

SPECIAL ISSUE ARTICLE

Economic Inequality and Student Outcomes: What We Know and Where to Go From Here

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Research on the effects of exposure to economic inequality has primarily focused on adults in their everyday lives. In this review, we argue that these effects extend to children and adolescents in their school environments. We begin by presenting evidence that economic inequality promotes students' competitive motivations. We then examine three critical implications of this phenomenon for understanding the associations between inequality and students' affective, relational, and achievement outcomes. First, competitive motivations explain why economic inequality predicts negative achievement emotions like test anxiety. However, as competition evokes not only concern about losing, but also hope about winning, we suggest that inequality may also predict positive achievement emotions like pride. Second, competitive motivations explain why economic inequality predicts antisocial behaviors like cheating, but also prosocial behaviors like tactical cooperation. Indeed, competition can lead students to use either of these behaviors strategically to improve their relative performance (i.e., cheating or cooperating to outperform others). Third, competitive motivations explain why economic inequality does not consistently predict achievement, but may widen the gap between students from wealthier and poorer backgrounds. The reason is that competition does not universally increase or decrease performance, but rather has opposing effects (beneficial for some, detrimental for others). Finally, we suggest that future studies could prioritize longitudinal designs and investigate mechanisms, moderators, and different segments of the inequality distribution. We conclude by highlighting the integrative nature of economic inequality research and calling for more conceptual and empirical work to better understand how inequality shapes the minds of younger generations.

Keywords: economic inequality, competitive motivation, test anxiety, social behavior, achievement

A large body of literature indicates that exposure to contexts of economic inequality shapes social perceptions and affects psychological outcomes (for recent reviews, see Gobel & Carvacho, 2024; Peters & Jetten, 2023; Sánchez-Rodríguez et al., 2023; Sommet & Elliot, 2023a; Wienk et al., 2022). Residing in a country or region characterized by an unequal distribution of economic resources (e.g., where there is a large gap between low- and high-income earners) increases the

salience of economic stratification (Wilkinson, 1997), which in turn may influence a range of affective, relational, and behavioral outcomes (see Cheung & Lucas, 2016; Du et al., 2021; B. K. Payne et al., 2017).

Most of the literature on the psychology of economic inequality has focused on adults in their everyday lives, while only a few studies have examined students in educational settings (notable exceptions include Claes et al., *in press*; King et al., 2024; Sommet et al., 2023). However, it has long been argued that students are affected not just by their immediate environments, such as classrooms, but also by wider societal factors (Bronfenbrenner, 1986), and there is no reason to believe that the effect of economic inequality stops at the school gates. This article aims to connect the interdisciplinary literature on economic inequality with educational research, with the hope of leveraging insights from this integrative approach to invigorate and guide empirical work in education. We do so by summarizing findings on the psychological consequences of economic inequality in general, overviewing the sparse body of existing work on economic inequality and student outcomes, interpreting these effects through the lens of competitive motivations, and outlining promising directions for future research.

How Economic Inequality Fosters Competitive Motivations and Affects Outcomes

While poverty has seen a global decline over the past three decades (Hasell et al., 2022), both income inequality and wealth

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inequality have substantially widened in most countries around the world (Chancel et al., 2022). For instance, in the United States, from January 1990 to January 2023, the inflation-adjusted labor and capital market income of the median household increased by about 10%, whereas the income of the top decile increased by more than 80% (Blanchet et al., 2022). In other words, although all American households have become wealthier, the richest households have done so at a significantly faster pace. This trend is not unique to the United States; similar patterns are observed in much of the world, including countries from the Organisation for Economic Co-operation and Development (OECD, 2019)¹ and developing countries (Ravallion, 2014).

Given the magnitude of this phenomenon, psychologists have begun to extensively investigate the effects of economic inequality on individual outcomes (for early work, see de Vries et al., 2011; Loughnan et al., 2011; Oishi et al., 2011). Empirical studies from this literature often compare residents of countries, regions, or cities with varying levels of inequality. Importantly, many studies in the literature, and most of the studies cited in this review, control for an individual measure of wealth (e.g., household income, family resources) and an aggregate measure of wealth (e.g., gross domestic product or median income in the area of residence). This means that the statistical effects of economic inequality discussed in this review are observed after removing the variance in outcomes that can be attributed to between-person differences in socioeconomic status (SES) and between-context differences in economic development.²

Recently, Sommet and Elliot (2023a) introduced a conceptual framework to organize the dense and complex evidence in this area of research. This framework is based on the idea that contexts of economic inequality shift individuals' focus toward the economic dimension of social comparison and foster an ethos of competitiveness. Individuals living in more economically unequal environments are more prone to categorize their social world into the "haves" and the "have-nots" (Peters et al., 2022), ascribe greater importance to personal success and achievement (Du et al., 2024), and thereby develop competitive motivations.

It is important to note that competitive motivations can be defined and operationalized differently across disciplines. In behavioral economics, competitive motivations are often conceptualized as a preference for maximizing one's gains compared to others in economic games (Altman, 2023). In personality psychology, they are often conceptualized as a trait reflecting an internal disposition to compete (Spence & Helmreich, 1983). In educational psychology, they may be most precisely conceptualized through the lens of performance-based goals, wherein individuals strive to approach normative competence (i.e., outperforming others) or to avoid normative incompetence (i.e., not being outperformed by others; Sommet & Elliot, 2016). To accommodate these cross-disciplinary differences, this article adopts "competitive motivations" as an umbrella term that encompasses and refers to an omnibus orientation towards competition (for relevant work, see Fülöp & Orosz, 2015; Garcia et al., 2013; Horney, 1937/2013). However, we will later refine our conceptualization by leaning more heavily on the achievement goal framework (for foundational work, see Dweck, 1986; Elliot, 1999).

The idea that contexts of economic inequality nurture competitiveness has been documented in a variety of studies. In a series

of cross-sectional studies, Sommet et al. (2019) showed that residents of U.S. ZIP codes with higher levels of inequality were more likely to view their fellow residents as competitive, which in turn led them to endorse competitive goals, such as striving to become wealthier than others (or, at a minimum, not becoming poorer than others). In a large follow-up longitudinal study, Sommet and Elliot (2023b) found that residents of U.S. counties where income inequality had risen from 1 year to the next perceived an increase in competitive motivations among the people around them, while the reverse was not observed. In an experiment, Sánchez-Rodríguez et al. (2019, Study 3) demonstrated that asking U.S. participants to imagine a fictional society with high versus low levels of income inequality led them to perceive the inhabitants of the society as more competitive and to behave more selfishly when allocating resources between themselves and others. Further experiments replicated these findings with populations from various countries such as Australia (Sánchez-Rodríguez et al., 2019), China (Cheng et al., 2021), Italy (Filippi et al., 2023), Spain (Melita et al., 2021), and the United States (Davidai, 2023; Sommet et al., 2023; To et al., 2023).

Research linking economic inequality to competitive motivations is important because it can account for a wide spectrum of findings in the literature. For instance, individuals residing in more economically unequal places have been found to work longer hours (Alexiou & Kartiyasa, 2020), take greater financial risks (B. K. Payne et al., 2017), have an increased likelihood of engaging in economic crimes (Wei et al., 2023), and show a heightened interest in positional goods, such as luxury brands, which serve to signal status to others (Walasek et al., 2018). Despite their diversity, these outcomes can all be interpreted as reflecting how income inequality fuels motivations to keep up with the economic competition. Specifically, they can be seen as strategies to either maximize, maintain, or at the very least, not diminish one's position in the economic hierarchy. Importantly, while these strategies are often socially undesirable, they are not necessarily so, as inequality may predict outcomes as different as profit-driven crime and increased working hours (for additional research, see Hannay et al., 2021; Pazzona, 2024). It is also important to note that these strategies are not uniformly distributed across groups. For instance, exposure to economic inequality predicts greater economic risk-taking among individuals with lower incomes compared to those with higher incomes (Mishra et al., 2015), which can ironically perpetuate cycles of poverty (for relevant review, see Mishra et al., 2024). For now, we will explore whether the nexus between economic inequality and competitive motivations holds true not only among adults in their everyday lives but also among students in school settings. Later, we will discuss how this phenomenon may carry varied implications, some of which can be particularly negative for those at the bottom of the social ladder.

¹ The OECD comprises 38 member countries, including numerous European nations (such as Austria, France, Germany, Italy, Greece, Norway, Poland, and Portugal), as well as the United Kingdom, the United States, Mexico, Chile, Australia, Japan, Korea, Israel, and Türkiye.

² For examples of work on the adverse effects of poverty in the school environment, see McLoyd (1998), Perry and McConney (2010), and Rutkowski et al. (2018).

Summary

- In recent decades, global poverty has declined, but national economic inequalities have risen
- Cross-sectional, longitudinal, and experimental evidence demonstrate a robust contextual effect of economic inequality on perceived competitiveness and competitive motivations
- The effect of inequality on competitive motivations may explain why inequality exerts a main effect on working hours, profit-driven crimes, financial risk-taking, etc.

How Economic Inequality Fosters Competitive Motivations in Students

Numerous studies in educational psychology have shown that students are influenced by features of their local environments, ranging from the family environment (e.g., parental practices; e.g., see Pinquart & Ebeling, 2020) to the school environment (e.g., school policies; Allen et al., 2018). However, students are also embedded within broader environments such as cities, regions, or nations, and—similar to adults—they are affected by the socioeconomic characteristics of these environments. In this section, we begin by discussing three mechanisms through which contexts of economic inequality may shape students' competitive motivations, and we then present relevant empirical evidence.

1. Students experience economic inequality first-hand. Children are not shielded from economic contexts simply by virtue of their age; they encounter and encode structural and interpersonal cues of wealth and inequality in daily life (Diaz et al., 2023; Legaspi et al., 2023). There is evidence that by the age of 3, children can differentiate between rich and poor individuals based on appearance; by the age of 8, they possess a sophisticated enough understanding of economic stratification to be able to rank jobs by income; by the age of 14, they are aware of the structural forces at play within society, which enables them to connect inequality with economic and political systems (for reviews, see Dickinson et al., 2023; Elenbaas et al., 2020). Moreover, children are not blind to the types of motivations that energize and direct adult behavior. Starting from the ages of 3–5, children worldwide develop a theory of mind (i.e., the ability to attribute mental states, such as motivations, to others), and they become increasingly attentive to social norms (e.g., how competition is valued in society), both conforming to and enforcing them (for a review, see Legare, 2019). Taken together, these findings suggest that school-age children are capable of noticing and, therefore, being influenced by economic inequality, as well as the competitive motivations that such inequality may induce among adults.
2. Students experience economic inequality through their parents. Economic theory suggests that economic inequality increases returns to education, creating an incentive for parents to push their children to succeed (Doepke et al., 2019). In simpler terms, when the gap between low- and high-income groups widens, the stakes of climbing (or

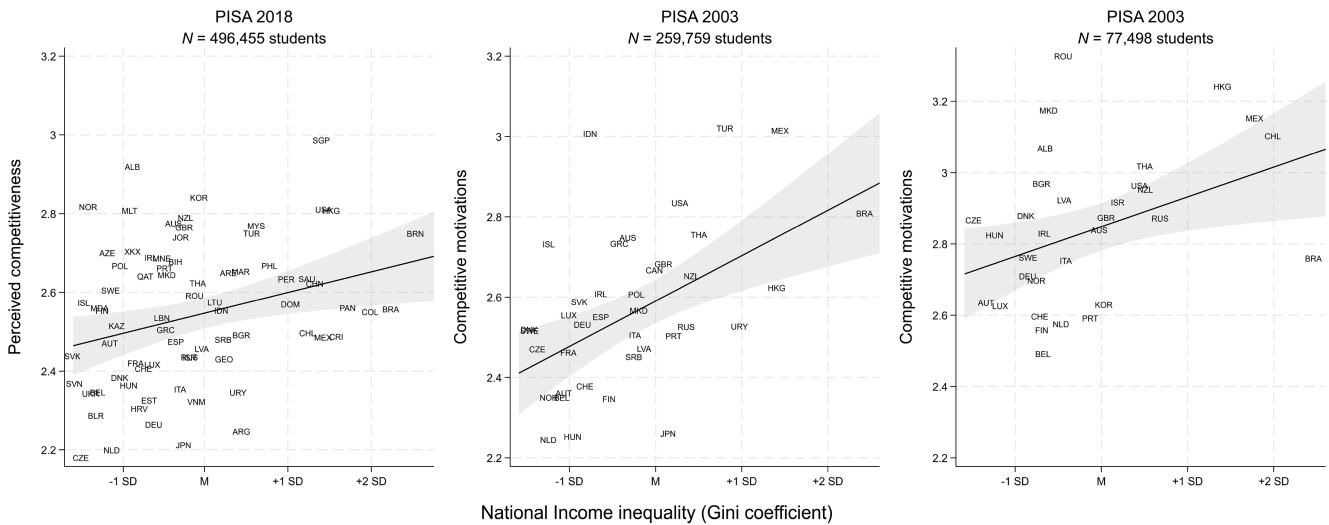
falling from) the economic ladder become higher; this, in turn, prompts parents to exert more pressure on their children to perform well at school. While exposure to income inequality does not lessen the inherent advantage that middle- and upper-class families hold over lower-class families in understanding, leveraging, and eventually benefiting from the educational system (for a review, see Goudeau et al., *in press*), the critical point is that inequality leads parents of all classes to value academic success more highly. Empirical evidence supports this line of reasoning, indicating that parents in more economically unequal contexts allocate more financial resources to their children's education (D. Schneider et al., 2018), adopt a more intensive parenting style (W. Schneider & Schenck-Fontaine, 2022), and place a greater emphasis on hard work (Doepke & Zilibotti, 2019). This suggests that parents are influenced by economic inequality in their child-rearing practices, leading to increased pressure on their children to succeed and potentially fostering stronger competitive motivations at school.

3. Students experience economic inequality through their teachers. Teachers are often regarded as the primary agents of socialization in schools, imparting beliefs to students that may persist throughout their life course (for a foundational study and its 50-year follow-up, see Newcomb, 1943 and Alwin et al., 1991; for more recent work, see Sommet et al., 2017). Like everyone else, teachers are not immune to the effects of economic inequality, which can influence the types of values, norms, and goals they deem important and eventually transmit to their students. While research in this field is still emerging, preliminary evidence suggests that students from countries with higher levels of economic inequality perceive their teacher as being more engaged (Johnson et al., 2024; see also Chiu & Chow, 2011). In addition, national economic inequality may be associated with stronger beliefs in meritocracy (Mijs, 2021; but see Bartram, 2023; Morris et al., 2022), and teachers with these meritocratic beliefs tend to foster classroom environments that emphasize the importance of outperforming others (Darnon et al., 2023). In light of these findings, it seems plausible that teachers in economically unequal environments may recognize the particular importance of relative success in a stratified society, thereby developing practices that encourage social comparison in their classrooms. This could, in turn, foster competitive motivations among students.

These three mechanisms suggest that economic inequality not only prompts adults to be more competitive in their everyday lives, but can also lead students to become more competitive at school, either directly or through the influence of their parents and teachers. Sommet et al. (2023) investigated this hypothesis in a series of four preregistered studies. As a first step, the authors conducted three observational studies using the Programme for International Student Assessment (PISA) data sets from 2018, 2003, and 2000, involving more than 800,000 lower secondary school students from 75, 38, and 32 countries, respectively. As can be seen in Figure 1, the data revealed two primary findings: (a) students from countries with greater income inequality reported

Figure 1

Perceived Competitiveness (Left Panel) and Competitive Motivations (Middle and Right Panels) at School as a Function of National Income Inequality



Note. The outcome variables are measured using a 4-point response scale, where larger values indicate greater competitiveness. The alpha-3 country codes represent the national averages of the outcome variables. Shaded areas denote the 95% confidence intervals. The standardized coefficients for the relationships depicted in the left, middle, and right panels are $\beta = .07$ ($p = .008$), $\beta = .17$ ($p < .001$), and $\beta = .12$ ($p = .015$), respectively. PISA = Programme for International Student Assessment. Adapted from “Income Inequality Predicts Competitiveness and Cooperativeness at School,” by N. Sommet, D. L. Weissman, and A. J. Elliot, 2023, *Journal of Educational Psychology*, 115(1), pp. 173–191 (<https://doi.org/10.1037/edu0000731>). Copyright 2023 by American Psychological Association.

a higher perception of competitiveness among their peers, measured with items such as “In my school, students seem to value competition” (adapted from Murayama & Elliot, 2012); (b) students from these countries were more likely to pursue competitive motivations themselves, measured by performance-approach goal items such as “I always try to do better than the other students in my class” (see Elliot & Murayama, 2008). Although these studies do not enable one to determine whether perceiving others as competitive causes one to become competitive (social contagion) or if being competitive leads to perceiving others as competitive (social projection), they suggest that schools in countries with greater economic inequality are breeding grounds for competitive motivations. As a second step, the authors conducted an experimental study where young adults imagined going to school in a society with either low (control condition) or high (experimental condition) economic inequality. Similar to the findings of the observational studies, economic inequality was associated with both higher perceived competitiveness and increased competitive motivations.

The Downstream Consequences of Economic Inequality in School Settings

The research linking economic inequality to competitive motivations among students holds significant importance. It not only facilitates a better understanding of the downstream consequences of economic inequality in school settings, as observed in existing studies, but also expands the range of predictions that can be drawn from these studies. In this section, we examine current evidence through the lens of competitive motivations, focusing on three types of these downstream consequences: (a) affective consequences, (b) relational consequences, and (c) consequences for achievement. Theoretically, these phenomena are expected to influence students from primary school onward. However, there is no systematic testing on different age groups, which is why we specify the target student population for each study referenced. Figure 2 provides a graphical summary of the relationships discussed in this review.

Affective Consequences

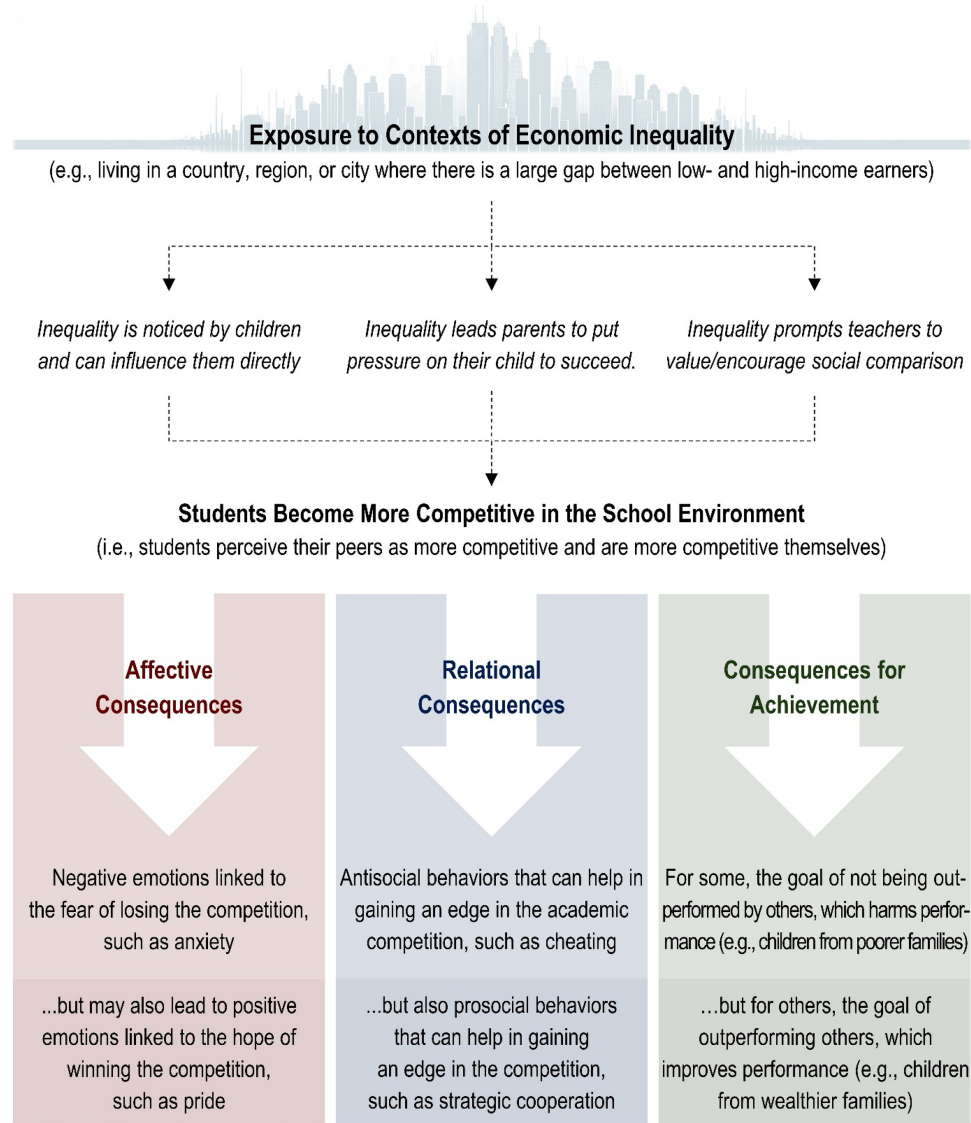
There is compelling evidence linking contexts of economic inequality to students’ academic anxiety. In a recent study, King et al. (2024) analyzed the PISA 2015 data set ($N \approx 400,000$ students from $K = 51$ countries). They found that lower secondary school students from countries with higher levels of income inequality reported greater test anxiety (sample item: “I often worry that it will be difficult for me to take a test”). In a parallel study, Claes et al. (in press) independently analyzed the same data set and, without prior knowledge of King et al.’s (2024) work, observed the same pattern. In addition, Claes et al. extended their analysis to the PISA

Summary

- Economic inequality and adults’ motivations are noticed by children
- Economic inequality leads parents to pressure their children for academic success
- Economic inequality may affect teachers’ practices and the values they transmit to students
- Students from more unequal countries, or those experimentally exposed to economic inequality, perceive their peers as more competitive and are more competitive themselves

Figure 2

Graphical Representation of the Effect of Exposure to Contexts of Economic Inequality on Student Competitiveness, and Its Consequences for Affect, Relationship, and Achievement



Note. See the online article for the color version of this figure.

2003 and 2012 data sets ($Ns \approx 750,000$ students from $Ks = 41$ and 65 countries), and they found that lower secondary school students from countries with higher levels of income inequality reported greater domain-specific anxiety (sample item: “I often worry that it will be difficult for me in Mathematics classes”). Importantly, in [Claes et al.’s \(in press\)](#) studies, the association between economic inequality and student anxiety was fairly substantial, with a standardized coefficient ranging from $\beta = .15$ to $\beta = .20$. Moreover, this relationship did not differ between students from poorer and wealthier families, suggesting that the anxiety-provoking effect of income inequality extends across the economic spectrum. Although the authors did not anticipate these findings, they noted that these trends are consistent with the “status anxiety hypothesis” ([Layte & Whelan, 2014](#)), which suggests that income inequality acts

as a contextual stressor for everyone in society, generating pervasive concerns about relative status, social comparison, and achievement.

Given that economic inequality fosters competitive motivations in students, the association between inequality and anxiety does not necessarily come as a surprise. Indeed, meta-analyses have consistently demonstrated that competitive motivations, such as striving to outperform others at school, predict state anxiety ([S. C. Payne et al., 2007](#)), particularly test anxiety ([von der Embse et al., 2018](#)). However, this does not represent the full picture. Competition has long been recognized as a social stressor that makes normative evaluation salient ([Deutsch, 1949](#); [Mussweiler, 2003](#); [Tesser, 1988](#)). As such, it can evoke not only negative emotions associated with concerns of losing the competition, but also positive emotions tied to the hope of winning (for a review, see [To et al., 2020](#)). According

to the hierarchical model of achievement motivation, the goal of beating the competition is grounded in both a need to avoid the shame of failure and a need to approach the pride of success, with each motive leading to opposing downstream affective consequences (Elliot & Sommet, 2023; Sommet & Elliot, 2023b). Supporting this view, meta-analyses have consistently demonstrated that striving to outperform others at school is not only associated with negative achievement emotions such as worry or anxiety, but also with positive achievement emotions such as task interest or enjoyment (Huang, 2011; Senko & Dawson, 2017). As such, it is possible that economic inequality not only fosters anxiety among students, but also fosters positive emotions associated with the prospect of winning the competition, such as eagerness, pride, and hope. Future research needs to explore this provocative possibility.

The findings linking national economic inequality to anxiety at school also carry implications for the decline of adolescent mental health. There is growing evidence indicating that young people across the world, and particularly teenage girls, are increasingly susceptible to low well-being (Marquez & Long, 2021), feelings of loneliness (Twenge et al., 2021), and other mental health issues (Cosma et al., 2020). Researchers have attributed this trend to a variety of factors, including the rise in digital media use (Twenge, 2020), the decline of teenagers' opportunities for independent activity (Gray et al., 2023), and the decrease in family stability (Sweeting et al., 2010). Other research has linked the upsurge in adolescent mental health problems to rising income inequality (Du et al., 2019; Elgar et al., 2015), intensified competition for access to higher education (Högberg, 2021), and increased schoolwork pressure (Cosma et al., 2020). The findings described in this section support these latter ideas: The growing gap between the rich and the poor may have increased anxieties about achieving economic success in life among a portion of the adolescent population, which in turn may have contributed to a surge in the prevalence of mental health problems. Furthermore, as meta-analytic evidence suggests that school-aged girls are more prone to test anxiety than boys (von der Embse et al., 2018), this explanation could also account for why the surge in mental health problems is particularly pronounced among girls.

Summary

- Students from countries with more economic inequality report more academic anxiety
- This may only be half of the story, as competitive motivations driven by inequality should lead to not only negative emotions such as anxiety, but also positive emotions such as hope
- The rise in economic inequality and its relationship with anxiety at school may partly account for the decline in well-being among adolescents, particularly teenage girls

Relational Consequences

In recent research, King et al. (2022) argued that the influence of national economic inequality on status competition in society might spill over into educational settings and diminish students' sense of belonging in school. To investigate this idea, the authors combined three different PISA data sets covering 65 countries, focusing on a measure of school belonging that included items such as "I feel like an outsider at school" (reversed) and "I feel

like I belong at school." The authors found that lower secondary school students in countries with higher income inequality were more likely to report a diminished sense of belonging, an effect that was more pronounced for students from less affluent family backgrounds.

However, King et al.'s (2022) research had an important limitation: Although the multilevel model used in the analysis adequately treated students as nested within schools and countries, it omitted the country-year level intercept, thereby not accounting for interdependence within country-years (Fairbrother, 2014).³ In another paper, Sommet et al. (2023) preregistered the use of fully specified multilevel models and examined more recent PISA data, encompassing a broader range of countries. Sommet et al. replicated the main effect of national income inequality on school belongingness observed by King et al. (2022) when using PISA 2018 data, but not when using PISA 2000 or 2003 data. Additionally, they did not replicate the interaction between income inequality and family background. Taken together, these findings suggest that the relationship between income inequality and students' sense of belonging may not be as robust as originally thought and—despite its theoretical relevance—should be viewed as preliminary.

While evidence that economic inequality disrupts school belonging is limited, studies suggesting that it increases the prevalence of antisocial behavior and impedes social behavior among students are more compelling. Neville (2012) reported that inhabitants from U.S. states with greater income inequality were more likely to make academically dishonest web search queries such as "free term papers" or visit plagiarism websites like Cheathouse or AcaDemon. In a series of studies, Elgar et al. (2009, 2019, 2013) repeatedly demonstrated that 11- to 15-year-old students from countries with greater income inequality were more often involved in school bullying, either as perpetrators or victims, or in some cases, both. In the same vein, Contreras et al. (2015) found that fourth-grade and eighth-grade students from countries with higher or rising income inequality were more likely to encounter violent behaviors, such as theft or injury. Finally, Sum and Bădescu (2023) used 2015 PISA data to show that lower secondary school students in schools with greater income inequality exhibited worse collaborative problem solving, a skill requiring open and effective social connection and communication (e.g., group decision making and teamwork). In sum, the literature suggests that economic inequality is associated with cheating, bullying, aggressive behavior, and less effective social behavior in the school environment.

On one hand, this result is not surprising, as competitive contexts—such as those generally fostered by economic inequality—are known to exact social costs in educational settings (for a meta-analysis, see Roseth et al., 2008), while competitive motivations often predict antisocial behavior (for a review, see Senko et al., 2011). For instance, a large-scale crowd-sourced project involving 45 research teams and including nearly 20,000 participants documented a small adverse effect of experimentally induced

³ Another common solution to address the issue of accounting for interdependence within country-years is the use of year fixed-effects (Allison, 2009). For another study that identified a negative link between income inequality and school belonging, but that also did not fully consider the clustering nature of the data, see Johnson et al. (2024).

competition on moral behavior (Huber et al., 2023). Other experimental data show that adherence to self-enhancement values—defined as the pursuit of power and personal success through normative competence—is linked to cheating in educational settings (Pulfrey & Butera, 2013). Furthermore, a long tradition of sport psychology research has demonstrated that competitive motivations predict more disengagement, unfair play, and transgressive behavior (for a review, see Kavussanu & Al-Yaaribi, 2021). On the other hand, antisocial behaviors represent just one of many strategies that individuals can adopt in competitive contexts (e.g., see Gilbert & Basran, 2019). To illustrate, while an individual motivated to win a competition may resort to cheating as a shortcut to victory, they may also choose to work harder, persist longer, or—counterintuitively as it may seem—cooperate more.

In a study previously mentioned, Sommet et al. (2023) analyzed two different PISA data sets and observed unexpected findings. Contrary to their hypothesis, they found that lower secondary school students from countries with greater economic inequality did not report less, but rather more positive attitudes toward cooperation with their peers. In follow-up analyses, and then in a preregistered experimental replication, they elucidated this paradox by differentiating the reasons behind cooperative behavior. They showed that middle school students in contexts of economic inequality primarily cooperate to boost their academic performance (sample item: “I cooperate with my classmates because it can help me to achieve academic success”) rather than for the inherent pleasure of helping others (sample item: “I cooperate with my classmates because collaborating is fun”). To interpret this finding, the authors turned to the literature on the economics of cooperation, which highlights that economic agents in the marketplace sometimes cooperate for strategic reasons, forming alliances with competitors to secure a cooperative-based competitive advantage (for reviews, see Bouncken et al., 2015; Köseoğlu et al., 2019). When applied to educational contexts, this suggests that students in unequal societies may engage in cooperation for instrumental reasons, working together on homework and in-class activities to outperform those who do not participate in such collaborations. This perspective might shed light on other counterintuitive findings, such as those by Godfrey and Cherng (2016), who observed that inequality could paradoxically lead 15-year-old students to be more cooperative and helpful in their communities. Overall, it suggests that the ethos of competitiveness fueled by inequality may give rise to both antisocial behaviors and prosocial behaviors, as long as these behaviors support personal advancement in competitive settings (e.g., cheating to gain a competitive edge or, alternatively, finding ad hoc allies to gain a competitive edge).

Consequences for Achievement

A number of cross-sectional studies explored the relationship between national income inequality and academic achievement across various grade levels (e.g., Chiu, 2015; Chiu & Chow, 2015; Condrón, 2011; Thorson & Gearhart, 2018; Workman, 2022). Although these studies often reveal a negative association between income inequality and academic achievement, the robustness of these results varies depending on model specifications (e.g., the choice of covariates, the nature of the outcome variable, and the sample used). For instance, the statistical effect of income inequality may substantially diminish or even disappear when controlling for national gross domestic product (Chiu, 2010) or student socioeconomic status (King et al., 2024). As another example, the statistical effect of income inequality may differ across academic disciplines: In some cases, income inequality negatively predicts reading achievement but not math achievement (e.g., see Workman, 2022), while at other times, it negatively predicts math achievement but not reading achievement (e.g., see Pickett & Wilkinson, 2007; Workman, 2023).

From a theoretical perspective, these inconsistencies might be attributable to the intricate relationship between competitive environments, competitive motivations, and achievement. Competitive environments, such as those promoted by income inequality, can elicit two types of competitive motivations. First, exposure to income inequality can trigger aversive competitive motivations, where individuals focus on preventing loss in competition (for cross-sectional evidence, see Sommet et al., 2019; for longitudinal and experimental evidence, see Sommet & Elliot, 2023b). These aversive motivations can be conceptualized using performance-avoidance goals (i.e., striving to avoid being outperformed by others; Elliot, 1999), fear of failure (i.e., a desire to avoid the shame of failure; Atkinson, 1957), or domain-general prevention focus (i.e., being concerned with maintaining obligations and avoiding losses; Higgins, 1998). Second, exposure to income inequality may also elicit appetitive competitive motivations, where individuals focus on achieving future success (Sommet & Elliot, 2023b; Sommet et al., 2019). These appetitive motivations can be conceptualized using performance-approach goals (i.e., striving to outperform others; Elliot, 1999), need for achievement (i.e., a desire to approach the pride of success; McClelland et al., 1953), or domain-general promotion focus (i.e., being concerned with attaining ideals and acquiring gains; Higgins, 1998).

Importantly, Murayama and Elliot (2012) reported meta-analytic evidence showing that competitive environments exert opposing effects on achievement through these processes. On one hand, competition may lead individuals to strive to avoid normative incompetence (e.g., not being among the worst students in their class), which results in a threat-based response characterized by anxiety and resignation, and in turn hinders performance (e.g., exam score). On the other hand, competition can lead individuals to strive to approach normative competence (e.g., being among the best students in their class), resulting in a challenge-based response characterized by eagerness and persistence, thereby enhancing performance. Importantly, the meta-analysis did not reveal differences across age groups (i.e., 18 years old or younger vs. older than 18 years) or the type of performance domain (i.e., sports vs. work vs. school; for additional evidence, see Elliot et al., 2018; for reviews, see Elliot, 2020; Murayama et al., 2021). Therefore, it is plausible that income

Summary

- More research is needed on the link between economic inequality and school belonging
- There is cross-sectional evidence linking economic inequality to antisocial behaviors commonly associated with competition, such as cheating, bullying, and violence in schools
- But there is more to the story, as inequality may predict both antisocial (e.g., cheating) and prosocial (e.g., tactical cooperation) behaviors, provided they help in outperforming others

inequality contributes to both aversive and appetitive competitive motivations in school, each with opposing effects on achievement.

At this point, the key remaining question is: When does economic inequality, together with the competitive context it fosters, impair achievement, and when might it paradoxically improve it? According to the biopsychosocial model of challenge and threat (for reviews, see Blascovich, 2013; Jamieson, 2017; Seery, 2013), individuals facing a social stressor like competition can respond in one of two ways. If their resources are insufficient for meeting the stressor, they appraise the situation as a threat, which can lead to intrusive thoughts and interfere with achievement. Conversely, if their resources are sufficient, they appraise the situation as a challenge, which frees up working-memory capacity and facilitates achievement. Consistent with this perspective, Claes et al. (in press) analyzed a series of PISA data sets and demonstrated that the association between national income inequality and academic achievement was moderated by parental economic resources. Specifically, the authors found that in countries with higher levels of income inequality, the achievement gap between middle school students from families with fewer economic resources (e.g., smaller houses and no cars) and those from families with greater economic resources tended to widen. This can be interpreted as showing that under conditions of greater economic inequality and intense competition in society, students from economically advantaged backgrounds feel more challenged and tend to thrive in school, while those from disadvantaged backgrounds feel more threatened and struggle.

However, Claes et al.'s (in press) research uncovered further complexities. The authors found that the association between national income inequality and academic achievement was also moderated by parental cultural resources, but in a different direction than originally anticipated. Specifically, they found that in countries with higher levels of income equality, the achievement gap between middle school students from families with fewer cultural resources (e.g., fewer books at home) and those from families with greater cultural resources tended to widen. Importantly, in an independent study, Wang and Wu (2023) also found that the more economically equal a country is, the larger the difference in academic achievement between middle school students with more cultural capital (e.g., whose families possess more educational resources, more works of art, and more books) and students with less cultural capital.

In summary, contexts of greater economic inequality seem to advantage students from wealthier families over those from poorer families, whereas greater economic equality seems to advantage students from more educated families over those from less educated families. Put differently, economic inequality seemingly feeds inequality of opportunity at school based on parental wealth, whereas economic equality seemingly feeds inequality of opportunity based on parental education and cultural resources. One possible explanation is that in contexts of greater economic inequality, the economic dimension is more critical in defining one's place in the hierarchy, leading students from wealthier families to feel more capable to cope with academic demands and achieve success; conversely, in contexts of greater economic equality, the cultural background might supplant economic background as the key dimension defining the social hierarchy, leading students from more educated families to feel more capable to cope with academic demands and achieve success.

Summary

- Cross-national research usually shows a negative link between inequality and achievement
- But these findings are not always consistent, which may be due to competition fueling both aversive and appetitive competitive motivations, with opposing effects on achievement
- In contexts of economic inequality, the achievement gap widens between students from wealthier and poorer families
- But in contexts of economic equality, the achievement gap widens between students from more versus less educated families showing that one form of inequality of opportunity is replaced with another

Directions for Future Research

In this integrative review, we have conducted a comprehensive examination of the emerging literature on the psychological consequences of economic inequality in schools. A central proposition guiding our review is that the competitive motivations prompted by contexts of economic inequality may explain a range of consequences on students' affect (e.g., test anxiety), relationships (e.g., antisocial behaviors, as well as tactical prosocial behaviors to gain an advantage in academic competition), and achievement (e.g., with economic inequality favoring students whose parents occupy more advantageous positions within the economic hierarchy). In this final section, we offer two sets of suggestions for expanding the methodological and theoretical scope of this important literature.

Methodological Considerations

A major methodological limitation of the current literature is the high prevalence of cross-sectional studies. Of all the existing observational studies on the psychology of economic inequality focusing on students, we are aware of only two that have used a longitudinal design (i.e., Workman, 2022, 2023). This overreliance on cross-sectional designs is problematic for three reasons.

1. Limited power to detect contextual statistical effects. Many cross-sectional studies testing the effect of economic inequality are based on comparisons involving a limited number of clusters, sometimes just around 30 countries (e.g., Chiu & Chow, 2015). Although such cross-national samples may seem large at first glance, one must remember that economic inequality is measured at the cluster level, which means a study involving 30 countries effectively examines only 30 data points. When the higher-level sample size is this small, the statistical power necessary to detect contextual effects becomes critically low (Arend & Schäfer, 2019; Sommet & Morselli, 2021), and reduces the likelihood of documenting replicable effects (e.g., see Button et al., 2013).
2. Overly broad level of geographic aggregation. Second, nearly all cross-sectional studies in the literature measure economic inequality at broad levels of geographic aggregation, such as U.S. states or nations (for exceptions using local inequality estimates, see Sum & Bădescu, 2023; Workman, 2022). While individuals can make fairly accurate guesses about the level of economic inequality in their immediate surroundings (e.g., their county, their ZIP

code, their cities; see Johnston & Newman, 2016), we know that they struggle to accurately perceive the magnitude of inequality at larger scales (Gimpelson & Treisman, 2018; Willis et al., 2022), which creates observational error and noise in the data.

3. Limited ability to draw causal inference. Third and finally, cross-sectional designs inherently grapple with the third-variable problem. Countries that differ in terms of economic inequality often vary on other factors, which can be challenging or even impossible to control for statistically (Westfall & Yarkoni, 2016), such as historical legacy, cultural background, or sociopolitical structures (for relevant research, see Hiilamo & Kangas, 2014). As a result, the risk of higher-level confounding in these studies is considerable and important.

To address these challenges, future research would do well to use repeated cross-sectional designs (e.g., by combining multiple PISA data sets; Högberg et al., 2021)⁴ or longitudinal designs (e.g., by using the Education Longitudinal Study of 2002; Bozick et al., 2007). Specifically, temporal data enables researchers to: (a) increase the higher-level sample size, as it involves several clusters per year rather than just one; (b) use local rather than global clusters (e.g., intra-school inequality; Sum & Bădescu, 2023), as national panel data sets can for instance be merged with school district inequality estimates; and (c) better approach causality, as repeated measurements allow the examination of the psychological effects of changes in inequality over time among students within a specific location, thereby avoiding comparisons between vastly different places.

Theoretical Considerations

From a theoretical perspective, future studies would benefit from adopting a more systematic approach to understanding how (mediators), when (moderators), and where (which part of the distribution) economic inequality affects affective, relational, or achievement-based outcomes among students.

1. In search of psychological mediators accounting for the dual effects of economic inequality. While previous psychological reviews have focused on mechanisms like social trust or status anxiety to explain the adverse effects of income inequality (e.g., Buttrick & Oishi, 2017), we propose that competitive motivations are critical to understanding the full range of psychological effects of inequality, whether they are detrimental, neutral, or even beneficial. Specifically, we believe that the achievement goal framework is a promising approach to operationalize competitive motivations and gain a comprehensive understanding of this wide array of consequences. The achievement goals framework distinguishes between mastery goals (master a task; improve over time) and—as mentioned above—two types of performance goals: performance-avoidance goals (not be outperformed by others) and performance-approach goals (outperform others). Most importantly for us, the nomological network for performance goals is well-established, as meta-analyses demonstrate that (a) performance-avoidance goals predict undesirable outcomes such as low self-efficacy, self-handicapping, negative affect, and cheating, whereas (b) performance-approach goals predict desirable outcomes such as high self-efficacy and self-regulation, but also undesirable

outcomes such as negative affect and cheating (Fritz et al., 2023; Huang, 2011, 2016; Schwinger et al., 2022; Senko & Dawson, 2017). Connecting this literature to the literature on the psychology of income inequality, we contend that contexts of inequality can prompt performance-avoidance goals (Sommet et al., 2019), which in school settings can lead to greater anxiety (King et al., 2024), but may also extend to other undesirable outcomes, including negative self-talk, disengagement, and even school dropout (for supporting evidence, see Kearney & Levine, 2016). Concurrently, we argue that contexts of inequality can also prompt performance-approach goals (Sommet et al., 2019), which in school settings can lead to engaging in tactical cooperation to succeed (Sommet et al., 2023), but may also extend to a mixture of undesirable and desirable outcomes, including challenge seeking, active class participation, and academic dishonesty.

2. In search of moderators differentiating those who suffer and those who paradoxically benefit from economic inequality. Economic inequality is often viewed as a purely destructive societal force (e.g., see Wilkinson & Pickett, 2017), yet we know that not all individuals are inequality-averse (Starmans et al., 2017). Economic inequalities can sometimes harm psychological well-being, such as for those facing financial scarcity (Sommet et al., 2018) or those generally lower in socioeconomic status (who face a “double disadvantage”; Odgers & Adler, 2018, p. 129). However, economic inequalities can also improve well-being, such as for those who reject egalitarian norms (Rözer & Kraaykamp, 2013) or those generally higher in socioeconomic status (who generally, by symmetry, may experience some sort of double advantage; Bartram, 2022). While identifying students who struggle in unequal environments is crucial for understanding their vulnerability, identifying those who may paradoxically thrive in these environments is important for understanding how inequality perpetuates itself (i.e., disadvantaging some while favoring others). As previously discussed, educational research has begun to uncover factors that moderate the association between economic inequality and psychological outcomes among students. For instance, King et al. (2022) provided preliminary evidence that the detrimental effect of economic inequality on school belonging may be stronger among lower secondary school students with lower socioeconomic status (but, again, see Sommet et al., 2023). As another example, Claes et al. (in press) showed that economic inequality could increase the relative advantage of lower secondary school students from wealthier families in terms of achievement. While these findings require further confirmation, future research would do well to more systematically investigate moderators of the psychological effects of economic inequality (for an in-depth review focusing on the interaction between income inequality and socioeconomic status in predicting behavioral

⁴ Other cross-national datasets focused on primary or secondary school students exist, such as the Trends in International Mathematics and Science Study or the Progress in International Reading Literacy Study (for an example of research using these datasets, see Scheeren & Bol, 2022).

outcomes among youth, see Browman et al., 2019). Potential moderators might include, but are not limited to, variables like perceived social mobility, sense of control, evaluative pressure, or task difficulty (for related suggestions, see Murayama & Elliot, 2012).

3. Considering different parts of the economic distribution in examining the effects of inequality. Nearly all of the extant research on economic inequality examines the influence of overall inequality on focal outcomes without consideration of specific segments of the economic distribution. However, conceptually, the lower portion of the income or wealth distribution (from the bottom to the middle) and the upper portion of the distribution (from the middle to the top) focus on very different economic groups that likely have very different psychological experiences (De Maio, 2007; Jachimowicz et al., 2023). For example, bottom-to-middle inequality may prompt avoidance goal pursuit aimed at evading poverty, whereas middle-to-top inequality may prompt approach goal pursuit aimed at becoming wealthy, and these pursuits likely have very different implications for affect, cognition, and behavior. A few studies in the literature have begun to attend to this distribution issue and discovered important differences (e.g., Blesch et al., 2022; Tang et al., 2023). For example, Tan et al. (2020) found a negative relationship between inequality and subjective well-being in the bottom-to-middle part of the income inequality distribution, and a positive relationship in the middle-to-top part of the distribution. We believe it will be fruitful for future empirical work to incorporate this “place-in-the-distribution” issue into research with students in schools.

Summary

- Future research would benefit from using repeated cross-sectional or longitudinal designs to better approach causality in studying the psychology of economic inequality at schools.
- Future research would benefit from exploring mediators, moderators, and different types of distribution to better understand the dual effects of economic inequality.

Conclusions

In introducing this review, we indicated our desire to incorporate ideas on the psychology of inequality from the economic domain into the education domain. This integration fits nicely within the overall tradition of research on income inequality which is inherently integrative to its core. Indeed, work in this field is admirably multidisciplinary, drawing on insights from diverse disciplines such as economics (Alesina et al., 2004), sociology (Van de Werfhorst & Salverda, 2012), political science (Gunderson, 2022), social epidemiology (Kawachi & Subramanian, 2014), and, of course, psychology (K. Payne, 2018; Peters & Jetten, 2023; Sánchez-Rodríguez et al., 2023). As psychologists, our unique contribution to this area of research lies in unraveling the psychological mechanisms underlying these effects: How a macro-level economic phenomenon—the shape of the income or wealth distribution—gets inside the heads of individuals to influence their affect, cognition, and behavior. Given

the breadth and importance of this question, it is no surprise that psychologists from many subdisciplines are engaged in this line of inquiry, including social psychology (Cheung & Lucas, 2016) and economic psychology (Ruggeri et al., 2022), but also personality psychology (de Vries et al., 2011), organizational psychology (Muggleton et al., 2022), and evolutionary psychology (Blake & Brooks, 2019). Herein we identify an underappreciated and understudied subdiscipline—educational psychology—and sound the call for more conceptual and empirical work in this area. Extensive research in educational psychology demonstrates how school policies, teacher practices, and classroom climates can cultivate competitive motivations among students (Bardach et al., 2020; Berson & Oreg, 2016; Daumiller et al., 2022). Our review examined how a broader structural predictor, namely economic inequality, may transform schools into hotbeds of competitive motivation and influence students’ affective, relational, and achievement-related outcomes. We hope that future research will delve deeper and wider into these issues, advancing our understanding of how economic inequality shapes the minds of young generations to come.

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