

## ORIGINAL ARTICLE

# Constructing and refining a model of antecedent mechanisms of parental educational anxiety in the context of General and Vocational Segregation: A mixed study based on an exploratory sequential design

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## ABSTRACT

General and vocational education segregation at the high school level has long been a hot topic in China's education system. To contribute to addressing parental educational anxiety in such a context by enhancing its causal mechanism model, this study utilized an exploratory time-series research design and a mixed research method. Initially, in-depth interviews were conducted, followed by coding analysis. They revealed that parents' educational anxiety is characterized by "insufficient information and elevated anxiety", and its main factors were identified as the parents' level of policy understanding, environmental modeling, family support, and perception of educational fairness. A questionnaire was then created to investigate educational anxiety as a variable, and the results were analyzed using fuzzy set qualitative comparative analysis to conduct a configurational analysis. Parental educational anxiety was categorized into three fundamental modes: the policy-information-driven mode, the information-consumption-driven mode, and the subject-information-driven mode. The results of the analysis indicate that the level of parents' understanding of educational policies influences their educational anxiety level, their orientation on media communication affects their recognition of the educational ecology, and their image of vocational education exacerbates their internal anxiety.

**Key words:** antecedent mechanism, exploratory sequential design, fuzzy set qualitative comparative analysis, general and vocational education segregation, mixed research, parental educational anxiety

## INTRODUCTION

The junior high school entrance examination and vocational school enrollment in China offer various paths for students with different abilities and interests, signifying the start and the crucial turning point of their educational journey.<sup>[1]</sup> The *Vocational Education Law*, implemented in May 2022, places strong emphasis on the equal importance of vocational education and

general education.<sup>[2]</sup> This clarifies, from a legal standpoint, that vocational education and general education are distinct but equally significant forms of education. Nevertheless, despite vocational education's real-world application, many parents often perceive it as inferior to general education. This perception overlooks the unique educational value of vocational education in nurturing technical and skilled talents and leads parents to feel anxious when their children pursue it.

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In the current era of educational development and the evolving general-vocational education structure. This study attempted to bridge this disparity between the policy and public perception by investigating. This study delved into the distinct signs of this anxiety and its underlying reasons to offer guidance and insights into addressing it. Additionally, this study sought to meet the practical need to enhance educational welfare in the present period of educational diversification.

## LITERATURE REVIEW

Anxiety is an unsettling emotion that arises in individuals when their sense of value is under threat.<sup>[3]</sup> It is intertwined with the individual's survival and social standing. In the context of education, educational anxiety is a phenomenon that is widespread and deeply rooted in the current educational development landscape.<sup>[4]</sup> It primarily stems from the increasing demand for high-quality educational resources and the limited availability of these resources due to their relatively inefficient distribution. This scarcity of resources is a primary cause of parental educational anxiety.

Educational anxiety is also caused by the structural contradictions between learning periods,<sup>[5]</sup> educational types, and subjects, as well as by the qualitative contradictions driven by the continuous pursuit of a superior educational vision.

Educational anxiety can further manifest as the gradual transition of personal anxiety from existential concerns to concerns about social status. When individuals compare themselves with other groups, they are prone to experiencing an imbalanced sense of "upward envy and downward fear". If they perceive a threat of being at a disadvantage in the competition for educational resources or anticipate an inability to maintain a sufficient advantage in educational transmission, they will seek a more ample space for educational development and pursue new educational platforms, thus succumbing to the "reference group effect".<sup>[6]</sup> As a result, educational authorities will feel the dual pressure of the scarcity of educational resources in reality and the inadequacy of parents' subjective judgment in comparing available educational resources, which leads them to feel educational anxiety. Additionally, educational anxiety reflects the tensions between the continuity and innovation of culture, the nurturing of free and adaptable individuals during the transitional phase of social education, and the fulfillment of societal expectations.

From the perspective of social exchange theory, educational anxiety can be transmitted among individuals who are interacting in educational activities, such as students, teachers, and parents, in varying degrees, and may even have a cumulative effect.<sup>[7]</sup>

However, the psychological state of education is closely tied to parental educational expectations. Parents are typically more attuned to the educational process and outcomes. They not only monitor students' academic performance but also engage in various educational activities, such as selecting related parenting styles and managing schools.<sup>[8,9]</sup> Parental educational anxiety refers to the tense and worried emotional state and physiological discomfort reactions experienced by parents during the uncertain educational process and outcomes of their children.<sup>[10-12]</sup> This process highlights the interactive nature of anxiety between parents and children,<sup>[13]</sup> a sense of helplessness in the anxiety process,<sup>[14]</sup> the stress response to anxiety, and the variability of anxiety outcomes.<sup>[15]</sup>

Excessive parental educational anxiety can result in impulsive educational behaviors and consequences: parents may interfere with their children's educational choices based on their authoritative status,<sup>[16]</sup> overlook their children's educational participation, enforce their children's growth without regard for educational development laws, and create conflicts.<sup>[17]</sup> When regular classroom educational activities fail to meet parents' educational expectations, they may seek educational alternatives through non-institutional market organizations,<sup>[18,19]</sup> which, in severe cases, may disrupt the normal educational ecosystem.

Various factors influence these irrational educational behaviors. Yin *et al.* think "high expectations do not necessarily result in high anxiety, but significant deviations expectations can lead to high parental educational anxiety".<sup>[15]</sup> However, parental educational expectations may be biased due to the parents' social background and educational values.<sup>[20]</sup>

Furthermore, parental anxiety about education is becoming increasingly noticeable amid the commercialization and economic marketing of education<sup>[4]</sup> within today's market-driven social environment.<sup>[21]</sup> That is, commercialized educational capital continuously generates education-related anxieties among parents,<sup>[22]</sup> causing them to increase their children's educational consumption to excessive levels and to make inefficient educational investments for their children.<sup>[4]</sup> It is important to highlight that certain researchers have focused on a particular education policy's specific stimulating effect on educational anxiety.<sup>[23,24]</sup> They have pointed out that in the attention economy, and information media can deliberately fuel economic anxiety and a desire to compare oneself with others,<sup>[25]</sup> which can make parental educational anxiety a negative social attitude.

The entrance examination for junior high school in China also causes parental educational anxiety. The exam serves as an evaluation of the performance of the nine-year compulsory education for students. It also

presents a crucial opportunity for students to select the most suitable education path for themselves. Throughout this process, the structure and proportion of the categorization of education into academic and technical education under General and Vocational Segregation significantly shape the developmental trajectory of junior high school students and impact the emotions of their parents.

A significant impediment to parental comprehension of the differences between general and vocational education is the contemporary societal cognitive bias against vocational education, characterized by the undervaluing of vocational education, the underestimation of vocational skills, and the narrow-minded perception of success as founded on academic education rather than vocational education.<sup>[26]</sup> Parents are expressing concerns about their children being directed toward vocational education, and the deliberate or unintentional use of various media channels to achieve this perceived goal is heightening parental distress.

While prior research has often attributed educational anxiety to parental educational beliefs,<sup>[27]</sup> market stratification within education,<sup>[28]</sup> and other factors, insufficient attention has been given to the distortion of educational information and its impact on shaping parental educational psychology. This study primarily examined the manifestations of parental educational anxiety within the policy framework of separating general from vocational education, and the factors that influence such anxiety.

In particular, this study investigated whether a group of parents of junior high school students, who were affected by the policy of general and vocational education separation, experienced increased anxiety from such a policy and, if parental educational anxiety spreads in this context, what would be the characteristics of such an anxiety and what factors could influence its emergence.

In the absence of a well-established theoretical framework, comprehensive questionnaire tools, and clearly defined research variables for a study,<sup>[1]</sup> it is advisable to start with qualitative research in order to gain an understanding of the pertinent issues, variables, and theories that require further study.<sup>[29]</sup> Subsequently, quantitative research can be employed to validate, enhance, and evaluate the findings from the initial qualitative exploration. Thus, in this study, an exploratory sequential mixed methods research design was used.<sup>[30]</sup> This approach employs a "qualitative before quantitative" research method that initially systematically explores the variables and hypotheses of influencing factors using qualitative reasoning and, subsequently, analyzes, tests, and enhances the qualitative research

findings using quantitative methods.<sup>[29]</sup> In this study, in-depth interviews were conducted to comprehend parental educational anxiety; and from the qualitative data, the manifestations and primary causes of such anxiety were extracted using grounded theory. Subsequently, a questionnaire survey was conducted to collect data, and the collected data were analyzed using fuzzy set qualitative comparative analysis (fsQCA) to construct a model of configurations of high parental educational anxiety that elucidates the interaction mechanisms among the causes of such anxiety from quantitative data, thereby supplementing and expanding the qualitative data.

## METHODS

### *Data collection*

Initially, semi-structured interviews were conducted. The interviews intend to solve some basic questions such as "Are you experiencing anxiety regarding your child's academic performance?", "How does educational anxiety affect your educational behavior?", "What are your thoughts on the policy of separating students into academic and vocational tracks, and how did you become aware of it?", and "What factors shape your approach to education?". Additional questions and answers were incorporated as required during the interview session.

The interviewer initiated the interviews by first conducting comprehensive interviews with two parents of junior high school students, in order to have an outline for our interviews. Then, the interviewer conducted thorough interviews with 18 parents of junior high school students, continually refining the interview content to optimize the value of the information gathered. Thus, a total of 20 parents of students in the 7<sup>th</sup> to 9<sup>th</sup> grades were interviewed, with each interview having a median duration of 60 min. The demographic characteristics of the interviewees are as follows: 7 male and 11 female; 2 public servants, 3 private-sector employees, 3 professionals (*i.e.*, two lawyers and a doctor), and 10 others; 5 individuals aged 40 or younger, 5 aged 41-45, 5 aged 46-50, and 3 individuals aged 51 and above.

### *Data analysis*

The data from the interviews were analyzed based on grounded theory. Grounded theory challenges the conventional research paradigm by utilizing empirical data to construct theory from the bottom up,<sup>[31]</sup> in contrast to prior large-scale research. In this study, the NVivo software was utilized to code the interview outputs in order to extract both the explicit manifestations and the underlying causes of parental educational anxiety within the context of general and vocational

education segregation.

Coding facilitates the acquisition of fresh perspectives on data and can steer the researcher toward unexplored avenues.<sup>[32]</sup> In this study, it was performed at three levels: (1) open coding, the attributes and dimensions of the collected data were comprehended, deconstructed, integrated, and ascertained, after which conceptual labels and categories were created; (2) axial coding, diverse connections among conceptual categories were uncovered and established, and from the main categories, interaction strategies and causal relationships were extracted; (3) selective coding, all the coding results were outlined, relevant phenomena were comprehensively summarized, and the overall integrity and reliability of this study were guaranteed. This three-layer coding progressed systematically, with a focus on each layer, and culminated in a comprehensive summary of the manifestations and influencing factors of parental educational anxiety.

#### *Open coding*

The initial organization of raw data is referred to as open coding. The researchers label the data based on their analysis and interpretation of the raw data, sentence by sentence, according to semantic units. In this study, after the parents were interviewed and after the interview outputs were comprehended, deconstructed, integrated, and ascertained were integrated, the following 12 categories were identified: policy awareness, policy impact, financial support, education equity, cultural support, academic achievement, resource allocation, stimulus-driven consumption due to anxiety, pressure from competition and comparison, future development, educational stress, and perception of vocational education (Table 1).

#### *Axial coding*

Axial coding involves logical comprehension and clustering analysis of data using open encoding techniques. In this study, at this coding level, the diverse connections among the conceptual categories were uncovered and established, and from the main categories, causal relationships and interaction strategies were extracted and clustered. This operation can be further classified into five major dimensions: policy awareness, family support, education equity, information dissemination, and anxiety manifestation (Table 2).

#### *Selective coding*

Selective coding refers to the extraction of essential concepts from the central axis of the axial coding. These core concepts are logically and analytically related, thus creating a structured theoretical framework. In this study, the selective coding results were based on the analysis of the open coding and axial coding results,

showing internal coherence (Table 3).

### **Theoretical saturation**

Following the principle of theoretical saturation, two randomly selected data pieces were used to test for theoretical saturation. For example, an interviewee's statement that "watching various videos every day makes me feel that other people's children are better, but my own child never learns well, so I'm really worried about him" can fall under the open code "Stimulus-Driven Consumption Due to Anxiety", which was examined in the sample set aside for this purpose. No additional conceptual category or logical perspective emerged, indicating that the coding had reached theoretical saturation and was therefore discontinued.

## **RESULTS INTERPRETATION AND MODEL CONSTRUCTION**

### ***Characteristics of parental educational anxiety: "insufficient information and elevated anxiety"***

#### *Insufficient educational information leads to cognitive distortions*

In China, few parents are genuinely concerned about the allocation of educational resources in the context of basic fairness. Much anxiety stems from a lack of policy information, leading to concerns about conformity and participation in the competition for education. This low-density policy information is primarily evident in the restricted ability to disseminate information and the inadequate impact of policy information.

The dissemination of China's policies is relatively basic, mainly relying on official media for simple delivery, rather than engaging comprehensively with the public through various platforms. Consequently, a lasting and highly interactive connection with the public has not been established, resulting in a lack of attention to public sentiment in information dissemination. This can easily lead to imbalanced information sharing, where information is unilaterally dependent, causing an unequal distribution of information. The public's absorption and comprehension of policy information is limited, "directing vocational education for the bottom 50% of students", as a parent said. This instills fear in parents that their children will be directed toward less favorable educational paths. Thus, many parents strongly encourage or even pressure their children to study diligently, hoping that their children will not have to follow in their footsteps and pursue careers as "workers" or "laborers".

The second problem is the failure of the dissemination of the policy to effectively direct parents' attention toward the relevant educational values and develop-



**Table 1: Open coding examples**

Raw data	Conceptualization	Categorization
When my child [was] in junior high, I attempted to leverage my connections to facilitate his enrollment in a city school. Despite my efforts, he expressed resistance, leaving me powerless as a parent. My intentions stemmed from the substantial discrepancy in educational resources between rural and urban areas, with city teachers often excelling in various aspects. Ultimately, I acknowledged the futility of coercion when met with my child's reluctance. (S2)	Urban and rural conditions differ	Resource allocation
Even in our city, the classes are categorized into fast and slow classes, [with] the fast classes ... taught by skilled teachers and the slow classes [taught] by teachers with average skills. This is not unique to big cities. (S89)	The class is incredibly awful, beyond imagination	
How can I prevent myself from experiencing anxiety? [Teachers] and various institutions have posted information [on our] parent group every day, all of which [emphasized] the excellence of their services. While I have always reassured my child that I am not anxious, observing the remarkable progress of other children over time can lead to occasional feelings of inadequacy regarding my own child. How can I address this? (S14)	Information anxiety	Stimulus-driven consumption due to anxiety
Anxiety is inevitable, [and] pretending not to be anxious is insincere. Our village's "big mountain" [a tutorial institution] frequently promotes its services in our homes. [No matter how financially strained we may be], it is necessary [for us] to invest in education for our children ... (S85)	Educational institution-driven consumption	
There is a single child in the family. Who wouldn't desire the child to thrive? One's own retirement will rely on the child in the future. One should offer all the support the child is eager to receive in order to learn, so should we call education ... a burden? (S47)	Not hesitant to take on the educational burden	Educational stress
It's quite a challenge for me. I have two sons at home, with the elder already attending college and the younger still in school. Both of them rely on me for financial support. The younger one intends to continue his education for as long as possible. Additionally, I am aging, and my occupation involves physical work. Given my current good health, I am willing to take on additional work to support their educational needs. (S21)	Heavy burden	
I am unable to afford a house in a good school district. Unlike others who may have a nice job, I am an insurance sale rep. To be frank, it's so hard for me to buy a house in the city with [a] good school nearby. (S92)	The demand for housing in the school district is substantial	
Our daughter ... completed the junior high school entrance examination, a teacher visited our home to persuade her to pursue vocational education. Deep down, we were aware that the teacher was involved in corrupt practices by taking rebates from the vocational school. Additionally, we couldn't overlook the caliber of the vocational education instructors. However, it was undeniable that it was our daughter who did not pass the exam. (S142)	The teacher convinced her to enroll in vocational education	Perception of vocational education
Students in vocational schools often appear to be idling, without much pressure, as teachers at the school do not closely monitor them. Many parents hope to steer their children away from vocational schools and, instead, encourage them to attend higher-quality institutions. (S19)	The competition is minimal, and the teacher is indifferent	
The children are too young to determine their aptitude. Vocational education may not be as effective as claimed. Despite the emphasis [of vocational schools] on [their students'] personal growth, [their graduates] still face social stigma [chuckles]. (S63)	Attending the vocational high school is "losing face" (shameful)	
Vocational education students often underestimate themselves. (S47)	Vocational education students often feel that "they are not as capable as their peers"	
Students focus on professional courses instead of liberal arts, such as the agricultural studies [that] I [pursued], which seem to have little practical value. Taking such courses feels like a waste of time. (S83)	The course lacks practicality	

S, student.

**Table 2: Axial coding**

Subordinate category	Main category
Policy interpretation	Policy awareness, policy impact
Family support	Financial support, cultural support
Sense of educational fairness	Educational fact, educational judgment
Simulated environment	Information processing pressure, media guide, anxiety trafficking
Anxiety manifestation	Academic achievement, future development, educational stress

mental vision, and to assist them in forming the right parenting perspectives. The scope and impact of the policy remain inadequate. Some parents have a limited understanding of what constitutes growth and success.

They tend to assess their children's achievements and educational attainment solely through their academic performance. Their mindset on success revolves around the idea of acquiring what others lack and attaining more

Table 3: Selective coding

Core coding	Axial coding	Open coding
Policy stimulus	Policy interpretation	Policy awareness, policy impact
Qualification of an intermediary agency	Family support	Financial support, cultural support
	Sense of educational fairness	Educational fact, educational judgment
	Simulated environment	Information processing pressure, media guide, anxiety trafficking
Behavior Rresult	Anxiety manifestation	Academic achievement, future development, educational stress

of what others possess. While parents desire success for their children, this mindset unfortunately results in a sense of inadequacy for some children. Parents try to circumvent the possibility of their children's educational underachievement by solely prioritizing good grades and engaging in the competitive pursuit of educational resources. Parents' lack of exposure to alternative educational approaches, coupled with their singular focus on academic achievement and success, constantly fuels and heightens their anxiety.

*Socialized and elevated educational anxiety*

Elevated levels of socialized educational anxiety are evident at every stage of the education cycle, stemming from shortsighted educational philosophies, passive learning methods, and uncertain academic results. In educational philosophy, the influence of education on shaping individuals is seen as deep and subtle, indicating that the rewards of education are expected to manifest gradually. Nevertheless, parents investing in education, as logical individuals, naturally expect to see immediate returns and benefits for their family to some degree and may even seek instant gratification. Thus, numerous parents seek out the most current and popular educational theories and approaches without fully considering their children's individual needs. They often prioritize the external, materialistic aspects of education despite evidence that physical educational infrastructure does not ensure education quality. As a result, these parents may insist on enrolling their children in schools with impressive facilities, overlooking their children's internal developmental requirements. This blind and passive nature of these parents' educational choices leads to a lack of systematic education investment, making it difficult for educational institutions to conduct sustainable and high-quality educational activities.

In terms of educational outcomes, modern society continues to subscribe to the notion that "nothing is as noble as academic achievement", one of the interviewed parents said. Education is seen as serving the purpose of facilitating upward social mobility and preserving family wealth. Although many parents may seem to prioritize their children's academic performance, their true concern is their children's future career opportunities. While they may express worries about the type of

education that their children pursue, deep down, their apprehension centers on the social status of the children determined by their children's future employment. A parent voiced this common sentiment: "I want my child to pursue higher education and strive for a doctoral degree, [as] obtaining only a college degree will relegate them to a lower class". In reality, education is influenced more by self-imposed factors than by innate ones. While there are instances when social mobility is achieved through education, there are also cases in which family resources are diluted due to educational investments. The unpredictable nature of educational outcomes leads parents to place significant importance on educational activities.

In summary, parental anxiety about education is widespread. The anxiety related to education is a reflection of the broader societal unease in the field of education. Its effects are observed in the education system but have external sources. This necessitates thorough and suitable policy modifications.

***Underlying mechanism of parental educational anxiety***

*Sense of educational inequity*

In China, there is a significant issue of unequal distribution of education resources between urban and rural areas, as well as among different regions. Parents, driven by the fear of their children falling behind, have sparked a growing trend in early childhood education. To ensure an advantage for their children at the outset, they feel compelled to invest in expensive homes in prestigious school districts. Moreover, they prioritize fair distribution of educational resources based on not only geographical access but also the equitable availability of renowned teachers and educational influencers. Thus, they are inclined to seek education from distinguished educators. This competition among parents for high-quality educational resources is influenced by economic factors, social connections, and even luck. Parents who are less fortunate will undoubtedly grapple with feelings of frustration, exhaustion, and hopelessness during this competition, impacting their physical and mental well-being.

However, although the unequal distribution of high-quality educational resources presents a significant

challenge in educational development in China, parents' subjective perception of resource scarcity caused by competition and ranking is what truly fuels their anxiety about education. They tend to unconsciously amplify the perceived scarcity of educational resources during the education process,<sup>[33]</sup> leading to a self-induced panic: "Not good enough, cannot relax. Even though my child is currently excelling, students in provinces should have access to more abundant resources and better conditions. My child's performance is still far from adequate". This makes parental educational anxiety challenging to alleviate.

In addition, the concept of educational equity pertains to the psychological impression that individuals form when considering the concept of fairness in education. It aligns with the objective reality of educational fairness while also displaying asymmetry.<sup>[34]</sup> Parental perspectives and decisions regarding education are shaped not only by the objective fairness of the system but also by the parents' personal subjective assessments of educational realities derived from their own experiences. The unequal distribution of resources and the even more uneven allocation of those resources reflect the psychological imbalance of modern parents in education. Although the unequal distribution of high-quality educational resources presents a significant challenge in educational development, parents' subjective perception of resource scarcity caused by competition and ranking is what truly fuels parental anxiety about education. Parents tend to unconsciously amplify the perceived scarcity of educational resources during the education process,<sup>[34]</sup> leading to a self-induced panic, as shown in the following statement of a parent: "Not good enough, cannot relax. Even though my child is currently excelling, students in provinces should have access to more abundant resources and better conditions. My child's performance is still far from adequate". As a result, parental anxiety about education is challenging to alleviate.

### *Family support*

Parents are willing to expend all possible efforts to support their children's education provided that doing so is financially feasible for their family. Parents' financial investment in education exhibits variability and can typically be categorized into three types.

Type 1 is the more prevalent blind and passive type, in which parents provide all of their children's educational needs. Regardless of the level of economic support that their family can provide under objective conditions, as one parent said: "We will give the child whatever he needs". Parents who practice blind educational investment may make random and unquestioning investment decisions, driven by their competitive mentality, that may later turn out to be unnecessary. Thus, they are more prone to anxiety.

Type 2, known as the single-purpose type, involves a more targeted approach to educational investments than the blind and passive type. Under this type, parents make educational investments to enable their children to achieve high scores. Thus, their investment in education is extremely purposeful and practical. Some parents may adopt a more progressive attitude toward education and be willing to facilitate their children's involvement in artistic pursuits and hobbies, but if these pursuits start to impact their children's academic achievement, they may be viewed as discretionary. For example, one parent said: "She likes dancing, so I let her learn to dance, and she can be an art student as long as she can keep excelling in her studies. If her grades are affected because of dancing, then it won't work. For now, [though] it's better [for her] to learn her culture classes first and get into a good high school before [pursuing her] hobbies".

Type 3 falls under the scientific and orderly type. Parents in this category acknowledge the importance of varied development for their children. They are somewhat open to the long-term impact of investing in their family's educational capital and to the unpredictability of educational results. However, amid intense educational competition, this rational minority of parents may also experience feelings of powerlessness and doubt regarding the appropriateness of their educational decisions.

Cultural support for children builds up subtly and unnoticeably primarily within the family environment, contributing to the accumulation of cultural capital. Parents' cultural influence and approach significantly shape the future of their children, exerting a hidden yet profound impact. The enduring traditional division of labor in the family, where men mainly focus on work outside the home, and women, on domestic responsibilities, persists in modern society. This is evident in the primary role of mothers in guiding children's studies and managing their daily lives, resulting in educational activities showcasing mothers' participation and fathers' absence.

Notably, parental understanding of educational investment adequacy is not based solely on the amount of their financial or cultural support but also on how sufficient they think their investment is compared to that of other parents. As each family's economic and cultural capital is not always evident visibly, some parents imagine the "mysterious" capital of other families, which makes them even more concerned about their own perceived lack of family investment.

### *Simulated environment*

The term simulated environment denotes an information environment that effectively influences social control, impacting people's cognition and behavior to some degree.<sup>[35]</sup> Simulated environments have a significant impact on parental educational

attitudes, which is primarily evident in three aspects.

The information explosion amplifies the burden of processing information, consequently influencing parents' comprehension of pertinent educational information. In the interviews in this study, most of the parents evidently obtained educational information from the Internet. The convenient online environment facilitates access to a wide array of strategic educational knowledge. However, today's parents often find themselves in a state of "information confusion". This can be attributed to their lack of parenting experience and their inability to discern information, as well as to the media's prioritization of content that generates traffic profits rather than transmits value. Media channels frequently distribute biased and sensational content to maximize the stimulation of parental emotions and thereby increase their traffic profits. Media influence also shapes the educational attitudes of parents. The media's interpretation of social facts goes beyond simple reflection. As did the individuals in Plato's cave, people depend on the media as a light source to understand external information. Furthermore, various forms of online information occupy people's fragmented time, contributing to growing dependence on the media, which enhances the media's power to shape and influence people's lives. In contemporary society, in which the information superhighway is not yet fully developed, those who dominate the digital realm have a significant influence on individuals' perceptions of the real world.<sup>[36]</sup> Parents, motivated by the abundance of success stories online, aspire to emulate the achievements of others, seeking validation and recognition of their own values as caregivers. However, while individuals utilize these simulated environments to comprehend and perceive society, they simultaneously contribute to the formation of a new social ambiance, unknowingly amplifying the prevalence of anxiety. As the media excessively emphasizes the importance of reaching developmental milestones and exaggerates success stories, parents are prompted to immerse their children in relentless and irrational educational pursuits. As a result, parents themselves fall victim to the pressures of the education "theater effect", fueling their fear of academic failure and driving them to proactively invest more in the ever-escalating cycle of educational competition. Unintentionally, this intensifies the educational anxieties of others. Amid these futile cycles of mounting competition, parents find themselves grappling with a profound sense of "losing control" of their children's education.

#### *Policy information stimulus*

Parental educational anxiety exhibits a degree of consistency and social influence within its domain, however, it can transition to a situational state in response to particular educational occurrences. Most

parents have high hopes for their children's education, yet they also acknowledge the significant disparity<sup>[15]</sup> between their aspirations and the actual situation. The implementation of the general and vocational education segregation policy has heightened parental concerns about education, adding an institutional dimension to their anxieties.

In this regard, the level of parental anxiety is influenced by the parents' comprehension of the educational policy. The more the parents' educational beliefs and policy preferences overlap, the better their grasp of the policy is and the less likely they are to be anxious about accompanying educational reforms.<sup>[37]</sup> However, differences in parents' comprehension of General and Vocational Segregation have resulted in their diverse attitudes toward it. Some of them understand the policy only literally, thinking that, as a parent said, "half of the students go to regular high school, and half go to vocational schools". They may even mistakenly perceive it as "screening out some students and forcing them into vocational education without allowing them to continue their academic studies", another parent said.

These cognitive challenges stem from a communication environment in which parents struggle to interpret policies. Parents' phrases such as "I saw it on Tiktok" or "the cram school teacher told me" indicate a policy communication focus on merely gaining attention and on commercialization. This has led to fragmentation of the policy content and has influenced parents' educational decisions.

Moreover, the policy essentially reflects a distribution of interests, catering to students with varying academic achievements. Different educational policies have varying impacts on stimulating parental educational psychology at the same time. Adjusting policies to favor different interest distributions may lead to profound educational anxiety among the parents of disadvantaged students. In the case of the general and vocational education segregation policy, the parents of the students who consistently ranked at the top of their classes academically were not directly affected emotionally, as a parent said: "it doesn't have much impact, he has always been one of the top performers in exams". However, the parents whose children's academic performance was unstable or in the middle to lower range tended to question why the policy was formulated. Nevertheless, their decisions were often influenced by traditional culture and societal talent evaluation. They might have believed that it is acceptable for other children to attend vocational high school, but they insisted that their own children should attend a regular high school in preparation for college. Furthermore, the policy somewhat heightened the concerns of some parents. They were worried about the allocation of quotas,



mentioning issues such as "behind-the-scenes manipulation" and "rent-seeking of power", and about the fairness and impartiality of the implementation process.

### ***Mechanism model of parental educational anxiety in the context of general and vocational education segregation based on fsQCA***

This study established the "mechanism model of parental educational anxiety in the context of general and vocational education segregation" (Figure 1). The model showed that different parents had varying interpretations and assessments of the realities of educational equity. Their perspectives were influenced by exposure to diverse media messages and marketing influences, as well as by their varying levels of information processing. Furthermore, families provided varying levels of economic and cultural support to students, which are long-term factors that impacted parents' educational attitudes. The parents, fueled by information on the general and vocational education segregation policy experienced varying degrees of anxiety regarding their children's education and academic results, reflecting the social nature of parental educational anxiety.

### ***Research methods***

The quantitative research section of this paper thoroughly complements the section on the grounded theory results, providing a comprehensive examination of the interrelationships among the causes of parental educational anxiety in the context of general and vocational education segregation. The earlier qualitative research section of this paper identified factors that contribute to parental educational anxiety in the relevant context. However, to fully understand such anxiety, it is essential to determine whether certain factors are indispensable for influencing its formation. This calls for collective thinking. Qualitative comparative analysis (QCA) examines cases holistically using techniques such as set theory and Boolean algebra. It is categorized into crisp-set QCA, multi-value QCA, and fsQCA, based on the variable types. Of these three categories, fsQCA is capable of handling categorical, degree of change, and partial membership issues.<sup>[38]</sup> This study primarily utilized fsQCA to examine varying degrees of parental educational anxiety rather than simply categorizing it as "existent or non-existent".

### ***Data collection***

This stage was implemented primarily through a questionnaire survey that was administered online. The dimensions of parental educational anxiety were developed based on the results of a qualitative study to formulate measurement indicators. These measurement indicators are closely related to the elements of the

model building in Section 4.2, including policy understanding, mimetic environment, family support, and a sense of educational fairness. Then, the following 10 indicators were analyzed based on the specifics of the interviews: educational anxiety, policy awareness, policy impact, information processing pressure, media guide, anxiety trafficking, financial support, cultural support, educational fact, and educational judgment. Specifically, educational outcomes for educational anxiety and policy understanding consist of policy perceptions and policy impacts; mimetic environments consist of information processing pressures, media guidance, and anxiety trafficking; family support consists of economic support and cultural support; and a sense of equity in education consists of educational facts and educational judgments. The questionnaire consisted of 22 five-point-scale items and encompassed control variables, such as demographic characteristics and behavioral traits, including education level and monthly income. The overall reliability of the questionnaire was 0.891, which is good; the Kaiser-Meyer-Olkin (KMO) of the questionnaire was 0.885 and the significance was less than 0.05; and the questionnaire had good validity. The survey respondents were from diverse parent groups with varied economic and cultural backgrounds to ensure the sample's representativeness. Random sampling was utilized. A total of 356 questionnaires were returned primarily from two junior high schools in Henan and one junior high school in Shaanxi, of which 312 were deemed valid,<sup>[1]</sup> amounting to an effective recovery rate of 87.64%.

### ***Variable determination and calibration***

The selection of variables during fsQCA directly influences the composition and effectiveness of the research conclusions. QCA prioritizes the examination of the interconnectedness of the variables. As the number of variables increases, the number of their possible combinations will grow exponentially. Hence, when making selections, it is crucial to carefully consider a restricted set of potential variables. Considering the context of general and vocational education segregation, a total of 1 outcome variable and 10 predictor variables were identified for the parental educational anxiety model. The direct method was employed to calibrate the variable data, setting the fully affiliated, middle-value, and completely unaffiliated calibration points of the variables at the 0.75, 0.50, and 0.25 quantiles of the sample data, respectively. Table 4 shows the calibration and interpretation of each variable.

### ***Configuration analysis results***

#### ***Results of the analysis of the necessity of a single condition***

Necessity analysis involves examining how the combination of results forms a subset of the conditional

**Table 4: Variable determination and calibration**

Result variable	Condition variable	Unaffiliated value point (0.75)	Median value (0.5)	Completely unaffiliated (0.25)	Explanation
Anxiety results	Educational anxiety	5.67	4.89	3.01	Level of parental educational anxiety
Policy interpretation	Policy awareness	5.78	4.93	2.78	Policy-related groups have differing inclinations and interpretations of educational policies, influenced by their inherent values, complex environments, and behavioral inertia
	Policy impact	5.89	4.99	2.98	Education policies have a direct impact on the strength of parents' educational emotions and can guide parents' educational behavior to a certain extent
Simulated environment	Information processing pressure	5.78	4.99	2.67	Parents encounter a wide range of intricate educational information, necessitating the ability to distinguish and comprehend pertinent educational messages within a specific cognitive capacity
	Media guide	5.47	4.32	2.01	Some news media prioritize targeting specific user groups due to their traffic positioning and capital attraction needs. This preference may result in certain parent groups being left in an "information desert"
	Anxiety trafficking	5.93	4.84	4.01	Some educational institutions may intentionally manipulate educational information to exploit parents' concerns and encourage anxious behavior in order to maximize their own profits
Family Support	Financial support	5.79	4.98	2.78	The extent of the material investment made by families in their children's education
	Cultural support	5.89	4.52	2.03	The cultural environment shaped by parents, including their companionship and level of education, greatly influences children's development
Sense of educational fairness	Educational fact	5.78	4.99	2.99	There are factual disparities related to educational resources, academic levels, and learning conditions in education
	Educational judgment	5.78	4.67	3.67	Education policies produce varying results when implemented with students from different backgrounds. The policy interpretations of different interest groups vary, even with the same educational policy in place

set to a certain degree.<sup>[39]</sup> Consistency is an important indicator of necessary conditions. The general consensus is that a minimum consistency score of 0.9 is required to identify the necessary conditions. This means that if the consistency of a specific conditional variable exceeds 0.9,<sup>[40]</sup> it is deemed to be a necessary condition for yielding the outcome. The results of the necessary condition analysis on the level of parental educational anxiety using the fsQCA software are presented in Table 5. Table 5 indicates that the consistency level of all the conditions was below 0.9. Thus, parental educational anxiety was not necessarily affected by specific conditions.

### *Results of analysis of the sufficiency of the conditional configurations*

The core of the QCA method lies in the analysis of the sufficiency of configurational conditions. It primarily examines the sufficiency of various configurations of antecedent conditions for the outcome.<sup>[40]</sup> This study employed fsQCA to explore how different variables collectively contribute to parental educational anxiety. The study sets the number of cases to 1 and the consistency threshold to 0.8, and the results of the configurations are presented in Table 6. To further

confirm the reliability of the configuration analysis results, the initial consistency threshold was raised to 0.9 while maintaining the other parameters constant. The consistency, coverage, overall consistency, and overall coverage of each configurational pathway exhibited no notable changes, suggesting that the research findings are highly interpretable.

### **Results of inductive analysis of the theoretical models**

From the six identified configuration paths in the configuration analysis results, the following three theoretical models were derived.

#### *Policy-driven model*

The information mode driven by policy primarily consists of two configurations: configuration 1, which involves policy impact, media guidance, and educational assessment, and configuration 6, which involves policy impact, information processing pressure, media guidance, economic support, and policy cognition. Both configurations are anchored in policy impact and media guidance as the fundamental criteria. The lateral-entry parents had varying perspectives and levels of support for the policy of segregating general and vocational

Table 5: Analysis of necessity

Calibrated variables	Educational anxiety (JYJL)	
	Consistency	Coverage
Policy awareness	0.704675	0.804584
Non-policy awareness	0.629521	0.667441
Policy impact	0.690563	0.809860
Non-policy impact	0.626260	0.648089
Educational factor	0.729082	0.758256
Non-educational factor	0.578720	0.674905
Educational judgment	0.721491	0.785314
Non-educational judgment	0.575664	0.639426
Data processing	0.712523	0.772983
Non-information processing	0.625189	0.696802
Media guide	0.801894	0.677895
Non-media guide	0.458880	0.721404
Anxiety trafficking	0.685365	0.796010
Non-anxiety trafficking	0.587281	0.613021
Financial support	0.655761	0.781467
Non-Financial support	0.652705	0.666113
Cultural support	0.728318	0.724920
Non-cultural support	0.571129	0.701353

JYJL, jiaoyu jiaolv.

Table 6: Conditional configurations of different variables of elevated educational anxiety

Conditional variables	1	2	3	4	5	6
Policy awareness	O	⊗	O	O	-	⊗
Policy impact	O	O	O	O	O	O
Educational Facts	O	O	O	O	O	O
Educational judgment	⊗	⊗	O	⊗	O	O
Information processing pressure	O	O	-	O	O	O
Media guide	O	⊗	O	O		O
Anxiety trafficking	O	O	⊗	O	O	O
Financial support	-	⊗	O	O	-	O
Cultural support	⊗	⊗	⊗	⊗	⊗	⊗
Raw coverage	0.222256	0.142835	0.276148	0.264498	0.238261	0.240591
Unique coverage	0.0221344	0.00835735	0.0615408	0.0211214	0.0114977	0.0138783
Consistency	0.971012	0.948537	0.956491	0.948248	0.975529	0.973361
Solution consistency	0.878013					
Solution coverage	0.938644					

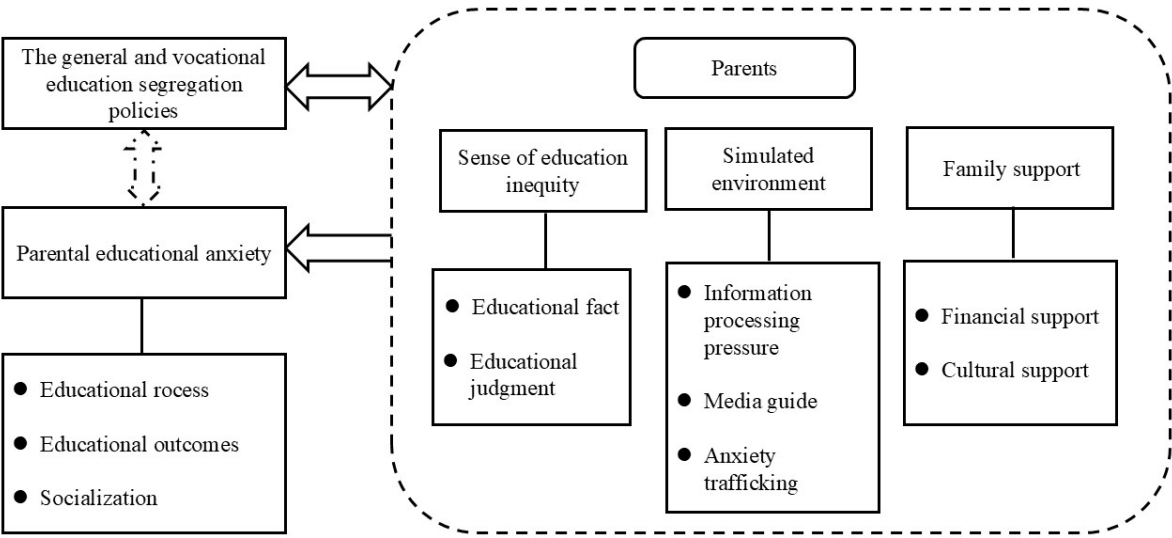
O, the core condition exists; ⊗, the borderline conditions are missing; O, the core condition exists; ⊗ the borderline condition exists; The unmarked portion signifies no impact on the result.

education. This model shows that the policy notably shapes the educational path chosen by junior high school students and has a substantial impact on the educational decisions and behaviors of their parents. However, in the current age of information, certain media platforms strive to capture the public's interest to boost their platform traffic, often resorting to one-sided deconstruction or even malicious misrepresentation of positive government policies. Consequently, parents may

struggle to grasp the true intent behind education policies, consequently finding themselves engulfed in an "anxiety whirlpool".

Information-consumption-driven model

The information-consumption-driven model mainly consists of configuration 2 (education trafficking, policy awareness, education judgment, and cultural support) and configuration 5 (policy impact, educational facts,



**Figure 1.** Mechanism model of parental educational anxiety in the context of the dissemination of the general and vocational education segregation policy.

and anxiety trafficking), with education trafficking being the driving force behind parents' educational anxiety. The widespread use of the internet has eliminated the constraints of time and location in spreading information. In the dissemination of policy information, the volume of information has emerged as a crucial factor, as detailed information speeds up the consolidation of policy updates. However, in today's commercial environment, consumerism contributes to the amplification of unfavorable educational public sentiments, while social anxiety intensifies emotions. Thus, parents, when seeking diverse commercial information, inadvertently experience heightened information-handling stress. This heightened pressure may lead them to be more receptive to educational services and products, potentially exposing them to an "information consumption" trap. This trap manipulates parents' cognitive surplus and fragmented time, creating and exploiting anxiety, thereby perpetuating a cycle of anxiety-driven consumption.

*Subject-information-driven model*

The subject-information-driven model mainly encompasses configuration 3 (policy impact, factual judgment, media guide, and cultural support) and configuration 4 (policy awareness, media guide, education trafficking, and cultural support). These configuration models are in agreement, signifying the influential role of subject factors (policy interpretation and cultural support differences) and media guides in shaping parental educational anxiety. Some parents lack the ability to properly comprehend educational policies, leading to

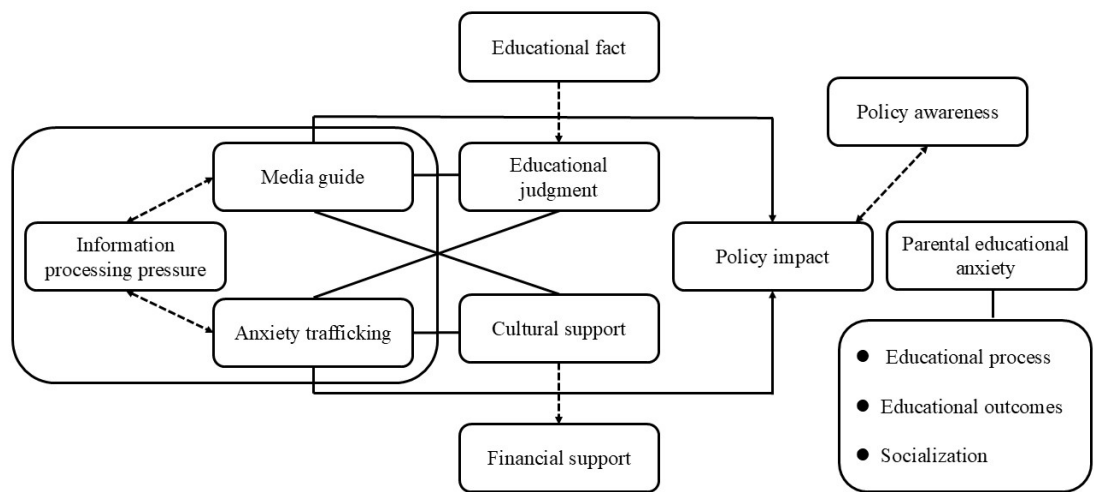
biased perspectives and insufficient support for their children's education. This vulnerability leaves them susceptible to anxiety induced by the media environment. It is worth noting that variations in family economic status have a relatively minor effect on parental attitudes toward education. One reason for this phenomenon is that the general and vocational education segregation policy primarily focuses on the compulsory education stage. Educational outcomes of free compulsory education in China have helped reduce the disparities in family economic backgrounds. Another factor is the ongoing optimization of the educational ecology through the implementation of the "double reduction" policy, which lessens the influence of economic capital on education and restores the true essence of the education industry.

**Model improvement**

With the insights provided, we produced a model of the mechanism of parental educational anxiety preceding alleviation in the context of general and vocational education segregation (Figure 2). The improvements are explained in the next paragraph. The model was refined as follows.

1. The stimulating effect of the policy of segregating general and vocational education was highlighted. The fsQCA configurational path analysis revealed that parents' distorted comprehension of policies is a significant determinant of their educational anxiety. When this lack of understanding of policies is coupled with other factors, it can lead to different levels of





**Figure 2.** Improved model of the antecedent mechanism of parental educational anxiety in the context of general and vocational education segregation.

educational anxiety.

2. The dissemination of information on policies has a significant impact on parents' comprehension of such policies. In the process of setting up configurations in this study, it was evident that despite a strong focus on fair parental education and robust family support, imbalanced media influence or anxiety-inducing policy discussions can cause parental concerns regarding education.
3. The fundamental impact of information-processing pressure is significant. Although the pressure of information processing may not directly cause parental educational anxiety, a lack of familiarity with technology can lead parents to question themselves and feel that they are falling behind. To address this feeling of inadequacy, parents are more inclined to rely on media guidance.
4. The declining standard of vocational education heightens parents' worries. The development of vocational education quality significantly influences parents' perception of education fairness and their acceptance of the policy of segregating general education from vocational education. Establishing vocational education as an important reference point for alleviating parents' educational concerns is a pressing matter.

CONCLUSION AND RECOMMENDATIONS

Conclusion

This study found that parents' comprehension of educational policies influences their educational anxiety.

When they have a distorted perception of educational policies, they often concentrate on and interpret policy information according to their own interests and preferences, while disregarding or minimizing their exposure to other policy information.<sup>[41]</sup> Consequently, they may not fully grasp the consequences of educational policies, leading to a tendency to become trapped in an "information cocoon", which could lead to irrational concerns about their abilities in comparison to other parents. All six configurations of educational anxiety indicate that a lack of understanding of the implications of educational policies and the presence of various random influencing factors can result in elevated parental educational anxiety. This highlights the importance of enhancing the interpretation and communication of educational policies, and of guiding parents in accurately grasping the value implications of the policy for the segregation of general and vocational education.

This study further found that the communication orientation of the media impacts how parents identify with the educational environment. In the current age of intelligent communication, network algorithms and other intelligent media technologies have become seamlessly integrated into the realm of policy communication. Although this integration has the potential to enhance the accuracy of policy communication, it also reduces control over the effectiveness of such communication.<sup>[42]</sup> Despite this technological advancement, the practice of policy communication has failed to keep up with the changing times, often relying on a simplistic linear mode of propaganda and prioritizing traffic generation. This

approach has led to the emergence of public opinion conflicts. Consequently, policy information may become diluted, misaligned, or even distorted, ultimately resulting in a limited, biased, and inaccurate public understanding of policy matters. The media's indiscriminate dissemination of massive volumes of information will first increase the pressure on parents to process such information, exacerbating public confusion about policy information in the phenomenon known as "information overload". Second, various media outlets have their own communication methods and preferences, resulting in differentiated public policy awareness and a lack of corresponding media regulations. Third, certain media consistently appeal to people's instincts to attract attention, stimulate their imagination,<sup>[43]</sup> and neglect their social responsibilities. This intentional "deconstruction" of the true meaning of policies leads to a breakdown in policy dissemination, impacting parental educational anxiety.

Vocational education intensifies parents' internal anxiety due to their perception of it as a "lesser education and backup plan". The current standards for the separation of general education and vocational education in China still rely heavily on exam scores. There is a lingering belief that "students with low scores have poor abilities", and thus, many parents associate vocational education with lower academic abilities and so, view it as a secondary option. They worry about the potential of their children being directed toward vocational education. Parents are also concerned about the disparities in quality and future opportunities between the two paths.

While vocational education is intended to nurture high-quality technical skills and talents, the actual development of vocational education has not met expectations. The growth trajectory of vocational education remains somewhat limited, which has an impact on its societal standing.

### **Contributions and recommendations**

This study sought to advance previous research. First, it investigated parental educational anxiety in a specific policy context, which was realistic and made up for the shortcomings of previous studies, such as a weak purpose and complicated and chaotic content. Second, this study combined qualitative and quantitative research gradually and in depth to analyze the problem of parental educational anxiety in the context of general and vocational education segregation, thereby overcoming the challenges of using a single quantitative or qualitative research method and giving it a certain application value. Third, this study operationalized the factors of parental educational anxiety in the context of general and vocational education segregation, thereby solving the problem of the ambiguity of the core

concepts in previous studies. Finally, previous studies on educational anxiety were limited to generalized and vague discursive analyses or superficial studies that merely presented data, lacking profundity. This study provided a new research perspective by examining the issue of parental educational anxiety from a policy perspective and considering the logical implications of the policy at its current stage, which broadens the horizon of parental educational anxiety research.

This study found that parents' anxiety levels are significantly correlated with their comprehension of the general and vocational education segregation policy at the junior high school stage and that their stereotypical perceptions of this policy, which are driven more by emotions than rationality, have a detrimental impact on the successful implementation of educational policies, encouraging collaborative interaction among various stakeholders is recommended to increase parental agreement on education policies.

Parents should proactively seek out various channels for accessing policy information, grasping the most authoritative and standardized educational information, sensibly engaging in educational communication, reasonably articulating their interests and demands, and preventing a skewed understanding of information due to a lack of information.

The government and the media can advance the full implementation of educational policy values by accurately understanding the public's needs and concerns about education, increasing the public's intake of information, and refining their language processing techniques. Indeed, it is important for the government and the media to employ a diverse policy discourse framework to elucidate the context of policies, address conflicts of interest among stakeholders, foster agreements on policy discourse, and establish a cohesive and impactful approach to disseminating policy information.<sup>[41]</sup> Moreover, public hearings or online surveys, among others, must be conducted to proactively formulate, promote, implement, and evaluate education policies; prevent misunderstandings resulting from the public's inadequate understanding of policy information; and officially address the collision between formal institutional requirements and informal life order and empower individuals to adjust their behavior.<sup>[51]</sup> Simultaneously, as the way policy language is managed significantly impacts the comprehension of educational information, language expression throughout the promotion of policies should guarantee not only the accuracy and precision of the policy but also adhere to the principle of clear and understandable communication. This approach should comprehensively demonstrate the significance, details, and implementation methods of the policy from multiple perspectives, thereby ensuring the effectiveness of the policy delivery.

Since policy dissemination serves as a vital link in the public policy process, because it is crucial for raising awareness and understanding policies and for facilitating their effective implementation, the policy communication model must also evolve to reflect the rapid evolution of media technology. Media must transition from a unilateral communication model centered on control and propaganda to a bilateral communication model centered on negotiation and interaction. This shift will expand information channels and facilitate sustainable dialogue among stakeholders. Simultaneously, the significant influence of mass media and the widespread availability of information offer convenience for policy dissemination. However, they also create a situation of mixed communication in the market. Therefore, it is essential for the government to enhance the restraint and regulation of the dissemination of misleading information.

Furthermore, to address the issues of multiple repetitive policy interpretations, lengthy and unclear content, and disorderly and ineffective work methods in the mainstream media, it is essential to reform the work style of such media. This can be achieved by providing their personnel with comprehensive training in information literacy, improving the efficiency of their policy dissemination, and enhancing their policy interpretation mechanism. These improvements should include authoritative release and differentiated interpretation of policy information, as well as public opinion response, all aimed at strengthening the implementation of the media's responsibility. In relation to this, some commercial media, platform-based media, and self-media outlets supplement the mainstream media by considering the "eyeball economy" when reporting. They aim to attract traffic by capitalizing on national education policies. They take policy documents, selectively extract phrases for information "deconstruction", and create a sense of educational disparity to maintain high click-through rates for news coverage. According to the opinion leaders theory, a small number of highly influential media and individual users can significantly affect public attitudes toward policies. Thus, the content of this influential group should be intensively reviewed and managed. The government should regulate such news media and enhance its efforts to combat false news in policy promotion. These will help dismantle the entrapment of public opinion against vocational education development and ensure the authentic progress of vocational education.

First of all, however, the unique value of vocational education in cultivating specialized talents should be actively harnessed. The continued supply of high-quality technical and skilled talents is primarily hinged on vocational education. The quality and efficiency of a

country's talent supply have a direct impact on the quality of the country's economic performance, as well as on its social harmony and stability. Vocational education should remain true to its nature as specialized education and should be equipped with a comprehensive evaluation system focused on competency, and its reform should be driven by national requirements and societal demands. This approach will help establish a stronger groundwork for cultivating a positive public perception of vocational education. Furthermore, it is important to expand the range of opportunities for vocational education students to support their personal growth and success in various aspects of life.

To further advance vocational education, it is important to continuously enhance the five-year integrated program, such as the 3 + 2 and 3 + 4 models, and other training modes. Additionally, the reform of third-party assessment in higher vocational education must be deepened, and societal acknowledgment of vocational undergraduate education must be boosted. Essential practical training bases for vocational colleges must be established by promoting the integration of industry and education in employment and fostering a school-enterprise cooperation system to fill critical infrastructure gaps and provide students with a strong technical foundation for their career development. In terms of entrepreneurship, the government must offer economic assistance to students who pursue innovation and entrepreneurship as their career paths, in the form of tax incentives and subsidies. Additionally, a range of policy incentives should be implemented.

Society should ultimately foster an educational environment that supports the development of talent. Experiential intelligence and situational intelligence play vital roles in shaping individual development. The selection of appropriate educational methods can greatly contribute to the holistic development of individuals. Moreover, differentiated educational models are necessary for students with diverse abilities.

When vocational education is no longer dictated by the filtering function of education but becomes the active choice of students, it will mark true personalized development and will signify the complete realization of educational value.

### **Research limitations and recommendations for future research**

Although this study provided a comprehensive explanation of educational anxiety, it still had some shortcomings for improvement.

First, its sample size must be increased to make its findings theoretically relevant. Second, although this

study has improved the model of parental educational anxiety from both qualitative and quantitative perspectives, it still lacked deep processing and integration of the material. Thus, this topic can be further explored. Third, educational phenomena are generally characterized by a combination of factors, which may have different relationships that work together to produce outcomes. Although fsQCA can weigh the importance of factors to reflect the influence of different factors in a given context, it is not yet commonly used in the field of pedagogy. Therefore, future studies can widely use fsQCA to explore the causal relationships between different combinations of factors and outcomes in the field of education, which will be beneficial for studying the interpretation of many nonlinear educational issues. Finally, the findings of this study reflect the social problems of widespread educational anxiety and the seriousness of the phenomenon of educational involution, which causes excessive comparison, internal depletion, vicious competition, and many other negative effects.

Therefore, it is important to continue exploring how to develop vocational education, to make the development of general education and vocational education synergistic, and to guide the development of students' "uniqueness" to enable them to find their own specialties and develop them appropriately. Finally, although the phenomenon of involution has become a topic of great concern to society as a whole, few empirical studies have explored its causes and consequences. Therefore, greater attention can be given to this topic in subsequent studies.

## DECLARATIONS

### Author contributions

He Z: Conceptualization, Methodology, Validation, Writing—Original draft, Writing—Review and Editing, Supervision, Funding acquisition. Liang BB: Conceptualization, Data curation, Methodology, Formal analysis, Investigation, Writing—Original draft, Writing—Review and Editing. Ye JH: Conceptualization, Methodology, Validation, Writing—Original draft, Writing—Review and Editing, and Funding acquisition. All authors have read and approved the final version of the manuscript.

### Ethical approval

Not applicable.

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### Conflict of interest

The author has no conflicts of interest to declare.

### Data availability statement

Data used to support the findings of this study are available from the corresponding author upon reasonable request.

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