective experience that third-party observers could not have generated. It is precisely this combination of perspectives that distinguishes the present concourse from those derived exclusively from institutional or professional accounts. The same commitment to representativeness that shaped the sampling design also informed the approach to instrument validation. The piloting phase is best understood not as a technical pre-test of instrument functionality but as an integral and substantive stage of concourse development. The involvement of autistic individuals, including an autistic adolescent within the target age range, allowed the instrument to be assessed and revised from an insider perspective before finalisation. This approach aligns with the growing emphasis on participatory research practices in autism studies (Fletcher-Watson et al., 2019) and with the principle that methodological choices in autism research are never value-neutral: they either reproduce or challenge the epistemic exclusion of autistic people from knowledge production about their own lives (Botha & Cage, 2022; Chapman & Carel, 2022). As van Exel and de Graaf (2005) note with respect to Q methodology more broadly, the researcher's responsibility does not end with the construction of a logically coherent statement set; it extends to ensuring that the viewpoints present in the concourse are genuinely accessible and expressible by the participants who will sort them. The present study adopts a staged model of participatory involvement, in which autistic individuals contributed at the instrument validation stage rather than from the outset of concourse generation. This reflects a deliberate methodological choice: the concourse was first grounded in the naturalistic discourse of multiple stakeholders, including autistic adults, through semi-structured interviews, before being subjected to autistic insider review through piloting. The piloting phase was a substantive analytical stage, in which autistic participants assessed the instrument from an experiential perspective that

professional and parental accounts cannot readily provide. The consequential changes that resulted, including the addition of four new statements and the revision of several items, suggest that the staged approach identified important gaps that the professionally generated concourse had not captured. Future studies may extend this model by involving autistic young people directly in concourse generation from the outset, moving toward fuller co-production of the research instrument.

The Piloting Finding as Illustration of a Mechanism

The piloting phase identified a perspective absent from the original concourse despite eleven interviews with knowledgeable stakeholders. This finding illustrates a specific mechanism, one that, we suggest, is not limited to this study or this topic: professionally generated concourses may carry structural blind spots that participatory validation can surface. Whether this mechanism operates consistently across different topics and populations is an open empirical question; the present case provides a concrete instance that motivates further investigation. Professional stakeholders typically frame formal autism diagnosis as a gateway to support, resources, and adjusted expectations. Parental accounts similarly tend to position diagnosis as the outcome of sustained advocacy (Crane et al., 2016) and a source of relief and recognition. As Fletcher-Watson (2024) notes, children often have far less clarity about how a diagnosis sought by their parents is intended to benefit them, and the social consequences of diagnosis, particularly where labelling dynamics are acutely salient in school contexts, may be experienced in ways that professional and parental accounts cannot capture (Muraškaitė & Žardeckaitė-Matulaitienė, 2024). The fact that this perspective required an autistic pilot participant to surface it makes a concrete argument for treating autistic involvement in instrument development not as a methodological enhancement but as a methodological necessity.

The Distribution of the Final Q-Set

The distribution of the final Q-set reflects the discursive reality of schooling for autistic students in Bavaria as reported by those closest to it: the interview material was predominantly burden-oriented, and the Q-set mirrors this while ensuring, through the perspective balance criterion, that positive, resource-oriented, and conditional statements present in the material were systematically retained rather than lost in reduction (van Exel & de Graaf, 2005). Section C, comprising 11 statements dedicated entirely to protective factors and resources, and Section D, comprising 4 statements addressing alternative educational formats, together form a substantial positive counterweight to the 8 burden statements of Section B. Because Q methodology is ipsative, participants prioritise statements relative to one another rather than rating them in absolute terms (Watts & Stenner, 2012; van Exel & de Graaf, 2005; Müller & Kals, 2004); a Q-set that includes both burden and resource statements enables participants to articulate the full range of their subjective experience, which a purely burden-oriented instrument would foreclose.

Transferability of the Model

The procedural model documented here was developed for a specific context: the school experiences of autistic adolescents and young adults aged 14 to 22 in the multi-tier, ability-tracked Bavarian school system. Statements referring to school changes, placement decisions, and the consequences of educational disruption reflect the particular configurations of this system. The procedural model itself is not context-specific: the same staged approach, explicit reduction criteria, traceability documentation, and participatory piloting could be applied to Q-set development with other neurodivergent populations, in other national school systems, and in Q-sort research on topics beyond schooling.

Limitations

Several limitations require explicit acknowledgement. First, the development process was conducted by a single researcher. While this ensured analytical consistency, it precluded independent checking at each stage. The use of explicit documented criteria and external piloting validation partially compensates for this, but the possibility of systematic interpretive bias cannot be fully excluded. Future studies should consider involving a second analyst in at least the reduction and selection stages.

Second, the concourse development interviews were conducted with a relatively small sample of 11 participants drawn from the researcher's professional networks in Bavaria, which may limit the range of perspectives captured. Most consequentially, the voices of autistic students themselves were not included in the concourse development interviews, only in the piloting phase. A more fully participatory design would have involved autistic young people in the concourse development from the outset.

Third, as noted in the discussion of transferability, the Bavarian school system context limits the direct portability of individual statements.

Fourth, the pilot participants were three autistic individuals recruited through personal networks. Their feedback was substantive and consequential, but cannot be treated as representative. Future instrument development studies should invest more systematically in the piloting phase, including with a broader age range, greater diversity of autistic experience and communication profiles, and more formal feedback procedures.

CONCLUSION

The theoretical case for transparent, participatory Q-set development is well established in the autism research literature. What has been missing is a concrete procedural model showing how that case translates into practice at the level of instrument construction. This paper provides that model: a staged, criteria-guided concourse development process with full traceability from source material to final instrument, documented in sufficient detail to permit assessment, replication, and adaptation across different populations and research contexts.

The empirical finding from the piloting phase illustrates why the procedural model matters: a perspective absent from professional stakeholder interviews was identified only through structured autistic involvement. This finding is offered not as proof of a universal pattern but

as an illustration of a mechanism – one that the field should investigate more systematically. Professionally generated concourses may carry structural blind spots that participatory validation can surface; the present case documents both the gap and a replicable procedure for addressing it.

Supplementary Materials

Owing to their length, Appendices A-C are not reproduced in the printed article. They are openly available in the Open Science Framework (OSF) repository at <https://doi.org/10.17605/OSF.IO/RV8CG>, released under a CC-BY 4.0 license. Appendix A contains the initial concourse (173 statements) and its mapping to the coded interview material; Appendix B contains the refined 68-statement pool with the reduction criterion applied to each statement (Phase 2) and the documentation of the piloting decisions (Phase 3); Appendix C contains the final 39-statement Q-set and the complete traceability mapping.)

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