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Editorial: Open Issue 2026

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In this 11th issue, Confero turns its attention to questions of justice and equity in education, both within the classroom and in wider pedagogical debates. Two articles use case studies of education in Sweden to consider the potential of pedagogies and organizational practices that aim to counteract systemic inequalities and open up new pathways for critical dialogue, one focused on critiquing the notion of ‘inclusion’ in Swedish special education and one on epistemic courage as a pedagogical tool. A third essay examines how mathematics education, often considered a politically neutral discipline, is entangled in overlapping sociopolitical crises and calls for a renewed vision in which math education is an active force for positive change. Taken together, the three articles demonstrate the need for educational practices that attend to the political and social challenges of our times.

In the first essay titled *From Inclusion to Organizational Differentiation?*, researcher Mimmi Norgren Hansson offers both timely and novel insights into contemporary debates on special education. Using Nancy Fraser’s redistribution-recognition framework, the essay engages with Swedish inclusion discourse and, in doing so, sheds light on affirmative and transformative strategies. By examining tensions between competing approaches to inclusion, the essay moves beyond conventional debates on advantaged and disadvantaged groups of pupils, transforming pedagogical matters into questions of justice. Norgren-Hansson questions dichotomous understandings of inclusion and organizational differentiation, suggesting that these approaches may be less opposed than commonly assumed. A significant contribution of the essay is its rethinking of individual and collective needs related to special education. In

challenging current lines of thought, Norgren Hansson invites reflection on organizational and normative ways of pursuing educational equality.

In the second essay titled *For Whom the Bell Tolls: Mathematics Education in Times of Crisis*, Constantinos Xenofontos discusses the importance of recognizing how the political-economic analysis of modern crises shapes the way mathematics students view and engage with said crises. His timely argument comes during a period when the world witnesses multiple wars, a genocide, economic hardships and an ever-pressing environmental crisis. He argues that mathematics education can influence the way crises are understood by emphasizing certain perspectives such as efficiency or profit over other social or moral considerations. He proposes that mathematics ought to recognize its institutional and pedagogical role in understanding crises. Through a reinterpretation of Skovsmose's (2021) categories for the field of education, in the picturing, constituting, and formatting of crises, Xenofontos encourages a reflexive approach that centers social justice. In doing so, he argues that the myth of neutrality within mathematics education needs to be scrutinized, and that engaging with political, social and ethical dimensions is crucial.

In the essay *Epistemic Courage and Literary Instruction: An Exploratory Conceptual Discussion Addressing Contemporary Challenges in Swedish High Schools*, Karl Ågerup then examines the concept of epistemic courage. Against a backdrop of political polarisation and declining public dialogue, Ågerup considers epistemic and dialogical courage as a way for schools to help young people become autonomous and confident, while also remaining open to diverse and sometimes challenging perspectives that differ from their own. Drawing on Jonathan Ichikawa's concept of epistemic courage and theories of transformative learning, Ågerup argues for classroom practices that encourage students to test their beliefs. Literature and literature instruction can become pedagogical resources through which pressing and sometimes difficult social and ethical questions can be raised and explored. This pushes students to encounter unfamiliar perspectives in ways that support democratic participation.

Read together, the three contributions in *Confero's* eleventh issue situate education within an ongoing polycrisis, one that operates as much through the micro-politics of the classroom as through the macro-structures of disciplinary and institutional practice. Each contribution, in its own way, pushes against the idea that educational spaces and disciplines can be neutral, and invites the reader to reflect on the kind of education we want to build in response.

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From Inclusion to Organisational Differentiation? A Fraserian Critique of Special Teaching Groups in Swedish Special Education Discourse

Mimmi Norgren Hansson

Introduction

How schools are organised shapes pupils' opportunities to participate in education. The environments that schools constitute, together with the norms that structure them, tend to accommodate some pupils more readily than others. Questions of school organisation are therefore not only pedagogical in nature; they are also fundamentally questions of justice.

From this perspective, the debate on inclusion and exclusion in education becomes particularly significant. It not only reveals prevailing normative orders, but also how school organisation produces advantaged and disadvantaged groups of pupils. Special teaching groups (In Swedish *särskilda undervisningsgrupper*, i.e. small, separate instructional groups for pupils assessed as in need of special support) offer a particularly revealing site for examining the relationship between school organisation, inclusion, and justice, as they bring these tensions to the fore in policy and media debates. This is especially relevant in the current Swedish context, where significant changes are underway, making a justice-oriented perspective on organisational differentiation in education timely.

Recent policy proposals, expressed in government inquiries and political agreements, indicate a shift toward expanding the use of

special teaching groups (Tidö Agreement, 2022; SOU 2025:44). Although these proposals have not been implemented, the ambitions articulated in contemporary debates increasingly legitimise a school system based on organisational differentiation. This development is notable given Sweden's long-standing policy ambition to establish an inclusive school system, in which pupils' diverse needs are, as far as possible, addressed within mainstream classroom settings.

In this article, I draw on Nancy Fraser's redistribution–recognition dilemma to analyse this development. There are several reasons why Fraser's framework is particularly useful in this context. First, it makes it possible to examine how different forms of support may function as either affirmative (compensatory) or more transformative responses to educational disadvantage. Second, it enables an analysis of how responses that appear egalitarian can nonetheless reproduce the hierarchies they seek to remedy. Third, it brings together questions of resource distribution and cultural values. Finally, it provides a basis for shifting the focus from specific interventions to the broader logics through which educational injustice is produced and managed. Building on this, I argue that changes in the understandings of special teaching groups in Sweden from the 1960s to the present can be interpreted as a shift between different affirmative strategies, initially grounded in recognition and later in redistribution. This, in turn, suggests that a fragmented focus on different dimensions of disadvantage may contribute to an ongoing shift between positions 'for' and 'against' special teaching groups. On this basis, I go on to consider what a more transformative approach to educational justice might entail.

While the analysis centres on special teaching groups, organisational differentiation in the Swedish school system extends beyond this arrangement. Contemporary debates on special education in Sweden encompass a wider range of organisational forms, including special schools for pupils with intellectual disabilities, special needs schools, and other forms of segregated provision such as 'acute schools'. These parallel school forms represent more far-reaching institutionalised forms of

differentiation, in some cases including separate curricula (e.g. Lgrsär 22). Although they are not examined as primary cases in this article, references to research on public debates concerning such school forms are included where relevant, as they point to justificatory logics similar to those discussed here in relation to special teaching groups.

It is also important to emphasise that pupils in special teaching groups do not constitute a homogeneous or fixed group. Rather, they represent a heterogeneous category whose boundaries are shaped and reshaped across contexts in relation to changing societal norms and expectations of pupils. Yet, this category becomes socially visible in everyday school practice when pupils are grouped together and distinguished from others. Rather than treating pupils in special teaching groups as a pre-given collective, I approach this category as something that is constituted and made meaningful in relation to debates on special education. Accordingly, the analysis should be understood as a theory-driven examination of how justice, support, and differentiation can be understood, through Fraser's framework, in relation to policy and public debates on special teaching groups within the Swedish school system.

Disability, difference, and justice in special education

Within special education research, a common distinction is made between categorical and relational perspectives (e.g. Persson, 2019). A categorical perspective locates educational difficulties within individual pupils, whereas a relational perspective understands such difficulties as emerging in the interaction between the pupil and the educational environment, and as shaped by the organisation and normative expectations of schooling. Closely related arguments are found in the work of Thomas Skrtic (1991, 1995), who shows that the organisation of schooling itself plays a central role in producing the problems that special education is then tasked with addressing. From this perspective, schools as bureaucratic institutions generate ideas of normality and deviance that both structure and justify the differentiation of

pupils. Traditional special education can thus be understood not merely as a response to pre-existing needs, but as part of an organisational logic that stabilises the categories it seeks to support.

This emphasis on categorisation also relates to a central concern within disability studies. Disability categories are typically constructed in relation to dominant norms of ability (e.g. Goodley, 2014). This gives rise to a well-known dilemma: while such categories are mobilised to articulate claims to rights, resources, and social justice, they may simultaneously reproduce the very hierarchies between ability and disability on which they are based. At the same time, they remain indispensable for making such claims legible within existing institutional frameworks. As Vehmas and Watson (2014) argue, addressing injustice in this context requires both a critique of normative frameworks and a recognition of material disadvantage. Efforts to dismantle exclusionary norms must therefore be accompanied by concrete political measures, including the allocation of resources and the recognition of difference.

This tension becomes particularly salient when viewed through Nancy Fraser's theorisation of redistribution and recognition, which provides a framework for analysing how attempts to address injustice may operate in conflicting ways. Building on this, I examine how these tensions are articulated in Swedish policy and media debates on special teaching groups, and argue that they take the form of predominantly affirmative strategies.

The redistribution-recognition dilemma

To analyse different forms of injustice, Nancy Fraser (2003) introduces what she calls the redistribution–recognition dilemma, a framework she further develops in later work¹. This distinction

¹ Fraser (2009) later extends this model into a three-dimensional theory of justice by adding the category of representation. As the present analysis addresses institutional and normative differentiation internal to the school system, rather than questions of political membership or decision-making procedures, it draws on the two-dimensional version.

makes it possible to understand injustice as rooted either in political-economic or cultural-value-based differentiation. In the former case, an ideal-typical collective is oppressed primarily because of economic inequalities; Fraser's example here is class. It is the unequal distribution of economic resources that generates the injustice, and it is this injustice that gives rise to the collective itself. In this sense, the injustice and the differentiation are one and the same. Injustices grounded in political-economic differentiation are therefore addressed through redistribution. The purpose of redistribution is not to improve the circumstances of the working class as such, but rather, as Fraser puts it, "to abolish itself as a class" (Fraser, 2003, p. 186). The second form of injustice arises through cultural-value-based differentiation. Here, the collective does not occupy a distinct position in the division of labour, which means that structural change cannot be achieved through economic redistribution. Instead, what the group requires to overcome the injustices imposed by dominant collectives is recognition, understood as the revaluation of social status and cultural meanings. Fraser (2003) illustrates this with the example of homosexuality. In this case, it is cultural devaluation that constitutes the injustice, and the remedy is therefore a transformation of cultural value patterns (p. 188). Thus, injustices rooted in economic conditions call for redistribution, whereas those rooted in cultural values call for recognition.

However, Fraser (2003) also emphasises that some collectives are bivalent in the sense that they require both redistribution and recognition; her central example is the subordination of women (p. 191). The difficulty arises because the logic of redistribution aims at dissolving the collective, whereas the logic of recognition seeks to revalue it. Redistribution, in this view, would work to make gender an inconsequential social category, while recognition would seek to assign women a higher social standing (Fraser, 2003, p. 191). This tension makes it challenging to pursue redistribution and recognition simultaneously, since each presupposes a different stance toward the continued existence of the collective. To address this problem, Fraser distinguishes between affirmative and transformative forms of redistribution and recognition (Fraser, 2003, p. 195; see also Fraser, 2007).

Affirmation is grounded in a universalist commitment to the equal worth of all persons, yet it addresses injustice only at a superficial level. In the domain of redistribution, it comprises measures such as income transfers, social insurance, and other welfare-state programmes that reduce economic disparities without transforming the underlying class relations and structures of production that generate those disparities in the first place (Fraser, 2003, p. 199). Such measures can, however, produce stigma for the very groups they are intended to support. Fraser characterises this tension as a mismatch between the aims of affirmative redistribution and its practical effects when redistributive interventions must be enacted repeatedly. Over time, these repeated interventions may foster distrust between groups, as redistribution can come to be perceived as unfair. Those who receive redistributed resources may therefore become vulnerable to new forms of recognition-related injustices (Fraser, 2003, p. 200).

In the realm of recognition, a similar distinction between affirmative and transformative approaches applies. Affirmative strategies aim to raise the social standing of a previously devalued group, yet they do so without altering the content of the group's identity or the underlying patterns of differentiation that sustain social hierarchies. Transformative recognition, by contrast, seeks to reshape the cultural-value order within which the injustice is embedded (Fraser, 2003, p. 196). Accordingly, affirmative recognition is directed at revaluing a particular group identity, whereas transformative recognition aims to revise the identity structures of all participants. Hence, transformative recognition and transformative redistribution work in an analogous way: the goal is to fundamentally reorganise society so that injustices no longer arise.

	Affirmation	Transformation
Redistribution	<i>The liberal welfare state</i> Surface reallocation of existing goods to existing groups; supports group differentiation; can generate misrecognition	<i>Socialism</i> Deep restructuring of relations of production, blurs group differentiation; can help remedy some forms of misrecognition
Recognition	<i>Mainstream multiculturalism</i> Surface reallocation of respect to existing identities of existing groups; supports group differentiation	<i>Deconstruction</i> Deep restructuring of relations of recognition; blurs group differentiation

Model 1: Fraser’s (1995) distinction between affirmative and transformative strategies of redistribution and recognition.

Fraser elaborates this argument further through the distinction between the identity model and the status model (Fraser, 2000). The identity model, which Fraser is strongly critical of, understands injustice as rooted in the devaluation of identities. Oppression is therefore conceived as arising from the stigma attached to certain group identities by dominant groups. The corresponding remedy is to “repair” this damaged identity by creating new self-representations that can receive societal recognition. Fraser critiques this model for placing a moral burden on individuals to orient themselves toward a prescribed group identity and for overlooking redistribution as a crucial means of achieving social justice. As a more promising alternative, she proposes the status model, which treats recognition as a question of social status, and formulates the point as follows:

To be misrecognized, on this view, is not simply to be thought ill of, looked down on, or devalued in others' conscious attitudes or mental beliefs. It is rather denied the status of a full partner in social interaction and prevented from participating as a peer in social life as a consequence of *institutionalized* patterns of cultural value that constitute one as comparatively unworthy of respect or esteem. This approach avoids difficulties that arise when misrecognition is understood psychologically. When misrecognition is identified with internal distortions in the structure of self-consciousness of the oppressed, it is but a short step to blaming the victim. Conversely, when misrecognition is equated with prejudice in the minds of the oppressors, overcoming it seems to require policing their beliefs, an approach that is authoritarian. On the justice view, in contrast, misrecognition is a matter of externally manifest and publicly verifiable impediments to some people's standing as full members of society. And such arrangements are morally indefensible whether or not they distort the subjectivity of the oppressed (Fraser, 1999, p. 35).

From the perspective of the status model, the central task is therefore to examine how redistribution and recognition can enable members of disadvantaged collectives to participate in social life on equal terms. For the purposes of this discussion, pupils placed in special teaching groups are analysed as a socially differentiated collective produced through school organisation. Yet conceptualising 'them' as a group is analytically challenging: much like the category of class, the collective's existence is inseparable from the disadvantages that produce it. The pupils become a group only because the organisation of schooling fails to accommodate them within mainstream instruction. Their collective identity is thus generated through separation and legitimised by dominant norms of expected pupil performance. In this context, identity-based recognition is difficult to

operationalise, since no positive or stable shared identity exists beyond the common experience of being excluded. Fraser's distinction between identity- and status-based recognition is therefore particularly salient for the analysis that follows.

Overall, Fraser's framework connects cultural-value structures with resource allocation. This makes it possible to analyse the changing discourse on inclusion in Sweden, as it reveals how well-intentioned reforms may reinforce differentiation when they operate within an affirmative logic. In this sense, special teaching groups can be analysed not merely as pedagogical arrangements but as institutional responses to injustice. Before addressing the contemporary inclusion debate, a brief clarification is needed of the legal and organisational arrangements that govern assistance for pupils in need of special support in Sweden.

Extra adaptations and special teaching groups

In the Swedish school system, support is typically organised through two main forms of intervention: extra adaptations and special support. Extra adaptations are intended to be minor pedagogical adjustments implemented within the regular classroom, while special support is more extensive and may, under specific conditions, take the form of individual instruction or placement in a special teaching group, that is, a smaller, separate instructional setting outside the mainstream classroom (SFS 2010:800). Although the principle of inclusion has long dictated that support should primarily be provided within mainstream instruction, these exceptions have enabled a continued use of organisational differentiation.

The distinction between extra adaptations and special support was clarified in a 2014 revision of the Education Act, which emphasised that extra adaptations should fall within teachers' professional competence and be manageable in ordinary classroom settings (Prop. 2013/14:160). Yet the practical application of this distinction has been contentious. Schools have struggled to determine when adaptations are sufficient and when special

support is required, and debates have emerged about whether the current model places unreasonable demands on teachers or fails to adequately meet pupils' needs.

Recent government inquiries propose removing the requirement that special support be justified by 'specific reasons' and simplifying the procedures for placing pupils in special teaching groups (SOU 2025:44). These proposals indicate a shift away from the earlier ambition to reduce organisational differentiation and instead point toward an expansion and legitimisation of segregated arrangements within compulsory schooling.

A changing Swedish inclusion discourse

Since the 1960s, there has been a political consensus in Sweden aimed at establishing 'a school for all' (Persson, 2019). This ideal envisions an educational system designed to ensure that the vast majority of pupils can access their education within the mainstream classroom environment. Nonetheless, this ambition has not been without exceptions, as it was common during this period to organise so-called 'OBS-classes' (observation classes) intended for pupils in need of support (Lgr 62, p. 77). The differentiation of pupils in need of special support therefore became a basis for organising schools, resulting in increased segregation within the educational system.

This organisational differentiation was, however, met with sharp criticism in Sweden. It was contested not only due to its ineffectiveness in promoting pupils' academic achievements, but also because it tended to socially stigmatise pupils placed in these separate classes (Ahlström, Emanuelsson, & Wallin, 1986; Österling, 1967). As a result, the strong critique catalysed a paradigm shift from organisational differentiation to pedagogical differentiation. This meant that rather than placing pupils in need of special support into separate classes, special educational interventions were to be integrated within regular classroom settings to a much greater extent (SFS 2010:800; SOU 1974:53). The transition from organisational to pedagogical differentiation

was largely driven by an increased emphasis on individualised education and reflected a broader political and societal commitment to ensure that every pupil's right to an equal education is fulfilled. This shift was further consolidated through a series of curriculum reforms (e.g., Lgr 62; Lgr 69; Lgr 80), which reinforced the principle of adapting teaching practices to meet the unique needs of each pupil. The state inquiry 'The inner work of the school' (SOU 1974:53) was especially influential in transforming the Swedish perspective on special education, and the following government bill underscored the importance of adapting teaching to meet the individual needs of each pupil, marking a shift toward pedagogical differentiation (Prop. 1975/76:39, p. 1).

It is within this context that inclusion became a cornerstone of Swedish educational policy, further emphasized in the Salamanca Declaration (Swedish National Commission for UNESCO, 2006). Sweden has also been internationally regarded as having an inclusive school system (EADSNE, 2003, p. 113), although critical reviews have demonstrated shortcomings in this assessment (Göransson, Nilholm, & Karlsson, 2011). The flexibility built into the legislation has led some scholars to characterise the Swedish system as one of 'weak inclusion,' where inclusion functions as an aspirational principle but exemptions are routinely made for particular cases (Carlsson & Nilholm, 2004). While this inclusive ideal has long served as a guiding principle in Swedish education, it is now increasingly being questioned. A key indicator of this shift is the growing number of media debates in which inclusion is framed as a problem rather than a goal.

Research on these debates shows that arguments for segregation are often presented as protecting vulnerable pupils, improving learning conditions and offering especially competent teachers, thereby aligning with what has been conceptualised as segrequality—the idea that equality for some pupils is best achieved when their needs are met in separate, tailored settings (Göransson & Bengtsson 2023, p. 300). These arguments also tend to position individual and collective interests against each other, for example by asserting that pupils have a right to a calm and safe learning environment that can only be ensured through

sorting out those deemed disruptive (Bunar, 2024; Bagger & Lillvist, 2021, p. 66). Other analyses demonstrate how the claim that ‘inclusion has gone too far’ has become politically institutionalised, influencing policy reforms and legitimising segregated environments as efficient and equitable alternatives (Magnússon & Paulsrud, 2025). Taken together, these studies indicate a discursive reorientation in which organisational differentiation is increasingly framed not as a departure from inclusion, but as a pragmatic and, at times, even just response to contemporary challenges in education.

Another factor that likely contributes to the shifting discourse on inclusion in both research and public debate is the criticism directed at extra adaptations in recent years. Educational researchers (Jönsson, 2018; Klapp & Jönsson, 2021; Sandström, Lindqvist, & Klang, 2017), teachers’ unions (Sweden’s Teachers, 2024), and public commentators (Karlsson, 2024; Mikko, 2023) have highlighted that extra adaptations have not produced the expected outcomes and have, instead, led to a heightened workload for teachers in compulsory school. These concerns are also reflected in the government’s committee directive and subsequent interim reports, which propose abolishing extra adaptations and simplifying the procedures for placing pupils in special teaching groups or individual education (Dir. 2024:30; SOU 2025:44). Hence, the earlier shift from organisational differentiation to pedagogical differentiation may now be reversing.

To understand this development, it is helpful to recall the rationale that previously motivated moves away from organisational differentiation. At that time, a commonly raised concern was that pupils in special teaching groups risked being stigmatised. From a Fraserian perspective, this earlier line of argument can be understood as operating within a logic of recognition: by reintegrating pupils into regular classes, the aim was to remove the stigma associated with segregation. In the current debate, by contrast, a typical argument is that pupils placed in special teaching groups can receive more appropriate and effective support. Such claims rest on a logic of redistribution, in which

additional resources are directed toward those identified as needing special support. Hence, contemporary debates on the organisation of special educational support may be read as shifting from a logic of recognition toward a logic of redistribution. While these patterns are not exhaustive, they illustrate two contrasting logics that have shaped the debate at different moments, a tension central to the redistribution–recognition dilemma.

Analysing the discourse from a Fraserian perspective

In the following analysis, I examine how justifications for placing pupils in special teaching groups can be interpreted through Fraser's redistribution–recognition dilemma. I first show how these claims rely on logics characteristic of affirmative redistribution and recognition. I then offer a tentative exploration of what a transformative approach might require, and how adopting such a perspective would reframe the current debate on support for pupils in need of special support.

Affirmative redistribution/recognition

Affirmative redistribution involves reallocating resources to reduce political-economic disadvantages facing marginalised groups, but without changing the underlying conditions that produce these disadvantages. In relation to class, for example, redistribution might take the form of income transfers. When redistribution is enacted through special teaching groups, it becomes affirmative if it reinforces rather than challenges the differentiation between groups. Within this logic, such groups are presented as necessary in order to provide pupils in need of special support with more extensive provision than other pupils in the school. The educational goods being redistributed may include a higher staff–pupil ratio, teachers with specialised qualifications such as special educators, access to better facilities, and support functions such as counsellors or school psychologists, along with other resources that can be shifted within the school organisation. The key point is that, within this logic, special teaching groups are

justified through the redistribution of resources. However, these changes do not alter the school system as a whole, instead, they are based on segregating those pupils in need of special support, therefore reinforcing differentiation.

There are two problems with this logic when applied to the Swedish context, one empirical and one theoretical. Existing research does not provide clear evidence that special teaching groups improve pupils' educational outcomes (Giota, Lace, & Emanuelsson, 2023; Jönsson, 2018, p. 3), therefore further evaluative studies are needed. In addition, a recent review by the Swedish Schools Inspectorate (2024) concluded that most of the examined schools needed to improve the quality of their provision in special teaching groups. Identified shortcomings concerned the scope and variation of instruction, the extent to which teaching was adapted, and the deprioritisation of pupils' knowledge development (Swedish Schools Inspectorate, 2024). On this basis, there is currently no strong empirical support for the assumption that special teaching groups will ensure that educational resources are used in ways that reduce disparities between advantaged and disadvantaged pupils.

However, even if we imagine a scenario in which the development of special teaching groups led to better outcomes for the disadvantaged group of pupils, a theoretical problem will remain in light of Fraser's account of the redistribution–recognition dilemma. The allocation of resources to such groups presupposes that pupils accept membership in the collective created by this differentiation. In other words, the solution depends on and reinforces group differentiation. This leads to other concerns. First, pupils placed in special teaching groups risk being stigmatised and internalise a negative self-understanding. Second, even if special teaching groups were to deliver strong educational outcomes, a Fraserian analysis suggests that affirmative redistribution may still generate misrecognition. Because support must be targeted at a delimited collective, the intervention risks producing resentment among those outside the group, while simultaneously stabilising the disadvantaged group as a distinct

social category. In this sense, the remedy may reproduce the very status hierarchy it seeks to mitigate.

Turning from affirmative redistribution to affirmative recognition reveals a parallel set of difficulties, this time concerning the cultural–value dimension of differentiation. Within this logic, placing pupils who are constructed as deviating from dominant school norms in special teaching groups is framed as a way of providing them with a safer and more supportive school environment. Such reasoning relies on an identity-based conception of recognition, insofar as it treats the perceived divergence of these pupils as a defining group characteristic that warrants separate treatment. Media debates offer examples of this reasoning, where it is argued that certain pupils differ so markedly from others that they benefit more from differentiated provision, and that they risk marginalisation if they remain in mainstream classes (Göransson & Bengtsson, 2023, pp. 296–297). Differentiation is thus presented as a means of promoting equality, yet it reflects an affirmative form of recognition: it aims to protect pupils from the immediate pressures of mainstream schooling without challenging the structural and normative conditions that generate marginalisation in the first place.

Affirmative recognition may also take the form of efforts to construct a shared group identity within special teaching groups. Yet it is difficult to see how pupils placed in such groups could inhabit a meaningful collective identity, since ‘school difficulties’ offer little ground for an empowering self-understanding. Diagnostic labels might seem to provide a more positively framed identity that could be revalued, but this approach reintroduces the difficulty Fraser associates with the identity model by making recognition contingent upon adopting a predefined group identity.

If the aim is to address inequalities within the school system, affirmative redistribution through special teaching groups raises difficulties, as it may reinforce group differentiation and give rise to misrecognition. Affirmative recognition grounded in group identity presents similar challenges, insofar as it can reproduce

cultural–value hierarchies or generate identity collectives that do not necessarily align with the experiences of individual pupils.

Transformative redistribution/recognition

To consider what a more transformative approach might involve, Fraser's framework offers two guiding principles. First, a transformative approach must work to reduce differentiation by restructuring arrangements that affect all pupils. Second, recognition must be understood in terms of status, enabling disadvantaged groups to participate on equal terms with others.

Hence, a transformative redistribution of educational goods would need to encompass all pupils. Its aim would not be to compensate for disadvantage within existing structures, but to alter those structures so fundamentally that the conditions producing disadvantage no longer arise. This is a far-reaching and radical ambition. Such a perspective prompts questions about when and why the need for special support emerges. Measures such as substantially reducing class sizes or introducing co-teaching models may be seen as examples of systemic reforms that could, in principle, reshape schooling in ways that lessen the gap between advantaged and disadvantaged pupils. From a Fraserian standpoint, the central question for any distribution of educational goods is therefore whether, and in what ways, it contributes to permanently reducing differentiation. In a similar way, recognition would, if it is to function transformatively, need to reshape the cultural–value structures of schooling. This might involve rethinking the assumptions that define what counts as valuable knowledge, how learning is measured, and which forms of performance are recognised. Such a shift would also unsettle deficit-oriented narratives that portray individual pupils as the source of educational failure. Accordingly, transformative recognition is concerned with altering the status hierarchies embedded in the school's normative order.

Such a transformation of the school's value patterns would be easier to pursue if the organisation of schooling were restructured

in ways that enabled more pupils to participate in mainstream instruction. At the same time, shifts in underlying value orientations may themselves support and legitimise the organisational changes required, potentially generating the political momentum for a more far-reaching restructuring of the Swedish school system. From this perspective, transformative redistribution and recognition can be understood as mutually reinforcing, since both seek to unsettle the conditions that produce differentiation and injustice. By contrast, efforts to extend recognition to all pupils without addressing the conditions that generate school difficulties may, despite good intentions, reproduce misrecognition.

These dynamics become particularly visible when the historical shifts in Swedish special education are viewed through Fraser's framework. The abolition of OBS-classes may be taken to represent an affirmative move centred on reducing stigma, yet it did not entail a broader transformation of the organisational conditions that produced school difficulties. The subsequent introduction of extra adaptations likewise constituted an affirmative form of redistribution, directing support to individual pupils without altering the structures that made such support necessary. The growing criticism of extra adaptations—often framed as a conflict between pupils' rights to support and teachers' limited capacity to provide it—illustrates how affirmative redistribution can generate new forms of misrecognition, as Fraser predicts. In the current debate, this dynamic appears to be contributing to a renewed turn toward affirmative redistribution, this time through the expansion of special teaching groups. Together, these shifts reveal a recurring oscillation between different affirmative strategies in Swedish special education, none of which fundamentally restructures the conditions under which educational disadvantage arises. The contrast between these affirmative and transformative logics can be summarised as follows:

	Affirmation	Transformation
Redistribution	<i>Special teaching groups</i> Surface reallocation of existing goods to special teaching groups; supports group differentiation; can generate misrecognition	<i>Reorganisation of school system</i> Deep restructuring of school organisation so it affects all pupils for example, by increasing teacher-pupil ratio, blurs group differentiation; can help remedy some forms of misrecognition
Recognition	<i>Identity based grouping</i> Using grouping that allows for identity-based recognition such as autism classes. Surface reallocation of respect to these identities; supports group differentiation	<i>Deconstruction of school norms</i> Deep restructuring of school norms for status-based recognition; blurs group differentiation

Model 2: The redistribution-recognition dilemma framed as organisational differentiation in schools.²

The model thus represents an application of Fraser's analytical framework to the organisation of special educational support, illustrating how different approaches to redistribution and recognition may be understood in this context. In doing so, I position special teaching groups as an example of an affirmative remedy, while distinguishing this from more transformative alternatives. The model thereby provides an analytical lens for examining how responses to educational injustice are framed in relation to the structural and normative conditions of schooling.

Conclusion

Drawing on Fraser's framework of redistribution and recognition as an interpretive lens, I argued that recent developments concerning organisational differentiation can be understood as a movement from affirmative recognition toward affirmative redistribution. From this perspective, both historical and contemporary responses to educational disadvantage are best understood as operating within an affirmative logic, albeit in different ways, addressing inequalities without transforming the structural conditions that produce them. While the debate is often framed as a movement between opposing approaches to inclusion and differentiation, I suggest that the contrast may be overstated. From a Fraserian perspective, these developments can instead be seen as variations of the same affirmative logic. Hence, the overall ambition has been to show how current debates on inclusion and segregation can be interpreted through a socialist theory of justice, and thereby to clarify what is at stake when support is

² This model adapts Fraser's distinction between affirmative and transformative strategies of redistribution and recognition to the context of Swedish special education. 'Affirmation' refers to interventions that reallocate resources or revalue social status without altering the structures that produce differentiation. 'Transformation' refers to approaches that seek to restructure institutional arrangements and normative frameworks so that disadvantage no longer arises. The examples in the table illustrate how organisational differentiation in schooling can embody these contrasting logics and should be read as tentative illustrations.

conceptualised as an individual rather than structural matter. Fraser's framework is particularly illuminating in this context because it exposes how educational interventions that appear egalitarian can nevertheless reproduce structural disadvantage when they operate within an affirmative logic. By reframing the discussion in this way, I aim to open space for reconsidering the organisational and normative foundations of educational equality in Sweden.

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For Whom the Bell Tolls: Mathematics Education in Times of Crisis

Constantinos Xenofontos

Introduction

We are living in a time shaped by multiple, overlapping crises: e.g., environmental degradation (El Khoury et al., 2025), global pandemics (García-Holgado et al., 2024), economic instability (Carli et al., 2024), enduring social inequalities (Olonisakin et al., 2024), and the ongoing genocide in Gaza, which has exposed cascading crises in international law, human rights protection, atrocity prevention, and genocide scholarship itself (Verdeja, 2026). These crises share, at least in part, common structural conditions. Critical political-economic analyses have argued that capitalist modes of production, global commodity chains, industrial agriculture, ecological degradation, and public-health vulnerabilities are deeply interconnected, such that ecological, epidemiological, and economic crises cannot be fully understood in isolation from one another (Suwandi & Foster, 2020; Wallace, 2016). The ways these crises often intersect and compound one another affect, disproportionately, marginalised communities (Maestriperi, 2021; Pitzalis & Porcu, 2024). Within this context, the role of mathematics warrants

renewed scrutiny, not only for how it represents the world, but for how it actively shapes it.

Recently, Ole Skovsmose (2021) offered a compelling framework for understanding how mathematics relates to crises. He proposed that mathematics can constitute a crisis, by being embedded in systems that generate harm; picture a crisis, by modelling and representing it; or format a crisis, by shaping how it is understood and acted upon. This typology challenges the widespread view of mathematics as neutral and objective by emphasising its performative and political functions. Although Skovsmose briefly acknowledged the relevance of these categories for mathematics education, his analysis focuses primarily on mathematics as it operates within broader societal structures, for example in epidemiological forecasting, economic systems, and environmental modelling. In contrast, this essay places mathematics education itself at the centre of analysis.

To clarify from the beginning, I do not use *mathematics education* as an undifferentiated umbrella term. Rather, I treat it as an institutional and discursive field comprising, inter alia, four analytically distinct but interrelated focal dimensions: mathematics education research, classroom teaching/learning practice, mathematics teacher education, and policy/curricular governance. These dimensions do not operate in the same way, nor are they implicated in crises in identical manners. However, each provides a site through which mathematics education may participate in constituting, picturing, or formatting crises.

The originality of this essay lies in shifting the analytical focus from mathematics as social technology to mathematics education as an institutional, pedagogical, and discursive field implicated in crisis. Building on work that shows how mathematics models

organise, and legitimise crises, the essay examines how mathematics education participates in these processes through curriculum, pedagogy, assessment, teacher education, research agendas, and policy regimes. It reconstructs Skovsmose's typology for mathematics education by showing how the field may constitute crises through exclusionary structures and pedagogical norms, picture crises through data-rich and modelling-based engagements with urgent social issues, and format crises by shaping what is regarded as a problem, thereby requiring a solution and a legitimate response.

In developing this argument, the essay draws on the field of critical mathematics education, which interrogates the social, political, and ethical dimensions of mathematics teaching and learning (Skovsmose, 1994; Ernest, 2019). Prior research has shown how mathematics can reproduce dominant ideologies, marginalise alternative knowledge systems, and reinforce patterns of social stratification. Work on social justice mathematics (Frankenstein, 1983; Gutstein, 2016), curriculum politics (Gutiérrez, 2018; Valero, 2004), and the ethics of modelling (Barwell, 2013) informs this inquiry. Recent contributions by Appelbaum et al. (2022) have begun to consider how mathematics education might engage in the picturing, constituting, or formatting of crises. Building on their insight, this essay develops a more structured reinterpretation of Skovsmose's (2021) categories for the field of education.

In the sections that follow, I examine each of the three categories (constituting, picturing, and formatting) through a theoretical analysis and illustrative examples. I conclude by exploring the implications of this reframing for curriculum, pedagogy, and educational research in an era increasingly defined by crisis.

Mathematics education as constituting a crisis

If mathematics can be part of what *constitutes* a crisis, embedded within the systems, algorithms, and practices that bring crises into being (Skovsmose, 2021), then we must ask whether mathematics education can also play such a role. To say that mathematics education participates in constituting a crisis is not to treat it as an autonomous agent or sole cause, nor to displace responsibility from the political-economic actors, institutions, and social classes that organise and benefit from unjust conditions. Rather, it is to examine how the structures, practices, and ideologies of mathematics education become implicated in producing, legitimising, or sustaining harmful arrangements. This challenges the common view of education as a benevolent or neutral force, and instead invites scrutiny of the ways schooling – and school mathematics and its associated practices in particular – can mediate wider social relations, sometimes generating, entrenching, or exacerbating crises, especially for marginalised populations. The point, then, is not that mathematics education is either inherently harmful or emancipatory, but that its effects are the consequence of the social relations, institutional arrangements, and political projects within which it is embedded.

Crisis through exclusion and stratification

One of the most visible ways in which mathematics education may participate in constituting a crisis is through its role in legitimising educational gatekeeping and reproducing social inequality. In many national contexts, school mathematics operates as a ‘gatekeeping’ subject: high-stakes examinations in mathematics determine access to academic pathways, university programmes, and employment opportunities (Bennett & Lai, 2025; Douglas & Attewell, 2017). The problem is not only that such gatekeeping disproportionately affects particular groups, but that gatekeeping itself can function as a political mechanism

for managing scarcity. In contexts marked by austerity, economic restructuring, privatisation, or the erosion of public provision, mathematical tests and credentials can be used to allocate limited opportunities while presenting exclusion as the outcome of individual merit or failure. This gatekeeping function is frequently justified as a ‘fair’ and ‘objective’ measure of ability. However, such claims of fairness may obscure the wider social and economic conditions in which pupils are made to compete for increasingly constrained educational and employment opportunities. In this sense, mathematics education can shift attention away from the structural causes of exclusion and toward individual performance: unemployment, blocked mobility, or restricted access come to appear as the consequences of failing mathematics, rather than as effects of political-economic arrangements that produce and normalise competition over limited educational places, secure employment, public goods, and social mobility. Research consistently shows that attainment in mathematics is strongly associated with socio-economic status, linguistic background, ethnicity, and gender, factors that go beyond individual aptitude or effort. As a result, mathematics often functions as a sorting mechanism that reinforces pre-existing hierarchies (Hoadley, 2007; Lubieniski, 2002). For instance, work from European contexts, including the UK (Gates, 2019) and Norway (Khilji & Xenofontos, 2024), has highlighted how, for pupils from under-resourced schools, low socioeconomic backgrounds, ethnic minority communities, or immigrant families, mathematics can become a site of alienation, failure, and exclusion. In this way, educational systems themselves contribute to the wider social crisis of inequality not only by distributing opportunities unequally, but also by legitimising the very terms on which scarcity, competition, and exclusion are organised (Leyva et al., 2021; Pomeroy et al., 2024).

Inequalities are not only evident in outcomes but also embedded in the content and pedagogy of mathematics. Curricula that focus narrowly on abstract procedures and standardised algorithms

can marginalise pupils' cultural knowledge, lived experiences, and alternative ways of reasoning (le Roux & Swanson, 2021). In many classrooms, 'mathematical ability' is defined in terms of speed, accuracy, and compliance, qualities that may align more with institutional schooling culture than with deeper mathematical thinking (Boaler, 2015; Makrakis, 2021). Such a narrow framing can foster disengagement and even identity crises among pupils who do not see themselves reflected in the discipline or the classroom (Foyn et al., 2018; Xenofontos, 2024a). Consequently, patterns of this kind amount to a form of epistemological injustice: the system(at)ic devaluation of certain forms of knowledge, experience, and identity. More importantly, these injustices are not incidental side effects of a flawed system but are often constitutive features of how mathematics is taught and institutionalised (Mijs, 2016; Tan & Dimmock, 2022; Valero, 2010).

Technocracy and the hidden crises of mathematics education

A less visible form of crisis in mathematics education arises from the normative construction of what counts as valid knowledge (Durand-Guerrier, 2008; Rittle-Johnson, 2017). Contemporary curricula, particularly under the influence of STEM priorities and data-driven policy, privilege epistemic values such as rationality, objectivity and control (Barcelona, 2014; Sharma & Hudson, 2022; Slaton, 2015). While precision, efficiency and optimisation are undeniably valuable, presenting these as universally superior modes of thought risks fostering a technocratic worldview that holds the belief that all problems are solvable through calculation, regardless of their human or ethical dimensions. This framing can itself produce a crisis. Sidestepping the moral, cultural and political complexities of social and environmental problems by framing them as optimisation tasks, such as minimising costs, maximising efficiency or allocating resources "rationally", conditions pupils to overlook such considerations

(Ernest, 2018). De Freitas (2008), for example, discusses a modelling task in which pupils are asked to advise a resort committee on how to wash away a mountain on a South Sea island, using fire-fighting ships, “as quickly as possible” (p. 83). She argues that although the task is mathematically open-ended, its framing is ethically narrow: it places the pupil in the role of a businessperson or engineer to serve the resort committee, while environmental and political questions, including the likely damage to marine life, are excluded from the problem’s preferred solution. De Freitas therefore proposes that such a task could be made more critical by requiring pupils to consider competing perspectives, for instance by modelling both the resort committee’s interests and those of an island environmental committee. Her example shows how mathematical modelling tasks can invite pupils to inhabit particular positions of power: in this case, to reason as advisers to a resort committee whose goal is to remove part of an island as efficiently as possible. The ethical problem is therefore not simply that values are hidden beneath a supposedly neutral task, but that the task itself organises pupils’ mathematical activity around a damaging objective while excluding environmental and political consequences from the preferred solution path. Such tendencies exemplify Skovsmose’s (2020) concept of the *banality of mathematical expertise*, in which mathematical reasoning becomes a taken-for-granted basis for decision-making, obscuring ethically fraught assumptions and legitimising dehumanising or environmentally harmful outcomes. The persistence of these tendencies contrasts sharply with what Wallin et al. (2025) term *mathemat-ing* (that is, open-ended, relational, and ethically responsive mathematical encounters in which pupils may engage or even refuse without penalty), a practice that, by its very difference, exposes the narrowness and potential harm of the prevailing model.

Neoliberal institutions and the political economy of crisis in mathematics education

Educational institutions that teach mathematics are not neutral venues for transmitting knowledge; they are embedded in political economies whose logics increasingly reshape their purpose. Neoliberal, austerity-driven and privatising reforms have reoriented mathematics towards the production of “human capital”, subjecting its ethical, cultural and democratic dimensions to the demands of market competition. This reorientation masks the structural dismantling of public education through chronic underfunding, privatisation and policy centralisation by recasting systemic inequities as individual or cultural shortcomings (D’Souza, 2023). In doing so, it legitimises practices and technologies that commodify mathematics, from subscription-based learning platforms to marketised curriculum materials, embedding values of efficiency, competition and individualism into everyday pedagogy (Darragh, 2021; Lee, 2023). Policy regimes such as England’s “Teaching for Mastery” exemplify how neoliberalism couples with neoconservatism to impose narrow curricular frameworks that produce compliant mathematical subjectivities while claiming to raise standards (Pratt & Alderton, 2023). These same dynamics intersect with racialised and classed hierarchies, rendering certain pupils, classrooms and schools expendable, thereby reinforcing stratification as a structural requirement of the system (Sengupta-Irving, 2021). In this way, mathematics education does not respond to social and economic crises, but actually generates them, shaping subjectivities, deepening inequalities and constraining the social imagination of what mathematics can be.

Another constitutive dynamic lies in the structure of educational systems, particularly the dominance of standardisation, accountability regimes and performance metrics. International assessments such as PISA and TIMSS have been influential reference points in mathematics education discourse and comparative studies, shaping conversations about curriculum

content and, in some contexts, informing policy priorities (Andrews, 2012; Rubel et al., 2022). While these frameworks are often promoted as tools to raise standards, similar reforms are frequently mobilised through “crisis” narratives that legitimise the pursuit of uniform benchmarks and heightened accountability (Lewis et al., 2020; Yeh, 2018). In England, for instance, neoliberal and neoconservative influences have combined to produce a high-stakes testing culture that encourages “teaching to the test” and limits opportunities for creativity and deeper conceptual engagement in mathematics (Pratt & Alderton, 2023). This culture is underpinned by national and commercial assessment tools that, as Breadmore and Carroll’s (2021) review of norm-referenced tests illustrates, set achievement against standardised, quantifiable measures. It is further reinforced by the expansion of commercial online mathematics platforms (Darragh, 2021) and integrated digital management systems (Selwyn, 2011) that embed performance tracking and monitoring into everyday schooling. In such high-pressure contexts, mathematics can become a source of stress and disengagement, with classroom activity shifting from exploration towards surveillance and ranking. This emphasis on procedural performance over mathematical reasoning and proof (Andrews, 2012) risks alienating learners, narrowing critical thinking and reducing the subject’s educational and emancipatory potential.

Mathematics education as picturing a crisis

To say that mathematics education can picture a crisis is to suggest that the teaching of mathematics can act as a lens through which pupils observe, describe, and make sense of real-world problems. This aligns with Skovsmose’s (2021) notion of mathematics as *picturing* (or modelling) a crisis, by providing simplified representations of complex realities. When applied to educational contexts, this concept points to pedagogical practices in which teachers draw on real-world data, contexts, and phenomena as entry points for mathematical learning. In such

cases, crises such as climate change, pandemics, income inequality, or social injustice are not treated as peripheral issues but become central components of the curriculum. Through the use of data analysis, statistical reasoning, mathematical functions, and modelling activities, pupils engage with urgent social and environmental issues using mathematical tools.

This pedagogical orientation is reflected in a range of frameworks, including social justice mathematics (Frankenstein, 1983; Gutstein, 2016), realistic mathematics education (Gravemeijer & Doorman, 1999), and critical mathematical literacy (Skovsmose, 1994). The goal is not merely to increase the relevance or engagement of mathematics, but to empower pupils to understand – and potentially intervene in – the world they inhabit. Building upon Freire (1970), Frankenstein (1983), Skovsmose (1994) and others, Gutstein (2018) refers to *reading* and *writing* the world with mathematics: “to use and learn mathematics to study social reality, as a way to deepen learners’ understanding of the roots of injustice and to prepare them to change the world, as they see fit, in both the present and future” (p. 133). In this spirit, mathematics education that pictures crises positions mathematics as a tool for interpreting, questioning, and responding to the conditions of the world.

Examples of crisis-picturing approaches

During the COVID-19 pandemic, educators in schools, universities, and teacher-training programs turned to real-time epidemiological data to help pupils make sense of the crisis as it unfolded. Public datasets such as daily infection counts, reproduction numbers (R values), and vaccination rates became teaching tools for topics like exponential growth, logarithmic scales, data visualization, and statistical inference (da Silva et al., 2021; Delport, 2021; Lugo-Armenta & Pino-Fan, 2021). Many lessons featured authentic graphs from health agencies and news dashboards, using them not just to track trends but also to model possible scenarios and spark conversations about the social

implications of mathematical findings. This approach reflects research showing that mathematics and statistics education can build the critical literacy needed to interpret high-stakes public health information (Adkins, 2023; Sooknanan & Seemungal, 2023). Still, studies reveal that many people struggle to read pandemic graphs, often misinterpreting cumulative curves or underestimating exponential growth, which shows the importance of teaching visualisation literacy explicitly (Delpont, 2021; Sooknanan & Seemungal, 2023). Combining standard graphs with more creative, multimedia visualisations from journalism could further enrich pupils' mathematical understanding and encourage informed civic engagement during crises (Lim et al., 2023).

The climate crisis has prompted a similar approach. Mathematics educators often bring real-world environmental data into the classroom, encouraging pupils to investigate the causes, consequences, and possible solutions to global warming. Public datasets such as long-term temperature anomalies, atmospheric CO₂ levels, and fossil fuel emissions provide the raw material for lessons on measures of central tendency and variability, modelling, non-linear systems, and statistical inference (Barwell, 2013; Coles et al., 2013). Authentic graphs from the Intergovernmental Panel on Climate Change (IPCC) and national meteorological services are used to track long-term patterns, compare regions, and explore uncertainties in climate modelling (Steffensen et al., 2021; Tasquier et al., 2016). Such teaching illustrates the “formatting power” of mathematics, the way it shapes how we see climate change by structuring the evidence and framing particular narratives (Barwell, 2013). Yet this formatting power also concerns attribution. Climate data do not simply show that warming is occurring; they can also be used to ask which industries, states and institutions are disproportionately responsible, and which actors benefit from particular framings of the crisis. The Carbon Majors research, for instance, traces a large share of historical fossil-fuel and cement emissions to a relatively small number of corporate and state producers

(InfluenceMap, 2024). Research on military emissions similarly identifies the US Department of Defense as an exceptionally large institutional consumer of petroleum, making militarism and military logistics relevant to climate accounting (Crawford, 2019). Arctic warming also raises questions about benefit and extraction, as melting ice has been linked to new shipping routes, intensified resource frontiers and environmental conflicts (Hanaček et al., 2022). A critical mathematics education approach would therefore ask pupils not only to model atmospheric change, but also to compare producer and consumption-based, national, corporate and military emissions accounts, and to consider how each framing distributes responsibility differently. Research also stresses the importance of critical engagement, helping pupils question how modelling assumptions affect predictions or using estimation activities to challenge misconceptions with surprising numerical evidence (Thacker, 2023). As with pandemic data, teaching climate change requires explicit attention to visualisation and modelling skills, ideally within interdisciplinary work that connects mathematics to science, policy, and civic action (Li, 2025; Oikonomou, 2025). In this way, mathematics can equip learners not just to interpret climate data, but also to assess proposed solutions, identify patterns of responsibility and benefit, and take part in meaningful debate on one of the defining issues of our era.

Mathematics has also been used to examine financial and economic crises, enabling pupils to investigate inequality, debt, poverty, and potential remedies. Public indicators such as unemployment rates, inflation, housing affordability indexes, and income distribution statistics provide entry points for learning about percentages, ratios, compound interest, budgeting, and economic modelling (Cavalcante & Savard, 2022; Jayaraman et al., 2018; Ozkale & Aprea, 2023). Lessons might draw on real-world cases from the 2008 mortgage/global financial crisis to pandemic-era income loss, blending technical skills with critical financial literacy so that pupils understand not just the numbers, but also the systems behind them (Cavalcante

& Savard, 2022). This approach mirrors research calling for the integration of mathematics, financial literacy, and social justice, giving pupils the tools to question how economic structures shape access to resources and opportunities (Gutstein, 2016; Tanase & Lucey, 2015). Activities often involve horizontal mathematisation, which means moving between real-world contexts and abstract models to analyse and validate representations of economic realities (Botha & van Putten, 2018). For example, pupils might break down predatory lending practices through amortisation tables, model the long-term effects of wage gaps, or compare debt burdens across income levels. Such tasks combine classical mathematics with critical readings of society. Studies also point to the value of grounding this work in culturally relevant contexts, especially for pupils from communities disproportionately affected by economic marginalisation (Gutstein, 2016; Esmonde, 2014). As with teaching other crises, lessons on economic instability work best when they combine explicit training in reading graphs, tables, and models with interdisciplinary perspectives that connect mathematics to economics, politics, and civic engagement, helping learners navigate their own financial decisions while contributing to broader efforts for economic justice.

Mathematics education as formatting a crisis

If constituting a crisis means helping to create or sustain it, and picturing a crisis means representing it, then formatting a crisis is about how mathematics – and mathematics education – shape how crises are understood, valued, and addressed. As Skovsmose (2021) notes, mathematics has performative power: it does not simply reflect reality, but actively structures the possibilities for action. In education, formatting means that school mathematics is never neutral (Gutiérrez, 2017). The choice of problems, the selection of data, and the solutions considered acceptable all influence how teachers and learners perceive crises and their roles within them. To realise its emancipatory potential, crisis-

formatting mathematics classrooms should encourage critical reflection by asking questions such as: Where do these data come from? What is omitted? Who benefits from this framing? What alternatives exist? (Esmonde, 2014; Lim et al., 2023; Thacker, 2023). Such inquiry turns the classroom from a place of passive learning into one of active critique, enabling pupils to represent, analyse, and act on crises. Formatting a crisis is never just descriptive. It defines what is considered relevant, valuable and therefore solvable. Every mathematical representation carries this latent formatting power. Making this visible allows teachers and learners to see how mathematics influences not only how a crisis is measured, but also how possible solutions are imagined (Skovsmose, 2021).

From ethical formation to the politics of definition

Beyond its role as a matter of technical framing, formatting is also a process of shaping dispositions toward the world. In mathematics education, repeated encounters with particular types of problems, modes of reasoning, and norms for acceptable solutions gradually foster implicit values that begin to feel natural through everyday practice (Atweh, 2013; Boylan, 2016). These include privileging quantifiable outcomes over qualitative considerations, framing optimisation as inherently desirable, elevating abstraction above contextual understanding, and treating trade-offs between efficiency and equity as normal features of decision-making. When such orientations are taught without explicit ethical reflection, they risk becoming invisible frameworks that shape how pupils perceive legitimate action and judgment (Radford, 2023). For example, as discussed earlier, school ‘real-life’ applications in mathematical modelling often require pupils to maximise efficiency or profit in contexts such as infrastructure projects or resource allocation, without addressing whose interests are prioritised, what harms are excluded from consideration, or how environmental and social costs should be weighed (de Freitas, 2008). While presented as neutral skill-

building, such activities can normalise a technocratic rationality that treats human, ecological, and cultural factors as interchangeable variables in an optimisation model (de Freitas, 2008; Radford, 2023). In crisis contexts, mathematics education does not operate in an ethical vacuum. Rather, it can legitimise trade-offs that privilege dominant interests while marginalising vulnerable communities. For example, a unit on probability, statistics, or linear modelling might ask pupils to interpret crime data, estimate risk, or allocate police resources to areas with higher predicted crime rates. Treated only as a technical exercise, the task can encourage pupils to see prediction, optimisation, and efficient allocation as neutral mathematical goals. Yet research on predictive policing shows that such models do not simply represent crime patterns. They help materialise certain people and places as “risky” by drawing on historically unequal data, prioritising particular indicators, and directing police attention accordingly. The resulting interventions can then generate further data that appear to confirm the original classification. In this way, the model does not stand outside the reality it measures; it participates in producing the very field of risk it claims to describe (Hälterlein, 2021; Završnik, 2021). The problem, then, is not probability theory itself, but the absence of ethical reflection on what is counted, whose experiences are excluded, and how mathematical authority can legitimise unequal interventions. Teaching *dominant* mathematics (i.e., the mainstream, institutionally sanctioned form of mathematics rooted in Western epistemologies and positioned as universally applicable) without a reciprocal ethical engagement conditions learners to view certain knowledge systems as inherently superior (Abtahi, 2022). Over time, this can erode the cultural and epistemological resources of non-Western communities, normalising forms of harm as unavoidable or acceptable (Luecke et al., 2022).

Formatting also operates upstream, in determining which situations even qualify as *crises* within the mathematical imagination. Every decision about curriculum content, including the choice of datasets, modelling scenarios and case studies,

signals to pupils which problems are worthy of quantification and which fall outside the purview of mathematics. If climate modelling, pandemic projections or GDP downturns are frequent topics, but housing insecurity, racialised policing or settler colonial land dispossession are absent, the implicit lesson is clear: selected realities are legitimate objects of mathematical scrutiny, while others are rendered “non-mathematical” or peripheral. This is not a matter of incidental omission; it is a process of boundary making that arranges the geography of concern. Such boundaries often reflect entrenched patterns of world power sustained by coloniality and globalised imaginaries of citizenship, where western epistemologies and contexts are placed at the centre while those beyond are rendered invisible (Chronaki & Yolcu, 2021; Fernandes et al., 2022). Moreover, the distribution of attention frequently mirrors geopolitical asymmetries: crises in the Global North may be examined with fine-grained data, while those in the Global South appear only as aggregated statistics or abstract exemplars. This structural inequality aligns with the observation that equity research in mathematics education remains dominated by Global North perspectives, limiting the visibility of Southern contexts and priorities (Vithal et al., 2024). Eurocentric framings of mathematics education can further marginalise local knowledge systems and diminish the legitimacy of crises rooted in non-Western experiences (Olawale, 2025). Such patterns reinforce global hierarchies of urgency and visibility, subtly teaching pupils which lives and contexts merit analytic detail. Through these curricular choices, mathematics education helps construct what Skovsmose (2021) calls the “politics of crises”, legitimising certain framings while marginalising others, not by argument but by habituation. The result is a patterned attentiveness: a readiness to model and act on some crises while remaining inert or indifferent to others. In this way, the mathematics classroom becomes a site where the authority to define and prioritise knowledge is both exercised and contested (Appelbaum, 2022), making the politics of inclusion and exclusion a constitutive feature of what constitutes a crisis.

Finally, formatting shapes the repertoire of actions that pupils learn to associate with a crisis. Analyses of mathematics classroom discourse in different contexts show that teachers' language frequently encodes procedural obligations and directive authority (e.g., "you have to...", "we need to..."), emphasising actions such as performing calculations or following set procedures. Opportunities for pupils to engage in collaborative sense-making, open deliberation, or critical questioning are comparatively rare in such discourse (Herbel-Eisenmann & Wagner, 2010; Ng et al., 2021; Schleppegrell, 2007; Wagner & Herbel-Eisenmann, 2008). When crises are framed primarily as analytical challenges, pupils may become adept at describing them yet lack the tools or the perceived mandate to participate in their transformation. This is not reducible to individual teacher choices; it is often a structural feature of how mathematics is positioned in schooling. Classrooms are rarely organised as sites for confronting power or imagining alternatives; instead, they tend to reward compliance, procedural fluency, and the correct reproduction of established methods (Gutiérrez, 2013; Xenofontos, 2024b). In such environments, crisis-oriented mathematics can end up reinforcing passivity: pupils learn to produce technically correct representations without engaging with the social processes that could change those realities. Reimagining this terrain requires expanding the conception of mathematical agency. Pupils should encounter opportunities to question dominant models, experiment with alternative framings, and consider the downstream implications of their analyses. They should practise translating quantitative insights into forms of civic action, whether through community engagement, policy critique, or collaborative problem-solving. By integrating these capacities, mathematics education could shift from merely formatting how crises are perceived to enabling collective capacities for how to contest them.

Implications and future directions

Reinterpreting Skovsmose's typology of picturing, constituting and formatting in relation to mathematics education indicates that the subject is not merely a technical discipline but also a formative social practice. This reframing shifts the conversation from asking how mathematics education can respond to crises to asking how it is already implicated in them. The implications are significant for curriculum design, classroom pedagogy and educational research.

First, acknowledging that mathematics education can *constitute* crises calls for a systemic lens. Practices such as high-stakes testing, narrow curricular hierarchies and deficit-oriented pedagogy may perpetuate exclusion and social stratification (Douglas & Attewell, 2017; Hoadley, 2007; Lubienski, 2002). Addressing this is not a matter of raising standards within the existing framework. It involves rethinking the very organisation of school mathematics: who defines its purposes, whose knowledge is legitimised, and how structural inequities are reinforced through assessment and policy (Valero, 2010).

Second, recognising mathematics education as *picturing* crises affirms the value of embedding socially urgent contexts such as climate modelling, public health data or income inequality within mathematical learning (Gutstein, 2018; Barwell, 2013). Doing so can increase relevance and engagement, but it also requires careful critical framing. Teachers must guide pupils to interrogate modelling assumptions, recognise what is omitted, and explore the ethical and political stakes of quantitative representations (Sooknanan & Seemungal, 2023). Without this reflexive component, crisis-themed lessons risk reproducing technocratic certainty rather than fostering critical literacy.

Third, understanding mathematics education as *formatting* crises invites a broader ethical and political remit for the subject. Mathematics classrooms are not neutral spaces of skill

acquisition. They cultivate dispositions, legitimise particular forms of reasoning and define what counts as a problem worth solving (Radford, 2023). For example, work on climate change in mathematics classrooms might involve interpreting temperature graphs, comparing emissions data, or modelling possible future scenarios. However, such tasks can also invite pupils to examine uncertainty, conflicting interests, unequal vulnerability, and the limits of mathematical prediction in deciding how societies should respond to climate crisis. Abtahi et al. (2017) argue that because mathematics is central to communicating, predicting and working with climate change by including it in mathematics classrooms can be understood as an ethical responsibility. Curriculum decisions are also decisions about whose lives, contexts and futures matter. Embedding ethical inquiry, multiple epistemologies and civic engagement into mathematics education can disrupt inherited patterns of exclusion (Abtahi, 2022) and challenge Eurocentric or colonial framings of crises (Fernandes et al., 2022).

The framework opens several avenues for inquiry. Empirical classroom studies could examine how crisis-oriented mathematics lessons influence pupils' perceptions, agency, and ethical reasoning. Curriculum analyses might investigate which crises are represented, which are ignored, and how these patterns reflect geopolitical or epistemological biases (Fernandes et al., 2022). Teacher education research could explore how to prepare educators for the intellectual, ethical, and political challenges of teaching crisis-related content. Comparative and cross-cultural studies could examine how mathematics curricula across different systems foreground, marginalise, or omit particular crises, thereby revealing how curricular framings are shaped by geopolitical location, colonial histories, and epistemic hierarchies, and opening possibilities for decolonising and diversifying mathematics education (Shahjahan et al., 2022). The pressing task is to develop a mathematics education that recognises its own entanglement with crisis while equipping learners to challenge and transform the systems that sustain it. This means moving beyond access and equity in the narrow sense

towards a vision of mathematics education as a site of critical engagement, ethical reflection, and collective action (Gutstein, 2018; Radford, 2023). A crisis-conscious pedagogy would enable pupils to read the world mathematically and, crucially, to reimagine and reshape it, bringing mathematics into the service of more just and sustainable futures.

Concluding thoughts

This essay has extended Skovsmose's (2021) typology of mathematics as constituting, picturing, and formatting crises to the domain of mathematics education, demonstrating that these roles are not peripheral but embedded in its everyday practices. Mathematics education can illuminate pressing social, environmental, and economic problems, but it can also participate in their reproduction, consequently restricting how they are imagined and contested. These functions are realised through the integration of real-world contexts, the structuring effects of institutional arrangements, and the epistemic framing of what qualifies as a legitimate problem and solution. Recognising this entanglement foregrounds the need for pedagogical and policy approaches that are reflexive, inclusive, and oriented towards justice. Importantly, mathematics education is already making steps in this direction. Recent international activity, including the 27th study of the International Commission on Mathematical Instruction (ICMI) on *Mathematics Education and the Socio-Ecological*, indicates that the field is increasingly attending to the entanglement of mathematics education with contemporary social, political, ecological, and planetary crises (Le Roux et al., 2025). Similarly, the 74th conference of the International Commission for the Study and Improvement of Mathematics Teaching (CIEAEM), *Mathematics and practices: Actions for futures*, signals a growing concern with how mathematical practices may contribute to imagining and acting toward different futures (Björklund Boistrup & Di Paola, 2024). Further evidence of this shift can be

seen in the forthcoming 15th Congress of the European Society for Research in Mathematics Education (CERME15), to be held in 2027, which will include a new Topic Working Group titled “Exploring Socio-Ecological Dimensions of Mathematics Education in Times of Change”. These developments do not contribute in resolving the tensions examined in this essay, but they show that the field is beginning to organise sustained scholarly conversations around them.

In a world facing overlapping ecological, political and economic breakdowns, mathematics education cannot retreat into a stance of neutrality. It has to confront its own part in these crises, and its potential to help people respond to them. This means creating classrooms that are reflexive, participatory and justice-focused (Gutstein, 2018), where learners are not only taught to solve problems but to ask who defines them, who benefits from their solutions, and whose voices are missing (Abtahi, 2022). If we can make mathematics classrooms places where pupils read the world with a critical eye, question what they are given, and imagine other futures, then mathematics education can stop being a silent witness to crises and become an active force for change. That shift will not happen without the intention to make it. As Skovsmose (2021) reminds us, it is the defining challenge for mathematics education in our time, and meeting it will take not just new ideas, but determination, care and a willingness to act.

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Epistemic Courage and Literary Instruction: An Exploratory Conceptual Discussion Addressing Contemporary Challenges in Swedish High Schools

Karl Ågerup

Introducing the problem and framing the context of transformative literary education

The Swedish National Agency for Education's latest status report highlights that students are increasingly exposed to political pressure, extremism, and fake news, emphasizing the urgent need for schools to foster democratic abilities and resilience (Skolverket, 2023). After several decades of teaching high school students and supervising student teachers during their practicum, I share Skolverket's concern. In my experience, Swedish high school students have much to contribute in class, and many are both informed and engaged. Yet the classroom discussion climate sometimes discourages open dialogue and personal input, particularly when such contributions challenge outspoken students who are accustomed to dominating the conversation.

In response, it is essential that students develop critical thinking, personal autonomy, and dialogical agency. Although this argument primarily draws on the Swedish educational context, the challenges posed by misinformation and the broader need for independent thinking and open dialogue are by no means uniquely Swedish. Even today, a surprising number of U.S. citizens, for example, continue to endorse scientifically discredited claims—

such as the belief that the Earth is flat, that the moon landings were staged, or that COVID-19 vaccines contain microchips for surveillance purposes (Hamilton, 2022).

Strengthening epistemic and dialogical courage in schools also aligns with the concept of pedagogical rights, which asserts that every student, regardless of social, economic, or cultural background, has the right to both enhancement and participation (Bernstein, 2000). Students should not be left to navigate the current political turbulence and insecurity on their own; rather, the school system has the responsibility to empower them and support the expression of their subjectivity. This is especially crucial in today's increasingly polarized world, where echo chambers and extremism present growing challenges.

Although evidence suggests that Swedish students possess a strong theoretical understanding of democracy, this knowledge does not consistently translate into democratic practice. Paradoxically, the emphasis on democratic values within schools has contributed to the emergence of “classroom opinions”—views that align with the perceived norms of the school environment (Molloy, 2017). Instead of taking the risk to express individual perspectives, many students opt for silence or mirror what they assume aligns with the teacher's expectations. The teacher's instructional design and attitude are crucial in transforming the classroom into a dialogic space where students can express themselves more freely.

At the same time, I have seen overconfident or bullying student clusters emerge: students who spread misinformation from internet forum echo chambers and/or aggressively suppress other students' conflicting opinions. While everyone has the right to express their views, classroom challenges arise when isolated perspectives reinforce misinformation or discriminatory attitudes without allowing counterarguments to be voiced. This issue is amplified by an increasingly widespread self-centered communicative style—sometimes referred to as the 'Generation Me' phenomenon—where active listening is replaced by self-presentation (Twenge, 2013).

There is evidence suggesting that subversive literature education can foster more open, attentive, and dialogic classroom environments (Bradling, 2026; Hoggan & Cranton, 2014; Ågerup, 2023). Fictional narratives can activate cultural translation processes that reduce social distance, and literature discussions provide ideal opportunities to practice these abilities since literary worlds can function as safe spaces for expressing otherwise unapproachable positions (Hakemulder, 2000; Keen, 2007; Steiner, 2014; Svensson, 2010).

As Gert Biesta has emphasized, rather than lecturing democratic values, it is preferable for teachers to create the conditions in which students can develop their own subjectivity and social agency (Biesta, 2006). In such a process, it can be advantageous to use narratives that do not themselves express good values, but instead compel discussion in which democratic values are enacted (Biesta, 2013). The risk that such discussions may produce opinions that conflict with the school's core values is inherent in any democracy. Ideally, the classroom becomes a forum for dialogue that can strengthen students' confidence in themselves, in one another, and in discussion as a method. In this line of thought, consensus need not be actively pursued by the teacher; even a conversation that ends in disagreement provides valuable practice (Trygvasson, 2019).

Transformative learning is a theory that explains how individuals can adopt more reflective perspectives and express themselves more freely. This process begins when students encounter a "disorienting dilemma"—an experience that challenges their existing beliefs and assumptions. Through critical reflection, they examine these beliefs and explore new ways of thinking and acting. This process includes engaging in dialogue with others, which helps test and validate new perspectives, leading to more autonomous and empowered ways of interacting with the world (Cranton, 2012; Cranton, 2016; Jarvis, 2012; Mezirow, 1991).

Transformative learning is inherently student-centered, relying on the learners' openness to revision and self-development. Transformation should not be imposed on students; instead, it

should be presented as an opportunity for growth. A pragmatic pedagogy should guide these learning activities, recognizing emotions as valuable sources of engagement.

To foster autonomy rather than politically correct classroom opinions, the teacher's role should be understood as one of active and equal participation within what Lipman (2003) describes as a "community of inquiry," where both students and teachers collaboratively formulate questions and seek answers without imposing consensus. This approach implies that lessons cannot be designed or managed to guarantee predetermined outcomes.

Although the process is not controlled, teachers can act as facilitators or coaches, helping students progress at their own pace and in their own direction (Lipman, 2003). The key question is identifying texts and practices that can make the studied issue accessible to each student—not necessarily from the perspective they are accustomed to, but from a more autonomous and multifaceted angle developed through discussions with a more diverse group than their family and friends. Also, it is important to foster a sense among students that the classroom is a safe space where diverse opinions are allowed and welcomed. Indeed, remaining silent in the face of certain topics is a democratic right. My point is not that every student should speak more, but that those who are hesitant to form and voice new ideas should be supported in stepping forward and developing self-confidence.

In this essay, I explore the relevance of Jonathan Ichikawa's notion of epistemic courage in relation to a pedagogy aimed at cultivating students who are more self-empowered, capable of critical thinking, and unafraid to speak their minds (Ichikawa, 2024). Grounded in my own experiences of teaching and supervising teachers, this essay discusses possible educational choices aimed at encouraging open dialogue while at the same time counteracting epistemic recklessness and harmful prejudice in Swedish high schools.

Epistemic anxiety, courage, and recklessness

In this section, I will discuss the concept of epistemic courage, a concept that may support scholars and teachers who seek to develop transformative instructional designs. Before addressing its pedagogical potential, however, it is essential to define epistemic courage and position it in relation to the adjacent constructs of epistemic anxiety and epistemic recklessness.

Epistemic anxiety is a sense of doubt, prompting an individual to withhold judgment and leave questions unresolved in face of social risks (Newton, 2022). Powerful social stereotypes and scripts can make suspension seem reasonable, such as the common refrain, “Let’s not jump to conclusions.” By not taking a stance or critically evaluating situations, people may unknowingly allow falsehoods, harmful beliefs, and prejudice to persist. In essence, not questioning misleading information or refraining from challenging harmful ideas can be just as detrimental as endorsing them. It emphasizes the idea that silence in the face of injustice or deception is not neutral; it can be a passive form of support for those who promote falsehoods or biases (Arendt, 1963; Ichikawa, 2024).

Epistemic courage, on the other hand, is the capacity to acquire knowledge and to take a stand in the face of uncertainty. We exhibit epistemic courage by participating in public discourse despite the risk of being wrong. In his book *Epistemic Courage*, Jonathan Ichikawa demonstrates that silence is not always without cost, even if it may appear to be. He argues that we tend to underestimate the dangers of passivity compared to the more visible risks of acting prematurely. Failing to take a position can be perilous. Ichikawa wrote the book during the COVID-19 pandemic, drawing some of the most illustrative examples from that period. Before exploring the pedagogical implications of epistemic courage, it is instructive to consider one of Ichikawa’s examples from the field of medicine, as it clearly delineates the distinction between epistemic courage and epistemic recklessness.

When COVID-19 first emerged, American physician Pierre Kory was working as an emergency doctor at the University of Wisconsin Hospital and Clinics. From his vantage point, Kory quickly recognized the severity of the virus's lethality. He had previously treated similar symptoms using corticosteroids, but was prevented from applying the same method to COVID-19 patients. His belief in the efficacy of steroid treatment was dismissed as wishful thinking. Kory resigned from his position and moved to New York, where he was able to provide the care he deemed appropriate. Owing to Kory's epistemic courage—his willingness to trust his judgment and take personal risks—many lives were likely saved under his care. Subsequent clinical trials would vindicate him: corticosteroids were later approved for treating COVID-19 symptoms after demonstrating efficacy.

However, Ichikawa goes on to say that Kory later advocated for the use of ivermectin—a drug typically used to treat parasitic infections—as a treatment for COVID-19. Inspired by some early signs of patient recovery, Kory authored articles and appeared on *The Joe Rogan Experience*, promoting ivermectin. Desperate patients obtained veterinary versions of the drug and, according to Ichikawa, consumed doses intended for horses and cattle. As more studies were completed, it became evident that Kory was mistaken about ivermectin's effects, and he is now remembered as one of the figures who contributed to the spread of COVID-19 misinformation, Ichikawa notes. The case of Pierre Kory thus exemplifies both socially beneficial epistemic courage and its excessive counterpart: epistemic recklessness (Ichikawa, 2024).

As the example illustrates, there are risks associated with hastily taking a stance on a difficult issue with potentially serious consequences. Beyond medical malpractice, polarization and extremism could also increase when we hastily form beliefs instead of waiting for verified knowledge. However, there are two objections to overly emphasizing this risk. First, it is precisely verified knowledge that extremists tend to use, albeit repackaged, to build their positions. Second, as Ichikawa also argues in his book, becoming a skeptic is not much better, as this also carries significant risks. The way forward is to gradually develop the

ability to listen and adapt to each situation's demands for engagement.

Drawing from Aristotle's *Nicomachean Ethics*, virtues such as epistemic courage can be seen as balance points between two vices. Generosity is the virtuous middle ground between greed and wastefulness, intimacy lies at the boundary between brazenness and avoidance, humility is found in the tension between shamelessness and shyness, and so on. Similarly, epistemic courage can be placed between epistemic cowardice and recklessness (Ichikawa, 2024). Epistemic recklessness is described in more detail in Quassim Cassam's book *Vices of the Mind*, which reminds us of the United States' invasion of Iraq, a situation in which the leaders underestimated local resistance. Contrary to expert predictions, Donald Rumsfeld and George W. Bush believed they could walk in as saviors and be greeted with public jubilation, Cassam points out. This is not epistemic courage; rather, the American leaders displayed epistemic recklessness (Cassam, 2019).

Following this exploration of epistemic courage and its democratic value, I will now discuss how this concept can be applied within educational practice. If we can inspire young people to take the risk of being partly wrong, to speak out, and to listen to the reactions of others, we may reduce the spread of prejudice, while fostering more free-thinking citizens.

The potential of positive epistemology in educative settings

In educational contexts, particular interest lies in concepts and methods that support the initiation and sustenance of active knowledge-seeking, as well as models that highlight the significance of stances and beliefs in collective learning processes. The concept of epistemic courage appears especially valuable in pedagogical discussions concerning conflict, emancipation, and political emotions within the classroom, among other relevant themes.

Research in psychology supports the idea that positive affirmation can enhance self-esteem and build resilience. The brain is adaptable and capable of being reoriented toward positive values rather than fear-based avoidance (Koosis, 2024). In educational settings, studies have shown that affirmation-based exercises can help minority students feel more confident and perform better academically—partially in response to the heightened stress levels often reported among these groups (Parker Goyer et al., 2017). It seems reasonable, then, to suggest that an overemphasis on caution and skepticism can inadvertently inhibit students’ development of self-awareness and their belief in their ability to effect change.

To clarify the distinction between negative and positive epistemology, Ichikawa presents six norms, each articulated in both a negative and a positive form (see Table 1). The first column outlines the negative epistemic norms, which discourage or prohibit belief formation, often emphasizing caution and avoidance of error. In contrast, the second column presents the positive epistemic norms, which encourage or promote belief, highlighting the value of embracing justified beliefs even in the face of uncertainty.

Negative norms	Positive norms
Don't be too hasty	Don't be too skeptical
Be careful in forming beliefs	Be careful in withholding beliefs
Make sure you have enough evidence before believing	Make sure you believe that your evidence dictates
Don't believe the products of unreliable sources	Believe the products of reliable sources
Make sure your beliefs are justified	Make sure you believe what is established
Don't believe something unless it is knowledge	Acquire the available knowledge

Table 1: Negative and positive epistemic norms (Ichikawa, 2024, p. 42)

It is noteworthy that most positive epistemic norms are constructed using active verbs without negation—for example, believe and acquire knowledge. This grammatical structure underscores a proactive orientation, which is central to the concept of epistemic courage. Of particular importance is the encouragement to actively seek knowledge, rather than merely reject propositions presented by others.

By this point in the essay, it should be evident that epistemic courage does not entail the uncritical acceptance of all statements and beliefs. Rather, it involves confronting facts and making an active, deliberate choice to endorse them—while accepting the potential consequences of doing so. A key pedagogical implication is the proposal to recalibrate the prevailing bias toward passive, silent reflection and to gently redirect it toward action—action undertaken only when a belief appears epistemically warranted, and only in the form of provisional beliefs to be tested and explored within the classroom. This latter point is particularly significant, as it introduces an implicit form of quality control: when students articulate their current beliefs among peers—much like an explorative line of thought is presented to the research community—they not only communicate their present stance, but also demonstrate a readiness to revise their positions in response to alternative perspectives. In this way, the act of speaking functions simultaneously as an expression of belief and an invitation to dialogue.

This view aligns with Gregory Currie’s conceptualization of knowledge as something that exists in degrees; we gradually form better beliefs about the world. Of course, certain facts appear to remain constant in modern life—heliocentrism, Bob Beamon’s long jump gold at the 1968 Olympics, or Sirhan Sirhan’s assassination of Robert F. Kennedy. Yet even these are not immune to denial or conspiracy, which continue to circulate in various forms. Moreover, as Currie notes, even our understanding of well-established facts—such as the structure of the solar system—has evolved over time. We now hold better beliefs about planetary orbits than earlier generations did (Currie, 2020).

All of this underscores the importance of collective epistemic processes—such as classroom dialogue—in refining and improving knowledge. Voicing our beliefs, even when tentative, allows them to be shaped, challenged, and ultimately strengthened through interaction with others.

Dialogical courage as an extension of epistemic courage

I see dialogical courage as an essential extension of epistemic courage, emphasizing the importance of engaging with others in the testing and refinement of one's beliefs.

An illustrative example from educational practice can be drawn from the supervision of teacher candidates during their school placements. Some years ago, I visited a high school where a student teacher was practicing. The U.S. presidential election served as the topic of classroom discussion. During the lesson, a group of male students expressed the firm belief that a woman could not become president of the United States due to an inability to engage in warfare. “Women can’t fight wars,” one student stated, prompting agreement among his peers. Notably, no dissenting views were expressed, although some students shifted in their seats, vaguely signaling opposition or hesitation. There may have been epistemic courage in the room, but it was not voiced or transformed into *dialogical* courage that could have launched a productive conflict.

The student teacher thus encountered a challenge during this session, while my role was limited to observation. Later, we discussed the situation, and the regular teacher made clear that the issue of sexism would be addressed. Deliberating possible actions, we considered applying a negative epistemological approach by encouraging students to critically examine the sources underlying their judgment that women are incapable of conducting warfare. Such a response can be considered a standard pedagogical instinct. A bias toward skepticism—prominent both in academic epistemology and in popular conceptions of rationality—is evident among many Swedish educators, myself included.

However, it was evident that prior instruction had not had a substantial impact on this class, creating an opportunity to explore alternative strategies. It may be beneficial, in such cases, to incorporate more positive epistemological approaches when addressing difficult and ideologically charged questions. Reflecting on the one-directional communication in this class, and recalling many other classrooms where dominant students took up most of the space without inviting dialogue, I felt it was necessary to consider alternative ways of addressing sexism and other forms of prejudice beyond simply correcting it. What follows is a suggested way forward and an invitation to further explore how such challenges might be met.

Encouraging Continued Scholarly Discussion and Empirical Research

From a theoretical perspective, it has been argued that ethically and politically challenging literary texts can animate discussions in Swedish schools on issues such as gender, class, and cultural topics (Alkestrand, 2016; Almqvist, 2024; Johansson, 2017; Persson, 2012). While the methodology of book discussions on challenging themes has been examined at length (e.g., Lyngfelt & Nissen, 2018; Franck & Lilja, 2023; Tengberg, Johansson & Sønneland, 2023), further empirical research is needed to learn more about which combinations of literary texts and educative methods most effectively encourage students to take an active role in their development as autonomous subjects.

The observation of sexist comments about female politicians will serve as a reference point for tentatively suggesting a potential pedagogical approach that incorporates principles of positive epistemology and literature education. It is important to emphasize that the biased comments themselves are not the main problem—if they were, a simple correction of the speakers might be sufficient. Rather, my focus is on pedagogical strategies that empower the group, create space for the expression of alternative perspectives, and allow erroneous assumptions to be gradually undermined through dialogue and reflection. Like moral courage,

epistemic courage can be cultivated through practice. The Chinese philosopher Mencius emphasized that “repeated intentional performance of explicitly ethical, often political, actions builds up and fortifies one’s courage” (Ivanhoe, 2006, p. 225). In other words, to increase the capacity to form and voice new ideas, it is necessary to repeatedly try articulating them out loud. Over time, epistemic and dialogical courage may come more naturally and become an embodied part of the individual’s character.

The likelihood that degrees of courage vary within each classroom presents a challenge for group activities, as students’ developmental needs can differ considerably. However, the use of fictional narratives offers a promising solution. Literature allows for multiple levels of epistemic courage to be activated through engagement with the same text, as each reading experience is uniquely shaped by the reader’s prior experiences, emotional dispositions, and personality traits.

Using positive epistemology and disconcerting ideas as a vantage point, the following design sketch is proposed as an exploratory model. The imagined group is based on the class referenced earlier, and educators are encouraged to adapt the proposed sketch according to the specific needs and characteristics of their own groups.

Given the perceived ideological homogeneity of the group on this topic, the first step must involve challenging the status quo. As an initial activity, reading Valerie Solanas’s *SCUM Manifesto* is suggested to introduce the ideas that men are obsolete and women aggressive. *SCUM Manifesto* is a self-published radical feminist text released in 1967. It presents an extreme critique of men and argues that women must reshape society. The manifesto calls for the creation of *SCUM*, a “Society for Cutting Up Men,” aimed at dismantling existing social structures and exterminating all males in the best interest of humanity.

Rather than assigning complex argumentative texts, Solanas’s brief manifesto may serve as a deliberately disorienting text. The aim is to disrupt prevailing assumptions, stimulate curiosity and

reflection, thus providing a vantage point from which new ideas might emerge.

A possible next step could be to engage with Mikael Niemi's (2003) novel *Popular Music from Vittula*. Set in the north of Sweden, many of the events in the book reflect macho attitudes and heavy drinking, which are also portrayed as underlying causes of many personal tragedies. At the same time, Niemi draws on stereotypical images of the region found elsewhere in Sweden. An important part of the story is how popular music and rock 'n' roll enter the boys' lives and come to play a major role.

As highlighted by Louise Almqvist (2024), this novel has the potential to generate a disorienting dilemma—particularly by drawing attention to a violent sexual encounter with the woman cast as the perpetrator. In this narrative, both male and female characters are portrayed as ferocious, challenging the previously expressed classroom assumption that women are inherently incapable of warfare. Furthermore, the story's realistic yet subtly absurd tone may encourage students to connect fictional events to personal experiences, facilitating a fluid interchange between fiction and reality.

As a third component, depending on students' level of experience with literature, the class could engage with a story that features a compelling life journey with an active heroine courageously expressing her subjectivity among both male and female peers. The story should avoid being overly schematic, but it should inspire students to think positively about human agency, regardless of sex. In the class described above, something along the lines of, to name two extremely well-known works, *The Hunger Games* by Suzanne Collins (2008) or Khaled Hosseini's *A Thousand Splendid Suns* would possibly be effective (Hosseini, 2007). This material would serve as a foundation for critical discussions about differing social conditions between the sexes. Such encounters can lead to an emergent understanding of systemic injustice, even among students who did not initially perceive themselves as holding biased views. In any case, engaging with such literature can spark classroom

discussions where learners are activated as subjects and given opportunities to develop both epistemic and dialogical courage.

A key aspect of this approach is that the literary narrative is liberated from the immediate demands of fact-checking that characterize documentary storytelling. While factual inaccuracies—though not formally incorrect within the framework of fiction—may affect a narrative’s perceived credibility, they do not, as in documentary accounts, provide grounds for questioning the narrative in its entirety.

Another advantage is that fictional characters are not referential in the same way as documented real people who express political opinions. (The Solanas example, though not strictly fictional, is sufficiently imaginative to bypass the documentary discourse being referenced here.) When political figures or current issues are mentioned, every utterance risks becoming subject to the interpretive frameworks shaped by each student’s social environment, including family, peers, and local communities. Changing one’s stance in such a context may resemble a form of betrayal. In contrast, fictional characters do not seem to automatically trigger this “loyalty mechanism” or social surveillance apparatus—at least not to the same extent.

Teachers are thus encouraged to consider the possibility that reading fiction containing disturbing or challenging scenes can serve as a powerful starting point for deliberative discussions that engage students across both high- and low-energy classroom environments. When reading and discussion are interwoven in a cyclical process, students are encouraged to seek out information, consider the experiences of others, and reflect on how these relate to their own life worlds. This process can foster epistemic courage by prompting students to articulate and explore their beliefs in a shared space.

Such an approach holds potential benefits for a wide range of learners, including shy students and those who may exhibit epistemically or ethically reckless behavior. Both groups can benefit from being exposed to alternative perspectives, enabling

them to reconsider and refine their previously held views. Engaging with unsettling or provocative literature can thus support a broader transformation toward more open-minded and reflective attitudes, potentially initiating a positive cycle of curiosity, dialogue, and growth.

I do not mean to suggest that epistemic courage will develop naturally or quickly for everyone through such a process. Rather, I argue that engaging with provocative literature in a safe space—within a teacher-guided community of inquiry of the kind described above—is a strategy worth exploring in the pursuit of such courage.

Epistemic and dialogical courage are essential capacities and schools need to provide opportunities to practice them. At the same time, more empirical research is needed to clarify how best practices in this area can be developed. Accordingly, this essay does not present a finalized model, but rather an exploratory proposal intended to inspire more concrete ideas, frameworks, and instructional designs to be tested. In this way, I hope to have practiced a form of dialogical courage within the research field of literature instruction.

Conclusion

This exploratory essay aims to connect literature instruction with epistemic courage to suggest a pathway for counteracting both overly cautious and over-confident attitudes and fostering dialogical competencies in high school students. It takes as its point of departure the growing challenges students face in today's political climate, particularly their increasing exposure to discriminatory discourse and misinformation. The discussion is grounded in personal experiences of teaching and teacher supervision, which indicate a need for freer and more critical dialogue in school settings.

The essay seeks to support teachers in challenging the passive, silence-oriented culture prevalent in many classrooms, where

students—despite an understanding of democratic principles—sometimes refrain from expressing personal views out of fear of deviating from norms or losing face. It also addresses the challenge posed by students who communicate with excessive confidence and ideological rigidity, and who show limited willingness to listen seriously to either teachers or classmates.

The essay advocates for dilemma-centered literature as a means of engaging students emotionally and encouraging participation in discussions of complex and ethically challenging issues—topics that are otherwise left to a small number of epistemically reckless peers.

In Sweden, as in many other parts of the world, there is a strong emphasis on combatting intolerant views, which, while well-intentioned, may unintentionally stifle student expression and hinder democratic engagement. Instead of merely discouraging certain beliefs, promoting positive epistemic norms that encourage active belief formation, the essay suggests, could help foster greater self-confidence, resilience, and engagement. This is particularly relevant for marginalized groups, for whom affirmation-based approaches can enhance self-esteem and academic performance. By distinguishing between negative and positive epistemic norms, the essay stresses the importance of cultivating a proactive approach to knowledge, where students are encouraged to seek out and test beliefs in an environment that values dialogue and critical reflection. This approach aligns with the idea that knowledge is dynamic and refined through social processes, such as classroom dialogue, where students' beliefs are tested, challenged, and improved in collaboration with others.

Dialogical courage thus extends epistemic courage by emphasizing the importance of engaging with others to test and refine one's beliefs. The relevance of epistemic and dialogical courage is illustrated by a situation during the supervision of a teacher candidate who faced sexism in a high school class. Although teaching skepticism was initially considered—specifically by building on negative epistemological norms such as, “Be careful when inheriting and spreading beliefs about differences between the sexes”—this educational strategy had already proven

ineffective. Drawing on the concept of epistemic courage, a more positive epistemological approach—one that encourages belief formation and engagement with alternative viewpoints—is proposed. This approach does not dismiss critical thinking but suggests a more dialogical method for addressing difficult and ideologically charged topics. Rather than focusing on correcting misconceptions, the goal is to empower students to engage in thoughtful dialogue, reconsider their assumptions, and develop the ability to navigate the diverse viewpoints and challenges they will encounter in society.

Three texts were tentatively proposed as vantage points for addressing sexism in high school classroom discussions. Varying in provocation, sensitivity, and suspense, they were selected for their combined potential to challenge students' conceptions of gender roles and assumptions about school-sanctioned texts and teacher authority. They can thus encourage reflection on power dynamics and personal agency. The suggested process involves reading and discussing literary texts in a classroom setting, with a focus on creating space for students to express their views and engage with alternative perspectives. Through guided discussions, students can reflect on the narratives, confront their own biases, and explore the ethical dilemmas presented by the literature. This didactic design sketch, intended to invite collaboration from teachers and fellow scholars, is developed exploratively to suggest how dialogue might be promoted in ways that encourage students to deepen their understanding of themselves and the world around them, ultimately fostering the development of epistemic and dialogical courage.

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