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The Impact of Peer Competition on Academic Performance Among Secondary School Students

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Abstract:

Peer competition in high school has attracted considerable attention, yet most existing studies focus on isolated aspects of competition, leaving the interaction between behavior patterns, psychological mechanisms, and educational contexts underexplored. This paper investigates how peer competition affects students' academic performance by examining three main forms: competition in academic achievement, competition for resources and teacher attention, and competition for social status. It further explores the underlying psychological processes, including self-efficacy, social comparison, and achievement goal orientation, and considers how school-related factors--such as evaluation systems and limited psychological support--moderate these effects. Based on the analysis, the paper offers recommendations to reduce the emphasis on public rankings, strengthen formative assessment, design classroom activities that balance collaboration and competition, encourage teachers to guide students' emotional regulation and self-awareness, and optimize access to resources. These strategies aim to channel competition into a constructive force that supports both academic development and psychological well-being, while providing directions for future research.

Keywords: Peer Competition, Academic Performance, Social Comparison, Achievement Motivation

1. Introduction

Contemporary high school education is characterized by intense selection pressures embedded within its institutional framework and cultural norms. The college entrance examination system, limited access to high-quality educational resources, and families' high expectations for academic performance collectively place students in a highly competitive learning environment over the long term. Within this context, peer comparisons--regarding grades, teacher attention, and opportunities for competitions and selection--become a significant factor influencing students' behavior and psychological well-being. Recent research on

peer effects has demonstrated that classroom peers significantly influence academic achievement, achievement motivation, and learning strategies [1]. Meanwhile, studies in psychology indicate that social comparison shapes academic self-concept and anxiety levels [2]. Therefore, systematically investigating peer competition during high school and its specific pathways of influence on academic performance holds not only theoretical value but also direct implications for instructional design, classroom management, and policy formulation in practice. This study analyzes the impact of peer competition on high school students' academic performance, aiming to analyze empirical evidence and review to clarify the manifestations of competition, its underlying mechanisms, and actionable educational intervention recommendations.

2. The Concept and Manifestations of Peer Competition

Within the learning environment of secondary education, peer competition constitutes a central aspect of students' daily experience. Although its overt manifestations are typically categorized into three types, in authentic school settings these three forms of competition permeate one another, collectively forming a complex ecosystem that influences both academic performance and psychological well-being. Students are not compared along a single dimension, but are simultaneously affected by multiple factors, including academic achievement, access to resources, and social standing. Consequently, peer competition exhibits marked cumulative and dynamic characteristics.

2.1 Competitive Academic Performance

Academic competition is perhaps the most direct and visible form of rivalry in secondary education. Students are primarily assessed through exam scores, class rankings, and overall year-group standings. These measures not only reflect learning outcomes but are also widely used to gauge individual standing, evaluate personal abilities, and anticipate future academic paths. Within this transparent and cyclical system of evaluation, students constantly adjust their position through successive assessments, often measuring themselves against peers.

The impact of this competitive framework varies significantly depending on students' abilities. For those with strong academic skills or high self-confidence, competition can be motivating: seeing their performance relative to others clarifies goals and reinforces the link between effort and achievement. In contrast, students with lower self-confidence, inconsistent performance, or those in the middle of the distribution may experience heightened pressure. Frequent comparisons with peers can undermine their academic self-perception, generate anxiety or frustration, and reduce motivation, gradually placing them at a disadvantage. Clearly, the same performance-based system can produce very different developmental outcomes, acting either as a catalyst for growth or a source of stress.

2.2 Resources and Teacher Attention Competition

Beyond academic performance, the competition for resources and teacher attention constitutes another profoundly influential dynamic shaping students' learning experiences. High-quality educational resources during secondary education are markedly scarce, with elements such as teachers' attention, after-school tutoring opportunities, competition eligibility, and recommended program places all viewed by students as vital pathways to enhancing grades and prospects. Given the limited availability of these resources, pupils frequently proactively showcase their abilities to secure teacher recognition, thereby fostering a persistent "covert competitive system".

Compared to competition for academic achievement, competition for resources is more routine and context-specific, permeating classroom participation, assignment presentation, group collaboration, and even informal social interactions. Pupils receiving greater teacher attention typically exhibit stronger intrinsic motivation and higher levels of engagement, thereby creating a self-reinforcing effect. Conversely, pupils who fail to secure such attention may develop a "competitive disadvantage" through prolonged comparison, exhibiting behaviors such as task avoidance, reduced effort, diminished classroom participation, and even diminished self-efficacy. The cumulative effects of resource competition further exacerbate academic disparities within the class, creating implicit group stratification.

2.3 Competition for Social Status

Competition for social standing is often less overt than academic rivalry, yet it can have equally significant effects on students' psychological well-being and behavior. A pupil's position within their peer group depends not only on grades but also on factors such as popularity, centrality in social networks, participation in school activities, and the quality of relationships with teachers and classmates. Together, these aspects form the foundation for social comparisons among students.

In many classrooms, academic and social standing are closely intertwined. High-performing students often gain greater respect and influence among peers, while socially skilled students those who are well-connected or highly regarded in peer networks, tend to access resources and

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collaborative opportunities more easily, which can further enhance their academic outcomes. However, when social competition intersects with academic rivalry, students who are disadvantaged in either domain may experience heightened feelings of inadequacy or exclusion. Such repeated comparisons can undermine motivation, erode self-esteem, and diminish engagement with learning. The impact becomes even more pronounced when teachers' preferences or the broader classroom culture actively tie academic performance to social status. In such cases, students who excel academically are often granted greater recognition and influence, while those who perform less well may be overlooked or undervalued, reinforcing existing disparities. Over time, these patterns can solidify into a self-perpetuating cycle, where advantages in both social and academic domains continuously reinforce each other. As a result, students who start with fewer resources or lower standing may find themselves increasingly marginalized, struggling not only in terms of social inclusion but also in their academic development.

3. Analysis of Causes

Peer competition manifests particularly prominently during secondary school years, exhibiting a distinct dual effect. This phenomenon stems both from psychological mechanisms unique to adolescence and from structural arrangements within the school environment.

3.1 Psychological Mechanisms and Individual Differences in Peer Competition

From a psychological standpoint, self-efficacy is arguably the most influential internal factor shaping how students experience and respond to competition. It affects not only how they interpret challenges but also how they react to the performance of their peers. Students with high self-efficacy tend to view competition as an opportunity for growth rather than a threat. They are more likely to link their academic outcomes to personal effort, adjust strategies effectively, and persist in the face of setbacks, maintaining motivation and resilience throughout the process. In contrast, students with lower self-efficacy often fall prey to biased interpretations of failure, attributing setbacks to a lack of innate ability rather than modifiable factors such as effort or approach. This can lead to feelings of helplessness, avoidance of challenges, and even disengagement from learning. As a result, within the same competitive environment, students can experience highly divergent developmental paths: for some, competition becomes a catalyst for achievement, while for others, it initiates a downward spiral.

Closely linked to self-efficacy is the role of social comparison, which functions as a critical psychological mechanism influencing students' engagement in competitive dynamics. Festinger's social comparison theory suggests that when faced with complex academic demands and multiple evaluative pressures, adolescents naturally select peers of similar ability or shared goals as points of reference. Through these lateral comparisons, they gauge their own competence and adjust their effort accordingly. Upward comparisons can be motivating when students have strong self-efficacy or when the performance gap is manageable, encouraging them to set higher goals and deepen their learning commitment. However, when the gap is too wide, or when comparisons are highly public and tied to rankings, upward comparison often generates stress, anxiety, and fixed notions of ability, which can disrupt both the quality and continuity of learning. In this sense, self-efficacy shapes a student's capacity to "endure" social comparison, while social comparison, in turn, magnifies the effects of efficacy differences, creating a complex interplay that determines whether competition drives growth or hinders development.

Moreover, achievement goal orientation further influences how students interpret competitive and comparative situations. Mastery-oriented students focus more on the learning process and skill development; in competitive settings, they tend to view peers as learning resources and thus derive greater benefit from moderate comparison. In contrast, performance-oriented students prioritize grades, rankings, and external evaluation. They experience heightened anxiety in environments characterized by public comparison and outcome-focused pressure, tightly linking their self-worth to academic performance, thereby amplifying the psychological burden of competition. Thus, self-efficacy, social comparison, and achievement goal orientation collectively form the key psychological pathways through which students develop divergent responses in competitive contexts.

3.2 The Amplifying Effect of Institutionalised Evaluation and the Absence of Psychological Support on Competition

However, the educational environment at the secondary school level often amplifies the risks inherent in these psychological mechanisms, causing competition to slide from "moderate motivation" into "high-pressure comparison". Firstly, a score-centric assessment system remains the most prominent feature in most secondary schools. Whether in periodic examinations, end-of-term assessments, monthly tests, or weekly practice papers, the focus of evaluation is predominantly on outcomes rather than the learning process. Public rankings, the posting of lea-

derboards, and lists of key students intensify visible peer comparisons, elevating social comparison from a natural internal process to institutionalized external pressure. This approach not only disregards the value of formative assessment but also diminishes teachers' attention to students' learning trajectories, strategy adjustments, and emotional experiences. Ultimately, competition manifests as a zero-sum game, rendering students' self-concepts increasingly fragile.

Secondly, the scarcity of psychological support resources during secondary education prevents students from effectively managing stress arising from competitive environments. In many schools, counselling facilities remain largely unused, leaving pupils without professional guidance or systematic emotional regulation training when facing anxiety, academic setbacks, or emotional fluctuations stemming from peer comparisons. Meanwhile, form tutors and subject teachers, burdened by heavy teaching workloads, struggle to undertake specialized psychological support roles. This leads to negative emotions triggered by peer competition being internalized by students, ultimately manifesting as persistently rising stress levels, diminished academic motivation, and even avoidance of studies or loss of interest in subject learning [3,4].

Considering the aforementioned factors, the dual nature of peer competition in secondary schools stems from the combined influence of psychological mechanisms and institutional environments in shaping competitive pathways [5]. When schools place excessive emphasis on outcome-oriented assessment while neglecting emotional support and guidance on learning strategies, competition is more likely to amplify academic pressure. Conversely, when the education system provides more detailed formative feedback, diverse assessment methods, and stable psychological support structures, peer competition can be transformed into a positive force that fosters academic growth and personal development.

4. Recommendations

4.1 Formative Assessment

The application of formative assessment also enables teachers to identify learning difficulties and emotional fluctuations with greater precision, providing data support for subsequent teaching interventions. Publicized horizontal rankings are a significant catalyst for high-pressure social comparison among students. Not only do they reinforce a zero-sum competitive framework, but they also institutionalize an outcome-oriented focus, leading pupils to view academic performance as an external validation of their self-worth [6]. Reducing public rankings does not necessitate abolishing assessment. Rather, shifting from summative to process-oriented, formative evaluation encourages students to focus on their own learning trajectory rather than gaps between peers. This approach reduces the frequency of negative upward comparisons, mitigates anxiety, and enables students at average or below-average levels to perceive the attainability of improvement through effort, thereby safeguarding their self-efficacy.

4.2 Designing Classroom Activities that Balance Cooperation and Competition: Reducing Competitive Pressure through Structured Design

As noted earlier, the adverse effects of competition frequently stem from an 'isolated competitive structure'. Within this framework, students must bear the consequences of competition alone, while educational resources remain highly constrained, readily triggering anxiety, avoidance behaviors, and impaired self-concept [3]. Given the psychological characteristics of secondary school students--whose cognitive abilities are maturing yet whose self-awareness remains sensitive, social comparisons are pronounced, and emotional regulation skills are still developing--embedding competition within a cooperative framework can significantly mitigate these adverse effects. Specifically, by engaging students in activities such as group competitions, cross-teaching, including peer teaching and peer assessment, and the creation of learning communities, pupils can experience both shared achievement and mutual support. This approach, often referred to as the "cooperation-competition parallel" model, shifts competition away from being a purely individual confrontation, transforming it into a form of strategic interaction guided by collective goals. As a result, the emphasis on "winning or losing" becomes less central, reducing its impact on students' self-concept and emotional well-being. Within such an environment, secondary school students are more likely to adopt mastery-oriented goals and cultivate intrinsic motivation, seeing effort and the learning process itself as valuable paths to developing abilities, rather than viewing learning solely as a contest of achievement.

At the same time, this cooperative-competitive structure aligns with the cognitive and social development of adolescents. Students begin to recognize the importance of teamwork, and the peer-supported environment helps them manage stress and regulate emotions more effectively [7]. Collaborative settings also encourage deeper engagement with learning tasks, promote problem-solving skills, and create opportunities for students to observe and learn from each other. Therefore, thoughtfully designed competitive structures not only reduce potential negative psychological effects but also actively foster motivation,

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enhance classroom participation, and deepen learning [8,9]. By embedding competition within collaboration, educators can turn peer rivalry into a constructive force that simultaneously supports academic growth and holistic psychological development.

4.3 Teacher Level: Actively Guiding and Enhancing Self-awareness

Teachers are the primary shapers of the competitive atmosphere in the classroom. Consequently, their role should extend beyond merely imparting knowledge or assessing performance to include the dynamic observation and guidance of pupils' emotional states. When teachers can identify negative signals in pupils during competition--such as low spirits, avoidance of participation, excessive self-blame, or a marked loss of confidence--and provide timely support, for instance by adjusting the difficulty of assignments, offering personalised feedback, or helping pupils rebuild achievable goals, the potential harms of competition are significantly mitigated [10]. Concurrently, emphasizing mastery-oriented goals, de-emphasising rankings, and focusing on individual progress rather than comparative gaps can fundamentally reshape students' motivational structures. This transforms competition into a supportive condition for self-improvement rather than a source of pressure.

4.4 Resource Allocation Level: Mitigating Zero-Sum Thinking Arising from Perceived Resource Scarcity

Resource allocation in secondary education, such as competition quotas, recommendation eligibility, and extracurricular programs, often exhibits pronounced scarcity, which intensifies the adversarial dimension of peer competition. Therefore, rationally expanding resource accessibility through measures like adopting diverse selection criteria, establishing tiered programmes, and increasing open-access activities can shift students' perception of competition away from viewing it as 'an opportunity only attainable by defeating others' [11]. Concurrently, by introducing multi-dimensional assessment frameworks such as project evaluations, learning process documentation, and competency development portfolios, schools can more comprehensively reflect students' diverse growth trajectories. This mitigates the reliance on single-score metrics as the sole resource allocation criterion. Such approaches not only alleviate students' competitive anxieties but also enable learners with varied strengths to discover development pathways better suited to their individual capacities.

5. Conclusion

This study examined peer competition in high school, focusing on its forms, underlying psychological mechanisms, and the role of the educational environment. Competition appears in three overlapping domains: academic achievement, access to resources and teacher attention, and social status. These forms interact to shape both students' learning outcomes and their emotional experiences. Self-efficacy, social comparison, and achievement goal orientation are key factors influencing how students respond. Those with high self-efficacy and mastery-oriented goals tend to view competition as a growth opportunity, while students with lower self-confidence or strong performance focus are more likely to experience stress, anxiety, and decreased motivation. The school context--particularly score-centric evaluations, public rankings, and limited psychological support--can either amplify or mitigate these effects.

Despite the comprehensive analysis, this study has certain limitations. First, the research primarily relies on literature review and theoretical analysis, without direct empirical data collection from a large sample of secondary school students, which may limit the generalizability of the findings. Second, the interaction between different types of peer competition, individual psychological mechanisms, and school contexts was explored conceptually rather than quantitatively, leaving potential nuances in these dynamics underexplored. Finally, cultural and regional variations in competitive environments were not fully considered, which may affect how applicable the recommendations are in different educational settings. Addressing these limitations in future research could provide more robust evidence and more practical guidance for educators.

Interventions that combine formative assessment, cooperative-competitive classroom designs, teacher guidance on emotion and self-awareness, and more equitable resource allocation can help transform competition into a positive force for learning and personal development. Future research could explore how these strategies work across different subjects, class sizes, and cultural settings, providing more targeted guidance for creating supportive competitive environments in secondary education.

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