THE PATH OF PROMOTING PRIMARY SCHOOL STUDENTS' INQUIRY ABILITY THROUGH FAMILY EDUCATION IN CHINA UNDER INFORMATION-BASED TECHNOLOGY

LI MA

A THESIS SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
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INSTITUTE OF SCIENCE INNOVATION AND CULTURE
RAJAMANGALA UNIVERSITY OF TECHNOLOGY KRUNGTHEP
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Major Master of Arts (Education and Society)
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ABSTRACT

This study was designed with two primary objectives. The first objective was to identify teachers' strategies to enhance students' inquiry skills in information-based family education. The second objective was to evaluate the effectiveness of these strategies in improving primary school students' inquiry skills within their familial educational environments, as perceived by parents. The methodology employed in this study was a mixed-methods approach, including a quantitative survey. The survey was administered to 40 teachers and 80 parents in Guangzhou, China. Additionally, selected parents were interviewed to gain further insights into the familial and educational environments and the strategies employed therein. The study's results were quite revealing. Over 66% of the teachers expressed confidence in their students' ability to use school resources to improve their inquiry skills. Despite challenges such as limited access to technology and the digital divide, these teachers employ a diverse range of strategies, including technology, to nurture their students' inquiry skills. On the other hand, parents were found to leverage various tech-based methods to stimulate their children's interest and learning. These methods ranged from online research preparation to virtual reality apps. Technology was not just for sparking interest but also used to enhance specific inquiry skills, such as math practice or exploring art styles. Children's reactions to problems were also studied. The study found that children display a range of reactions, from confusion to motivation. These reactions often lead to different help-seeking strategies. Furthermore, children were found to share their learning with their families frequently. This demonstrates how children acquire knowledge and how they disseminate it within their familial environments. Therefore, this study provides valuable insights into the strategies teachers and parents use to enhance students' inquiry skills and into their effectiveness.

Keywords: Students' Inquiry Skills, Information-based Family Education

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Li MA

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CHAPTER I
INTRODUCTION

1.1 Research Background

With the growth of information technology, almost every family's life has been affected, bringing tremendous changes to these families. The information age has encouraged the development of new ideas, and changes in family members' thoughts have led to shifts in traditional ideas in family education.

The emergence of computer emulation techniques, VR, multimedia technology, and other technologies enables learners to plan their learning time, complete their learning tasks with the help of technology anytime, anywhere, without being limited by time and place, and to achieve more in their spare and fragmented time.

The remote education model enabled by information technology empowers learners and educators worldwide to communicate and transfer knowledge over the internet. To learn English well, you can communicate and practice with educators around the world. Technology creates a positive, rich learning environment for learners, and the progress of distance education will broaden access to knowledge. Information technology has become a tool for social progress. The internet age is an era in which various ideas converge and spread rapidly, with the speed of information dissemination apparent. The internet has changed the traditional modes of communication between people, the way of work, life, and education within the traditional family, bringing indelible changes to cultures.

The evolution of research on family education in China has been significant (Dai, 2021). Contemporary family life education in China emerged when several disciplines began to focus on changes in family-related issues. Scholars of sociology, psychology, anthropology, law, education, medicine, and women's studies have addressed the issues and challenges faced by Chinese families and examined the policies and practices affecting children and families during China's economic reform and social transition over the past four decades.

Previous research results suggest that family education in China has

transitioned from traditional family structures, which were aimed at maintaining the roles and responsibilities of its members based on Confucian philosophy, to modern parenting and parental education, and most recently to the emergence of relational skill training (Li & Qiu, 2018; Shen, 2023). The Chinese government has implemented policies to promote healthy relationships, raise awareness of child and woman abuse, and protect the elderly through education. Over the last three decades, research on the theory and practice of family education in China has increased significantly.

However, there are unresolved issues regarding family education in China. Common problems in family education include the psychological and personality impacts of parental divorce on children, the development of children in single-parent families, and the connection between family education and school education. These issues have garnered widespread societal concern and are being addressed through various means, including educational films. Despite these efforts, challenges in the development and limitations in the implementation of family life education persist (Fang & Feng, 2020; Robila & Taylor, 2018; Tan & Fang, 2023).

Informatization plays a pivotal role in China's family education system. It is a strategic choice for China's educational reform and development in the new era (Bao & Yin, 2020; Spector, 2018; Yan & Yang, 2021; Zhong, 2023). The integration of information technology into the teaching process across various subjects has created a new teaching environment and created a teaching and learning mode characterized by 'autonomy, inquiry, and cooperation'. This not only highlights the important role of teachers but also accurately reflects students' position.

The relationship between informatization and family education is closely intertwined. Informatization is considered an important means to achieve educational equity. It has been a focal point of China's fundamental educational reforms and improvements, as it is closely linked to the development of a high-quality educational system in the country and reflects China's pursuit of educational informatization (Bao & Yin, 2020).

There are many problems in the development of family education in the context of information technology, leading to a low level of family education. Common problems include the impact of parental divorce on children's psychology and personality, the growth of children in single-parent families, and the link between

familial education and school education (Spector, 2018; Zhong, 2023). Despite the emergence of educational films that have brought these issues to the forefront of societal concern, there are still challenges in developing and implementing family life education.

1.2 Research Questions

These two research questions are:

1. What are the strategies to enhance students' inquiry skills within the context of information-based family education, as perceived by teachers?

2. How do parents perceive the effectiveness of strategies aimed at improving primary school students' inquiry skills within their family educational environments?

1.3 Research Objectives

The objectives of this research:

1. To identify strategies to enhance students' inquiry skills within the context of information-based family education, as perceived by teachers.

2. Assess the effectiveness of strategies to improve primary school students' inquiry skills within their family educational environments.

The best way to learn is through discovery by one's own efforts, which allows one to understand knowledge and master its internal relationships, nature, and connections more easily. Children are individuals bursting with curiosity and eager to learn. Information technology in education, instead of being a means to reinforce traditional educational purposes, is the means to create an educational reality where children can actively explore, analyze, and solve problems. Adopting this perspective, technology is a cognitive tool for children to explore and study independently and cooperatively. When children self-develop their knowledge and research abilities, their subjective initiative becomes increasingly active, conscious, and independent in the educational process, laying a solid foundation for improving and promoting their thinking and their ability to analyze problems.

The rapid development of information technology has greatly increased the possibility of people accessing information and ideas and has extensively facilitated communication and exchange. The progress of information technology not only broadens China's education reform but also facilitates the development of its education industry. The times urge parents to step forward and ensure the development and progress of students for the advancement of society. As society moves from an industrial base to service industries, educational requirements are increasingly higher; manual labor can no longer meet society's needs, making the demand for inquiry-based skills-based learning grow.

1.4 Research Content

Primary school is an important period in one's life, as it is the age at which one formally enters education. In this period, the development of primary school students in all aspects, including physiology, movement, cognition, personality, social life, morality, behavioral habits, and other aspects, is laid down and develops rapidly. Parents, as children's first mentors, are crucial to their development, and the home, as the initial harbor for children, is where formative education takes place. Given this, how family education can improve primary school students' inquiry ability with the support of information technology was analysed in this study.

1.5 Research Framework

Literature review: By analyzing relevant research, strategies for promoting pupils' inquiry abilities in information-based family education were developed.

Observation method: Direct observation was adopted. Based on the parents' educational backgrounds in the family, strategies for improving primary school students' inquiry abilities were studied.

1.6 Definition of Key Terms

Inquiry ability, often linked with inquiry-based learning, is an educational approach that encompasses the exploration of the natural and material world. This

exploration process initiates the formulation of questions, the making of discoveries, and the testing of these discoveries in the pursuit of new understanding. Key facets of inquiry ability encompass curiosity, active learning, and critical thinking.

Family education in China, often referred to as Family Life Education (FLE), has undergone a significant evolution from traditional family rules grounded in Confucian philosophy to the contemporary emergence of relational skills training. This form of education exerts a lasting influence on children's development, primarily through parent-child interaction. The Chinese family education system is deeply embedded in the social, economic, historical, and cultural contexts of the Chinese family. It is noteworthy that the definitions and scopes of family education can vary considerably across different regions of China, attributable to disparities in historical, social, economic, and political contexts.

Informatization in primary education refers to the process of integrating contemporary information and communication technologies (ICT) into the educational infrastructure. This process seeks to optimize the use of these technologies to achieve pedagogical and psychological goals inherent in training and education.

CHAPTER II
RELATED LITERATURE

2.1 Definition of Related Concepts

1. Informatization

Informatization is the comprehensive application of modern information technology to manage data generated by human activities effectively. Information integration and sharing through data processing aligned with business needs promote the transformation of application objects (government, enterprises, society) (Ma, 2021). It is a process that promotes social and economic development, and its scope encompasses all members of society. Meanwhile, it is a process that spans all areas of society and aims to promote social progress in an all-round way (Yan & Yang, 2021).

2. Family Education

Family education includes "socialisation", which is the education of children in language and behavior in a humble, respectful, caring, civilized, and noble manner. It includes civic moral education, which is to educate children to observe public order, be honest and trustworthy, be civilized and polite, unite and love each other, respect each other, pay attention to hygiene, protect cultural relics, take good care of public facilities, help others and oppose environmental pollution (Kaveh, 2020; Shen, 2023). Family moral education focuses on the norms that should be followed in individual and collective relationships, as well as the fundamental values of unity and friendship, honesty, courage, discipline, civility and courtesy, diligence, and frugality. In daily life, parents can use the power of example to cultivate students' moral consciousness, enrich their moral sentiment, and foster their moral integrity (Tan & Fang, 2023).

Family education is the education of children by parents in family life, the conscious socialization behaviour carried out by parents, realized through words, deeds, and family life practice. From a modern perspective, family members (including parents and children) influence and educate one another (Robila & Taylor, 2018).

3. Primary School Students' Inquiry Ability

Inquiry ability is equivalent to pioneering ability: a person is strong-minded and has the decision-making ability to quickly and soberly judge the current position, dare to choose countermeasures when the external environment is unclear and unknown, and know when, where, and what he should do (Sunardi et al., 2024). The cultivation of a child's inquiry ability requires purposeful, conscious development in daily life and educational practice. Attention should be paid to accepting children's novel ideas and practices, providing them with free inquiry time and space, and improving their inquiry ability (Rasmitadila et al., 2020).

2.2 The Relationship Between Informatization, Family Education, and Primary School Students' Inquiry Ability

There are vast resources on the Internet. The popularization of information technology has made many digital products increasingly popular in families, facilitating daily life but also changing family behavioral habits. Children can access the information they want on the internet using TmallGenie, which is a convenient way to learn without requiring their parents' help or using complicated internet technology (Bao & Yin, 2020). When parents encourage the effective use of internet resources available to the family, children develop their own exploration skills using information technology.

Inquiry-based learning integrates students into a "virtual platform" for knowledge acquisition. Knowing that learning materials can be found on the internet can mobilize a child's enthusiasm and initiative, allowing the child to learn proactively and find relevant information and knowledge, thus promoting learning (B, 2023). In this way, children actively create the conditions for meaningful learning by drawing on the content they have learned, enhancing their understanding and application of knowledge. Inquiry learning under the internet environment is not aimed at the simple study of various disciplines. It is neither to use the network environment to complete homework assigned by teachers after class, nor to use it to learn more book knowledge (Ma, 2021). Family education focuses more on education and knowledge beyond textbooks, teaching children how to become well-integrated people. It is to teach

children how to adapt to unfamiliar environments outside the family and how to get along with others, so that they can come to understand all aspects of society, history, science, and life. Information technology is best understood as a tool for children to explore independently.

Family education has unique advantages when educating children, and its importance is self-evident. To begin with, family education is the "primary and first-mover" in education. After a baby is born, parents educate the child; family education is the "sowing and grounding, laying a foundation for children as they spend most of their time at home. It lays a solid foundation for children to receive a school education (Shen, 2023). Family education includes the education of "moral self-restraint".

Unlike school education, family education focuses more on cultivating children's behavior and moral outlook. Family education is an education of "teaching children in accordance with their aptitude, which is highly targeted (Tan & Fang, 2023). Parents who better understand their children's character can provide targeted education. Family education is an education of "teaching by words and deeds, teaching by example.. Imitation is an important learning strategy for students. Family education is "lifelong" education with strong internal coherence. Family is the reality that accompanies children throughout life, and different developmental stages are accompanied by different aspects of family education. Family education is about "picking up and filling up the gaps" and is flexible. As the number of children in each family is small, it is easy to adopt various educational methods to help them learn and fill gaps.

On October 23rd, at the 31st meeting of the Standing Committee of the 13th National People's Congress, the "Law of the People's Republic of China on Promoting Family Education" was adopted and passed, marking the first time China had enacted special legislation on family education. Family education has always been a top priority and an important part of the education system (Robila & Taylor, 2018; Shen, 2023). General Secretary Xi Jinping also pointed out that we must pay attention to family, family education, and family tradition. In the "Outline of the National Medium-and Long-Term Education Reform and Development Plan (2010-2020)", it clearly stated that it is necessary to "give full play to the important role of family education in the growth of children and adolescents" and designate laws on family

education (Tan & Fang, 2023). It follows that family education occupies an understandably important place and role in today's society.

Piaget said, "Interest is actually an extension of needs, which shows the relationship between objects and needs. The reason why we are interested in an object is that it can meet our needs." While educating children, parents should encourage them to be adventurous so they can pursue their interests in all aspects. For children, interesting things are attractive and prompt them to take the initiative to complete and explore. There are many kinds of educational games on the internet. Parents can choose games that lean toward learning to stimulate children's interest. The most attractive activity for children after class is games. Internet games enable them to play with or without friends at home. Games, as one of the most keen projects for children, offer interesting, rich and dramatic educational possibilities (Reiss, 2000; Strack et al., 2016; Yuan & Liu, 2022). With the emergence of the internet, parents can create adventures in the home. Informatization is the historical and inevitable product of scientific development in family education.

CHAPTER III
METHODOLOGY

3.1 Research Design

The research design employed in this study was a qualitative descriptive survey. The method aimed to provide a comprehensive summary of a specific phenomenon and events. In contrast to quantitative descriptive research, which emphasizes numerical data, qualitative descriptive research prioritizes non-numerical data to gain insights into individuals' social realities, encompassing their attitudes, beliefs, and motivations. This approach is journalistic in nature, seeking to answer the questions of who, what, where, and how. The primary sources of data for this study were twofold: the teachers and the students' parents.

3.2. Research Sample

In a qualitative study, the sample should reflect the range of variations in the phenomenon being studied within the target population. In this study, it was both logical and efficient to intentionally select a diverse sample to capture all relevant variations of the phenomenon (a concept known as saturation). The level of saturation depends on the type and degree of variation deemed relevant. However, this was a single study, so it was sufficient to select only a subset of samples to achieve sufficient saturation.

The data for this study were from two sources: 40 teachers in Guangzhou, China, and 80 parents. Teachers were selected based on specific criteria, including those with extensive teaching experience in schools and who made extensive use of informatics strategies. Parents were also carefully selected based on accessibility and feasibility of data collection, with a particular focus on those who had fully optimized the use of informatics at home to facilitate their children's learning. Subsequently, a series of questions was developed, and interviews were conducted.

3.3 Data Collection

The interviews used open-ended questions, which meant every response was unique. To ensure comprehensive, detailed coverage, it was important to include all members of the study population. When describing diversity inductively, an efficient approach was to: a) start with a small sample, b) conduct an intermediate analysis to develop categories, c) devise a strategy to identify uncovered categories, i.e., respondents who did not fit into the categories developed, establish a rule for when to stop, such as after five interviews that did not yield any new relevant information. In a qualitative survey, achieving saturation is more of an empirical question than a theoretical one, as in Grounded Theory. The aim is not to exhaustively detail concepts for a theoretical domain (i.e., to cover all theoretical possibilities), but rather to capture the relevant diversity within an empirically-defined population, which might consist of only a small number of units.

3.4 Data Analysis

In the qualitative research literature, the various levels of analysis were categorized by depth, ranging from a superficial description to a theoretical interpretation. They were classified according to their distance from the data, achieved through "cumulative steps of data transformation. This study proposed a synthesis of these two classifications into a three-tiered framework for qualitative survey analysis: unidimensional description, multidimensional description, and explanation.

A unidimensional description involves organizing data into objects, establishing dimensions for each object, and creating categories for each dimension. Multidimensional description synthesized dimensions and/or categories into more abstract concepts and/or typologies. Explanations connected descriptive categories or dimensions to their context. It was important to note that description and explanation were often interwoven in the analytical process.

CHAPTER IV
ANALYSIS RESULT

4.1 Results from Questionnaire

The results of the teacher questionnaire (Table 4.1).

Table 4.1 Results of Teacher Questionnaire

Does your student meet the following criteria:	A (%)	B (%)	C (%)	D (%)
1. My students actively seek out information to answer their questions.	60	20	20	0
2. My students use technology tools to aid their inquiries.	70	20	10	0
3. My students work collaboratively on inquiry projects.	70	20	10	0
4. My students can identify relevant information from online sources.	60	20	20	0
5. My students ask follow-up questions to deepen their understanding.	65	25	10	0
6. My students evaluate the credibility of information they find.	60	20	20	0
7. My students present their findings in creative and engaging ways.	70	20	10	0
8. My students understand the importance of using resources online.	80	20	0	0
9. My students are comfortable with making mistakes and learning from them.	70	20	10	0
10. My students are motivated to explore topics beyond the classroom curriculum.	60	20	20	0
11. My students use critical thinking skills when analyzing information.	60	20	20	0
12. My students understand the connection between real-world problems and their inquiries.	70	20	10	0
Mean	66.25	20.4	13.3	0

Table 4.1 provides a comprehensive overview of responses from teachers, all of whom were asked to evaluate their students' inquiry skills in a classroom setting. The data show that a significant majority of the teachers, 66.25%, strongly agreed that their students were making effective use of the information and technology available at their school to enhance their inquiry skills.

20.4% of the teachers expressed satisfaction with their students' abilities in this area. 13.3% of the teachers somewhat agreed with this sentiment. It was interesting to note that there was a complete absence of disagreement among the teachers (0%), with no teachers expressing any form of disagreement. This data therefore indicated that the students demonstrated a satisfactory level of competence in developing their inquiry skills.

Another aspect of the data worth noting concerned the strategies employed to foster students' inquiry skills. The data suggested that the most promising strategies were a combination of individual techniques, identifying, questioning, and evaluating, and group strategies. The group strategies included collaboration with peers and the application of these skills in real-world scenarios. These strategies, when used collectively, contributed significantly to the development of students' inquiry skills.

Additional data also showed that strategies to enhance inquiry skills can be implemented through collaborations, field trips, and individual research, as shown in Table 4.2.

Table 4.2 Strategies for Enhancing Students' Inquiry Skills

Survey Question	**Teacher Responses**	**Parent Responses**
Q1: Importance of Inquiry-Based Learning		
Strongly Agree	60	15
Agree	75	20
Neutral	10	5
Disagree	5	0
Strongly Disagree	0	0
Q2: Challenges in Supporting Inquiry Learning		
Limited Class Time	85	25
Resource Constraints	65	15
Student Engagement	40	10
Teacher Training	25	5

Survey Question	Teacher Responses	Parent Responses
Other	15	5
Q3: Strategies Used for Inquiry Learning		
Problem-Based Learning	90	25
Collaborative Projects	70	15
Field Trips/Experiments	50	10
Individual Research	30	5
Other	10	5

In Figure 4.1 below, the majority of teachers (80%) strongly agreed or agreed that inquiry-based learning is important for elementary students. This indicated a widespread recognition among teachers of the value of inquiry skills in education.

Parents also overwhelmingly supported the importance of inquiry-based learning, with 95% agreeing or strongly agreeing. This suggests a strong alignment between teachers' and parents' perspectives on this issue.

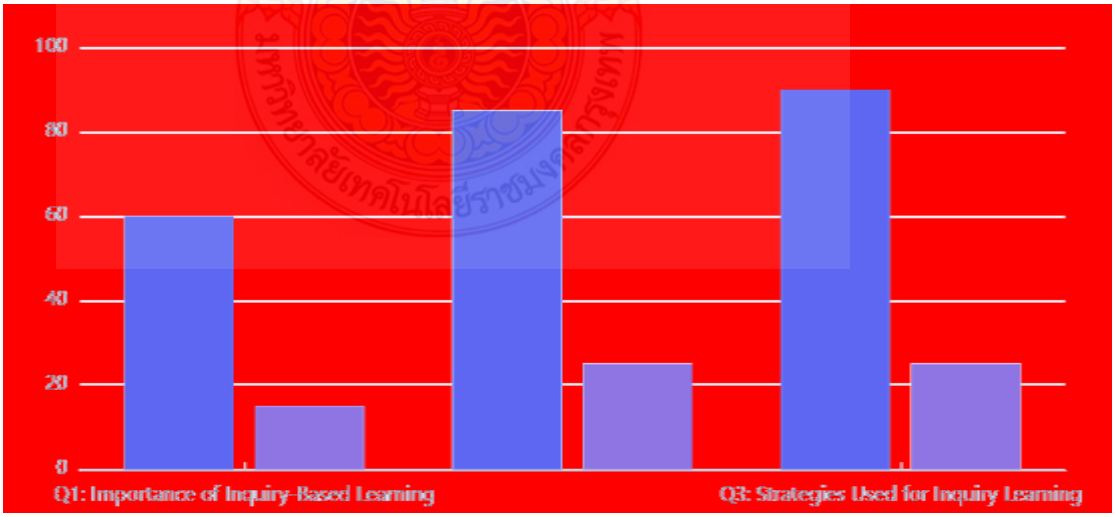


Figure 4.1 Strategies for Inquiry Skills

Challenges in Supporting Inquiry Learning: Limited class time was perceived as the most significant challenge by both teachers (85%) and parents (62.5%). This reflects the pressure teachers face to cover curriculum content while still providing

opportunities for student exploration. Resource constraints were also a notable challenge, with 65% of teachers and 37.5% of parents indicating this was an issue. This highlights the need for additional resources to support inquiry-based learning in the classroom. While engagement and teacher training are recognized as challenges, they are less frequently mentioned than the previous two. This suggested that while these areas need attention, they are not as pressing as issues of time and resources.

Strategies Used for Inquiry Learning: Problem-based learning was the most commonly used strategy among teachers (90%), indicating its popularity and effectiveness in promoting inquiry skills. Collaborative projects and field trips/experiments were frequently used, with 70% and 50% of teachers reporting their use, respectively. These strategies provide students with opportunities to engage in hands-on, real-world experiences that promote inquiry.

Individual research was less frequently used (30%), possibly due to time constraints or a perception that it was less effective than group-based activities. Other strategies, such as guest speakers or technology-based tools, were mentioned infrequently but still represent potential areas for further exploration.

Overall, the survey results indicated a strong consensus among teachers on the importance of inquiry-based learning for elementary students. However, challenges related to time and resources remained significant barriers to its implementation. Strategies such as problem-based learning and collaborative projects were commonly used to promote inquiry skills, but there is room for further exploration and innovation in this area.

4.2 Results from the Interview

This section presents the results of interviews with teachers and parents. Interview results from selected teachers are summarized in Table 4.3.

Table 4.3 The Summary Results of the Interviews from Teachers

Concerning Computer Technologies for Education	Findings
1. How often do you encourage students to use technology in their inquiries?	Teacher 1: I often encourage students three times a week because the students have free time in a week for three days Teacher 2: I sometimes encourage them after class, twice a week Teacher 3: I also help my students three times a week Teacher 4: I help my students twice a week, learning to use information technology Teacher 5: I encourage students twice a week because they have three free days.
2. How do you support students' development of inquiry skills?	Teacher 1: I present open-ended questions to encourage students to ask their own questions and to help them learn how to find answers. Teacher 2: I provide students with exploratory books. Teacher 3: I organize student groups to collaborate and explore problems together. Teacher 4: I provide timely feedback to help students understand their progress and areas for improvement. Teacher 5: I encourage students to try new methods and ideas to cultivate their innovative abilities.
3. In your opinion, what are the benefits of technology in fostering student inquiry?	Teacher 1: Provide more resources: Educational technology can offer students access to online databases, virtual laboratories, and other resources. These resources can help students better understand the objects and processes of exploration. Teacher 2 ： Promoting collaborative exploration: Educational technology can foster collaborative exploration among students through online collaboration tools, social media, etc. Students can better communicate and share the results and experiences of their exploration. Teacher 3 ： Improve exploration efficiency: Educational technology can help students obtain and analyze information more quickly, through data analysis tools, search engines, etc. Students can quickly find the necessary information, analyze and process it.

Concerning Computer Technologies for Education	Findings
	Teacher 4：Cultivate innovative ability: Educational technology can provide students with more innovative tools and platforms, such as virtual reality, augmented reality, etc. These tools can help students unleash their innovative abilities and explore and create.
	Teacher 5：Enhancing learning motivation: Educational technology can boost students' motivation through gamified and personalized learning, among other strategies. These strategies enable students to participate in research activities actively.
4. What challenges do you face when integrating technology into inquiry-based learning?	Teacher 1: Lack of technological skills: Many teachers may lack the skills to integrate technology effectively into their teaching. This can include familiarity with specific tools and platforms, as well as the ability to troubleshoot technical issues.
	Teacher 2: Limited access to technology: Schools may have limited access to technology, such as laptops, tablets, or internet connectivity. This can make it difficult for teachers to implement technology-enhanced inquiry-based learning activities.
	Teacher 3: Limited access to technology: Schools may have limited access to technology, such as laptops, tablets, or internet connectivity. This can make it difficult for teachers to implement technology-enhanced inquiry-based learning activities.
	Teacher 4:Student digital divide: Not all students may have equal access to technology at home, which can create a digital divide. Teachers need to be aware of this and ensure that their technology-enhanced activities are accessible to all students.
	Teacher 5: Balancing technology and inquiry: It can be challenging for teachers to find the right balance between using technology to support inquiry and ensuring students remain actively engaged in the inquiry process. Teachers need to ensure that technology is used as a tool to enhance learning, rather than as a replacement

Concerning Computer Technologies for Education	Findings
	for inquiry.
5. How do you evaluate students' inquiry skills?	Teacher 1: Observation: Teachers observe students during inquiry activities to assess their ability to ask questions, gather information, analyze data, and draw conclusions. Observations can be informal, during class discussions or group work, or formal, through structured observations using a checklist or rubric. Teacher 2: Questioning: Teachers can ask students questions during and after activities to assess their understanding of the process and the content. Questions can be open-ended to encourage students to think critically and justify their answers. Teacher 3: Reflection: Teachers can ask students to reflect on their inquiry process and learning. Reflection can be in the form of written responses, oral presentations, or group discussions. Teacher 4:Peer assessment: Teachers can ask students to assess each other's inquiry skills. This can help students develop their own evaluative skills and gain different perspectives on their peers' work. Teacher 5:Portfolios: Teachers can ask students to create portfolios of their inquiry work, including their questions, data, analysis, and conclusions. Portfolios can be used to assess students' inquiry skills over time and to document their progress.

Table 4.4 Summary of Findings of the Interview with Parents

Describe How your Child Shows Interest in Exploring New Topics or Concepts	Findings
1. Has your child used technology to research or learn about something that piqued their curiosity? If so, please provide an example.	Parent 1 : First of all, I help my child prepare before going online, making sure the WIFI is connected, as are headphones and laptops. Then I let my child search online to follow whatever questions they have in mind. Parent 2: Learning a new language: Our child used language-learning apps to practice speaking

Describe How your Child Shows Interest in Exploring New Topics or Concepts	Findings
	and listening. Parent 3:Exploring historical events: Our child used online resources to research and learn about historical events and figures. Parent 4:Developing coding skills: Our child participated in online coding courses and tutorials to learn programming languages. Parent 5: Exploring nature: Our child used virtual reality apps to explore natural environments and learn about different species.
2. In your opinion, what role does technology play in fostering your child's inquiry skills?	Parent 1: Improving math skills: Our child used math apps and websites to practice math skills and solve problems. Parent 2:Exploring space: My child used virtual reality apps and websites to explore the solar system and learn about planets, asteroids, and comets. Parent 3:Learning about different cultures: My child used online resources, videos, articles, and virtual tours to learn about the customs, traditions, and history of different cultures. Parent 4:Improving musical skills: My child used music apps and websites to learn how to play an instrument or improve their singing skills. Parent 5:Exploring art: My child used online art tutorials and museums to learn about different art styles and techniques.
3. How does your child react when faced with a problem or challenge?	Parent 1: Confusion or uncertainty: When faced with a new or unfamiliar problem, our child may feel confused or unsure of what to do. They may ask for help or clarification to better understand the situation. Parent 2: Frustration or anger: If the problem is difficult or seems impossible to solve, our child may become frustrated or angry. They may feel like they are not capable of solving the problem and may lash out or give up. Parent 3:Anxiety or fear: Some problems or challenges may cause our child to feel anxious or afraid. They may worry about the consequences of not solving the problem or fear failure. Parent 4:Motivation or determination: In some cases, our child may see a problem or challenge

Describe How your Child Shows Interest in Exploring New Topics or Concepts	Findings
	as an opportunity to learn and grow. They may become motivated or determined to find a solution and may use problem-solving skills and strategies to overcome the challenge. Parent 5:Denial or avoidance: In some cases, our child may try to deny or avoid the problem altogether. They may pretend it does not exist or hope that it will go away on its own. This reaction may be a coping mechanism to deal with feelings of anxiety or helplessness.
4. How does your child seek help or information when they encounter something they do not understand?	Parent 1: Asking questions: Our child is not afraid to ask questions when they encounter something they do not understand. They may ask us, their teachers, or other adults for help. Parent 2:Using search engines: Our child knows how to use search engines to find information on the internet. They may type in keywords and read, watch videos, or look at pictures to learn more about the topic. Parent 3: Reading books: Our child enjoys reading and often turns to books to learn new things. They may read encyclopedias, storybooks, or non-fiction books to gain a deeper understanding of the topic. Parent 4:Observing and experimenting: Our child is curious and likes to observe and experiment. They may try to solve the problem themselves by observing the situation, trying different solutions, and seeing what works best. Parent 5: Asking for help from friends or classmates: Our child knows they can learn from others and often asks for help from friends or classmates. They may discuss the problem and come up with a solution.
5. Has your child ever presented their learning or findings to you or other family members? If so, please describe the experience.	Parent 1: Yes, my son conducted a science experiment and presented it to the family. He explained the procedure, the hypothesis, and the results. We all participated in the experiment and discussed the outcome together. Parent 2: Yes, my son read a book and prepared a book report to present to the family. He summarized the plot, the characters, and their

Describe How your Child Shows Interest in Exploring New Topics or Concepts	Findings
	favorite parts. We also shared their thoughts and feelings about the book. Parent 3: Yes, my daughter created an art project and presented it to the family. She explained the inspiration behind the project, the materials used, and the process of creating it. We all admired the creativity and hard work. Parent 4: Yes, my daughter solved a math problem and presented the solution to the family. She explained the steps taken to solve the problem and the reasoning behind their answer. We all discussed different ways to approach the problem and praised her efforts. Parent 5: Yes, my son learned about a historical event and presented it to the family. He explained the event, the people involved, and its impact. We all discussed the significance of the event and how it relates to our lives today.
6. How does your child react when faced with a problem or challenge?	Parent 1: My son might feel anxious or frustrated when faced with a problem or challenge. He might feel overwhelmed and unsure of how to proceed, or he might feel upset that things are not going as planned. Parent 2:My son might remain calm and rational when faced with a problem or challenge. He might step back to analyze the situation and develop a plan of action. Parent 3: She might seek help from adults or peers when faced with a problem or challenge. My daughter might ask for advice or guidance, or enlist the help of others to solve the problem. Parent 4: My daughter might give up when faced with a problem or challenge. She might feel defeated and think that there is no point in trying anymore. Parent 5: My daughter might try something new when faced with a problem or challenge. They might be willing to take risks and try different approaches to solve the problem.
7. How does your child seek help or information when they encounter something	Parent 1 : My son will seek help from trustworthy parents. He may ask questions, seek advice, or express his confusion.

Describe How your Child Shows Interest in Exploring New Topics or Concepts	Findings
they do not understand?	Parent 2: If my son is struggling with school-related issues, he may seek help from teachers or advisors. This may include requesting clarification on the course, seeking additional help with homework, or seeking advice on how to handle difficult situations with classmates. Parent 3: Using online resources: My child might use online resources, such as search engines or educational websites, to find information on a particular topic. She might watch videos, read articles, or participate in online forums to learn more about what they are struggling with. Parent 4: Seeking help from peers: my daughter might ask peers for help when she encounters something she does not understand. This could include asking a friend for help with a school assignment, joining a study group, or simply discussing their confusion with a classmate. Parent 5: Attending a workshop or class: If my son is interested in a particular topic or skill, he might attend a workshop or class to learn more. This could include signing up for a sports clinic, attending a coding camp, or taking a cooking class.
8. Has your child ever presented their learning or findings to you or other family members? If so, please describe the experience.	Parent 1: Show and Tell: During show-and-tell, my son might bring in a school project or assignment to present to the family. This includes a science experiment, a piece of artwork, or a book he had read. Parent 2: Family Dinner Discussion: My daughter shares what she has learned in school during family dinners. This can include discussing a historical event, a math concept, or a book he has read for class. Parent 3: My child might prepare a presentation on a particular topic and present it to their family. This could include creating a slideshow, giving a speech, or performing a skit. Parent 4: Demonstration: If my daughter has learned a new skill or technique, she may demonstrate it to the family. This includes showing off their soccer skills, performing a

Describe How your Child Shows Interest in Exploring New Topics or Concepts	Findings
	magic trick, or teaching their family how to weave. Parent 5: My children might keep a journal or notebook where they record their learning and findings. They might share this with the family by showing the notebook or reading aloud what they have written.

4.3 Findings and Discussions

4.3.1 Traditional Education Theory, Distrust of Information Technology

Information technology has, over time, penetrated everyone's life. Customers can order food on the phone, can mobile a taxi, arrange carpooling or car rental; through technology people can communicate around the world instantly, can access current affairs and world news, and use it to help understand the working of things; Also we can use a variety of intelligent products: sweeping robots, dishwashers and other tools to reduce the time women spend on housework significantly (Wei, 2015; Wong et al., 2011). We are becoming increasingly comfortable with the arrival of the age of information technology, and the older generation is adapting to life with it (Stosic et al., 2020).

Information technology facilitates people's lives, and dramatically increases the possibility of children's access to electronic products, but our attitude towards children's access to electronic products is still stereotypical, children's grades drop, they play on mobile phones; children are nearsighted as to the harm, and we have sought to confirm our prejudice towards electronic products in the children's growth process, many parents have conservative thinking and do not see the internet as bringing positive benefits for the child, and avoid the child's contact with the digital reality (Cardoso, 2014; Liu & He, 2024).

Backward Thinking Mode and Lack of Attention to the Primary School Students' Inquiry Ability

Chinese parents use traditional family education to raise their children, arguably resulting in excessive control, expecting their children to listen to them in everything and establishing their sense of authority. However, they do not understand the importance of children's self-esteem, self-confidence, perseverance, and creativity (Dou, 2015). Children in traditional education are accustomed to having everything decided for them by their parents. They are used to passively accepting everything their parents teach them, which results in students not knowing how to take the initiative, not knowing what they need to know, not taking the initiative to learn, or even being bored with learning and not wanting to learn. Parents fail to realize that in this process, the child's autonomy, independence, and creativity are limited, a key factor in developing the ability to explore (So et al., 2019). Modernity requires respect for children at a time when they are forming social values and convincing them by reason, which results in secure, self-reliant, self-controlled, confident, contented, and exploratory students, and this is exactly what every parent needs to learn to change.

4.3.2 Transform Traditional Education Methods and Pay Attention to Children's Independent Inquiry Ability

Parents, as the first teachers of children, play a vital role in child development. Compared with traditional parents or guardians, contemporary parents or guardians are undoubtedly progressive (Gallego et al., 2020). In the past, when there were many children and parents or guardians had a low level of education, the concept and importance of family education were minimal, little attention was paid to children's cultural education, and even the practice of favoring sons over daughters was commonplace.

Legislation on family education solved the legitimacy issue of parents' role in family education, but did not address parents' ability to undertake family education. If parents have the right to family education but lack the ability, then improving the family education environment is still impossible to discuss (Ao et al., 2023).

With the increasing pace of change parents should be able to keep up to date, constantly accept and learn new things, pursue a higher level of cognitive development and interpersonal skills, maintain a better state of mind, and develop skills,

to show their unique charisma in front of their children so that the children will feel confident in their parents' knowledge and ability and so will pay special attention to their children's education (Sunardi et al., 2024).

Parents must understand that raising children is not just for their own sake, but also for society, and they should prioritise their children's education to ensure a better future. Parents should take the cultivation of their children as a social responsibility and contribute to China's development. Family education is not limited to imparting knowledge and culture but also to cultivating, guiding, and influencing moral character, physical fitness, life skills, cultural development, and behavioral habits. A child in a new-age family has the following characteristics: self-confidence, self-esteem, self-improvement, and independence. The most crucial thing is that the child can have his or her own opinion and make decisions with independent thought, which is precisely the most important (Wery & Thomson, 2013).

Treat the child as an independent individual, every child is an independent individual, parents should give the child a sense of independence, not too much interference in the child's life and learning, not overloading with rewards to stimulate the child's motivation to learn, which may make the child feel that learning is a means to a reward, rather than being the reward itself (Stepp, 2002).

Excessive parental interference results in the child feeling that learning is to please the parents, that it is the parent's business, and that it becomes difficult to stimulate a love of learning as a motivation within the child. Rewards and punishments are both used in the process of educating children; they should not be used excessively to motivate children to learn. The primary concerns of students may become the pursuit of rewards or the avoidance of punishment, with learning becoming secondary to these goals. Parents should guide their children step by step in their lives and learning, helping them discover and explore problems, collect information and data, and solve them (Chandrasekaran & Kumar, 2019). Let the child use their language to express their own real and independent opinions, understand a problem, and explore knowledge, so that the child feels they become the master of learning. The most important things are the child's self-confidence, self-esteem, self-improvement, and independence, and, most crucially, their own opinions and the ability to make decisions with independent thinking. The child will see both familiar and unfamiliar phenomena

in his daily life. Familiar because these phenomena are widespread in his life, and unfamiliar because he lacks guidance (Enriquez, 2014).

Unfamiliar because the child lacks guidance, and therefore did not consciously observe, with the child's age, the child's curiosity increases significantly, and the child's ability to express the joy at understanding increases the more they do not know, when the child asks a question, it is a good opportunity to cultivate her ability to explore and is not directly to instill a large amount of knowledge, the focus is to let the child know that many mysteries are hidden in our lives (Dewaele, 2012).

The point is to let the child know that many things are hidden in all aspects of our lives and to encourage him to observe more and think for himself. Parents should choose questions; adults need to be consistent in their words and deeds; in practical action, they should be more concerned about the child's growth in all aspects of life.

4.3.3 Cultivate the Habit of Independent Inquiry and Learning

Family education is the root of cultivating good learning habits in children. We all know that 21 days can form a good habit, so it takes a process to help children develop a good habit of independent inquiry and learning. In the process of family education, parents should not help children complete every task or do things for their children that they could have done themselves. Parents should be patient in guiding the children, and encourage their children, so that they have self-confidence, can independently complete a learning task and in the process gradually cultivate the children's independent study habits, so that they realize that, without parental help, they can also explore and go alone (Ayaz & Gök, 2023).

When children encounter problems, their first reaction is not to seek help from their parents but to look for ways to collect information and solve problems. Of course, in this process, parents do not participate or interfere. If the child encounters bottlenecks or problems beyond their capacity, parents can offer tips but not directly solve the problem. This makes children aware that the problem-solving process is participatory and, when the problem is solved, helps them more deeply appreciate the joy of success (Shen, 2023). Cultivating children's habits of independent inquiry, the most important thing is to build children's self-confidence in inquiry. Parents are only a guide who appears at the right time to offer guidance. Parents must believe in the child, give the child space, and be good at inspiring the child. To stimulate the child's

curiosity and desire to learn about the unknown, and to be active and happy in exploring new knowledge. The child can learn about animals and their sounds through a picture book with a smart pen. Before the child comes into contact with these animals, they already know and understand them in real life and are able to answer questions (Tan & Fang, 2023).

4.3.4 Create a Suitable Family Environment

According to Rogers, a person's creativity can be maximized and developed only when he feels "psychologically safe" and "psychologically free. In the family, parents must create a relaxed, open, and democratic family environment for their children to establish a harmonious, equal, and trusting parent-child relationship. Only when the child's psychological security and freedom are established can the child be prompted to develop their creativity and learning potential (Robila & Taylor, 2018).

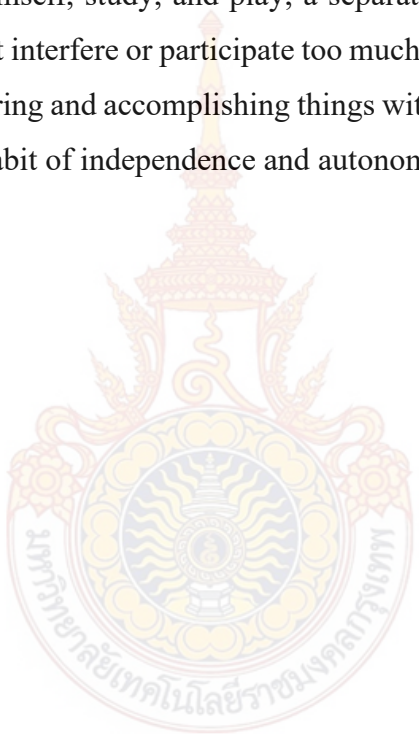
Creating a family environment for children, providing them with richer information resources, and creating an independent learning environment to cultivate the child's ability to explore are the goals. With the development of internet technology and electronic devices, an ideal environment for the child's independent investigation, with a wealth of information resources covering all aspects of knowledge, can be created. Its use can also create vivid, concrete, colorful images to help develop children's ability to explore. Without the support of information technology, it is difficult to ask primary school students to participate in the exploration of social and natural environments (Paul, 2024).

Parents need to learn to let go and give power to their children after providing them with the conditions they need, not to refuse access to the internet fearing they will be addicted to online games, not to allow their children to give up on things they do not like because of their own subjective will, and not to hope that their children will become what they want them to become. However, they should become what they want to become.

Parents need to create a space for their children to feel a sense of self-existence in the family. In short, they need to give their children a sense of belonging so they can explore and discover calmly and gently within the family (Kaveh, 2020). Many parents returning home from work do not realize they are always on their mobile phones, watching videos, live broadcasts, and shopping, which makes their children

reluctant to obey and even subconsciously question why their parents can use their phones all the time while they cannot. Parents may not set a good example for their children, yet they want their children to be better, which is illogical, especially among adolescent children (Vu et al., 2023). For children, especially adolescents, this is not convincing and may even trigger their rebelliousness. Parents must also be proactive in fostering a sense of belonging for their children, building a learning family, and cultivating a lifelong learning culture.

A small room should be arranged for the child at home, a room where the child can entertain himself, study, and play, a separate world belonging to the child, and parents should not interfere or participate too much so that the child can realize that he is capable of exploring and accomplishing things without the help of his parents, this cultivate the child's habit of independence and autonomy.



CHAPTER V
CONCLUSION

5.1 Summary

"Parents are the first teachers of their children!" If the parents' value orientation is problematic, then it will seriously affect the child's values. In a family where money and material things are regarded as paramount, and the parents are only concerned about whether they are giving their children enough material security, but care little about their children's spiritual life or emotional and psychological needs. The children tend to display negative behaviors to attract their parents' attention. If the relationship between parents or family members is not harmonious, the child's character will be seriously affected, and the child will think the problem lies with him or herself. The weak child wants to try to solve the disharmony but is unable to do anything about it, so when he or she grows up, he or she will desperately want to avoid that kind of disharmonious relationship between the parents or the family, or even be reluctant to start a marriage and step into the family life.

If a parent sits at the bottom of a well and looks at the sky, then the world that the child receives is only as big as the mouth of the well, but if the parent has a broad outlook, the child will see a great deal of the world, which directly affects the child's outlook and development. The importance of family education cannot be overstated. Parents have the role of accompanying children for a lifetime. From the moment the child is born, family education begins; the child's ability to explore various aspects depends not only on school education.

With modernity, technology, and progress, society has a need for more creative students. The requirements of modernity are placing demands on the traditional way of family education, as children cannot grow sufficiently to meet society's needs and gradually fall behind.

The child's ability to explore has become one of the conditions for children's development. Children with the ability to explore can innovate, create, and generate possibilities in the world. Support for information technology enables children to browse information-rich resources on the internet; all the knowledge and information

they want to search for can be found. In the process, children's ability to obtain information is enhanced.

5.2 Recommendation

The importance of information technology and family education in enhancing primary school students' inquiry ability is indispensable. Information technology within family education is important for enhancing family education. A person's life trajectory cannot be separated from the influence of family, school, and social education. Family education plays an important role in the development of a sound personality, and this role cannot be provided in school or in the general social environment. Regarding the social environment, information technology and family education, how to better promote primary school students' inquiry ability:

Be a modern parent. Among the four types of parenting put forward by Baumrind, authoritarian parents emphasize controlling their children and expect they obey, which results in children's dissatisfaction, withdrawal, and distrust of others; indulgent parenting results in children showing immaturity, lower self-control, and lack of exploratory ability, Parents who are absent during the child's growth process results in the child showing insecure attachment, easy to anger, aggression, behavioural disorders, and a series of other problems.

Modern parents respect the child during the formation of social values, reason with the child, and give the child a sense of security, self-reliance, self-control, and self-confidence. Modern parents need to be willing to expose their children to new experiences and to provide companionship and encouragement, all of which cultivate children's ability to explore. Therefore, we should be modern parents and raise children who can adapt to environmental changes.

Family education is not only within the family; opportunities for the child to encounter new experiences and the child's ability to explore are inseparable in practice. The wider the range of activities, the more objects of inquiry for the child, the deeper the child's ability to explore; daily life creates desirable and mysterious places, parks, supermarkets, and shopping malls, giving the child a broad range of experience.

Allow children to participate more in family life. The meaning of

participating more in family life here is giving greater consideration to children's ideas, respecting children's wishes, and listening to children's learning needs. Parents seek to create better living conditions for their children, good material conditions and environment, but a large number of parents are absent during the child's development, at the same time, the child may be absent from the parents during growth, each of us are developing and progressing, as a child, as a parent; spend more time with the child, know that the spiritual life of the child is more important than the material life. Life is more important than material things; we do not know what the child wants in their heart, but we know they long for the love of others, whether from loved ones or friends. However, the most important love is still from parents, so we should consider the child's ideas more, respect the child's wishes, and listen to the child's requirements. The child has an important role in family relationships.

In primary school the child's psychological development is immature, and emotionally unstable, the ability to distinguish between right and wrong is poor, the ability of self-control and the ability to withstand psychological challenges is not strong. On the internet, there is undesirable information, and children's discernment and identification are weaker. Parents should pay attention and learn to distinguish between favourable and harmful information. Parents should also control their children's internet time to help children establish a correct view of the internet world.

In short, children are full of curiosity and curiosity for new things, attentive parents will in the process of caring for their children, find that children pay more attention to certain things, things they are particularly interested in, parents guide the child to provide the child with more opportunities to pursue their interests, necessary for the enhancement of the child's ability to explore.

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APPENDICES

APPENDIX 1

Background and Elementary Students' Inquiry Skills Survey

Welcome to the Teaching and Learning Strategies Questionnaire. This questionnaire aims to gather insights into students' inquiry skills using information technology. Your participation in this survey is greatly appreciated, as it will significantly contribute to our understanding of teaching from the educator's perspective.

Your responses will remain strictly confidential, and your individual answers will not be released to the school or its administration. Your professional experiences and opinions are crucial to this study, and we value your time and effort in completing this questionnaire.

To ensure accurate data collection, please tick the most appropriate response for each question.

Thank you for your participation and support. We look forward to learning from your experiences and opinions.

Best regards,

Li MA

Teacher Questionnaire

Section I: Personal Information

Name:

Years of teaching experience:

INSTRUCTIONS

Instructions: Please circle the most appropriate response for each question.

Section II: Student Inquiry Skills

A. Always **B.** Often **C.** Sometimes **D.** Never

Does your student meet the following criteria:	**A**	**B**	**C**	**D**
1. My students actively seek information to answer their questions.				

Does your student meet the following criteria:	**A**	**B**	**C**	**D**
2.My students use technology tools to aid their inquiries.				
3. My students work collaboratively on inquiry projects.				
4. My students can identify relevant information from online sources.				
5. My students ask follow-up questions to deepen their understanding.				
6. My students evaluate the credibility of information they find.				
7. My students present their findings in creative and engaging ways.				
8. My students understand the importance of using online resources.				
9. My students are comfortable with making mistakes and learning from them.				
10. My students are motivated to explore topics beyond the classroom curriculum.				
11. My students use critical thinking skills when analyzing information.				
12. My students understand the connection between real-world problems and their inquiries.				
Concerning computer technologies for education:				
13. How often do you encourage students to use technology in their inquiries?				
14. How do you support students' development of inquiry skills?				
15. In your opinion, what are the benefits of technology in fostering student inquiry?				
16. What challenges do you face when integrating technology into inquiry-based learning?				
17. How do you evaluate students' inquiry skills?				

Section III: Teacher Practices in Inquiry Skills of Students

Parent Questionnaire

Section I: Personal Information

Name:
Child's name:
Child's grade level:

INSTRUCTIONS

Instructions: Please answer the following questions in detail.

Section II: Child's Inquiry Skills at Home

Describe how your child shows interest in exploring new topics or concepts.
1. Has your child used technology to research or learn about something they were curious about? If so, please provide an example.
2. How does your child react when faced with a problem or challenge?
3. How does your child seek help or information when they encounter something they do not understand?
4. Has your child ever presented their findings to you or other family members? If so, please describe the experience.

Section III: Parent Practices in Inquiry Skills of the Child

1. How do you support your child's curiosity and desire to learn?
2. In your opinion, what role does technology play in fostering your child's inquiry skills?
3. How do you encourage your child to be independent and self-directed learners?
4. Are there any challenges you face in supporting your child's inquiry-based learning at home?

Thank you very much for taking the time to complete this questionnaire!