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In support of our mission, there are no fees to submit or publish manuscripts so that cost will never be a barrier. Typeset and graphics are intentionally simple in order that the journal can be more easily accessed on a variety of devices worldwide to fulfill the mission of the journal.

I hope that the practices discussed in this journal will be helpful to you, our readers.

Sincerely,

Ann Cancilla Gaudino, Ed.D., Founder and Editor-in-Chief
eejeditor@gmail.com

With gratitude to our reviewers who serve the journal:

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Pathways to College: The Intersection of Race, Family, and Community on Rural Students' College Aspirations

La Toro Yates* and Eunyoung Kim

**Corresponding author*

Abstract

The Intersection of Race, Family, and Community on Rural Students' College Aspirations, examines the factors shaping rural students' college aspirations, with a focus on racial disparities between white students and students of color. Through a case study of Sadie Foster High School, the research explores how race, family support, and community resources shape students' educational trajectories. Findings reveal that white students often benefit from cultural capital and family advocacy, which help them secure advanced academic opportunities, while students of color face additional barriers, such as limited access to academic guidance and resources. The study underscores the importance of culturally responsive education policies and equitable access to postsecondary preparation in rural schools, which is crucial to improving educational outcomes and fostering equity in college access for all rural students. These insights provide a deeper understanding of how race and community influence the college pathways of rural youth and highlight the need for systemic interventions to address these disparities.

Keywords: Rural Education, College Aspirations, Educational Equity, Race and Higher Education, Cultural and Social Capital, Parental Advocacy, School Tracking, Rural-Urban Disparities, College Choice Process

La Toro Yates, Ph.D. *is Vice President of Enrollment Services at Kean University. Dr. Yates can be reached at drlatoroyates@gmail.com*

Eunyoung Kim, Ph.D. *is Lecturer at Korea University. Dr. Kim can be reached at Eunyoung.key.kim@gmail.com*

Introduction

In the United States, a persistent educational attainment gap exists between white students and students of color, reflected in disparities in college access and academic achievement. White students are more likely to attend college, while students of color often face greater barriers, resulting in lower high school graduation rates and decreased college enrollment (Chang et al., 2014; Grubb, 2013). These challenges are compounded by lower standardized test scores and a higher likelihood of being placed in lower-track classes.

This educational gap is not limited to urban areas; it also affects rural communities, which have been underrepresented in discussions of educational inequality. According to the National Center for Education Statistics (NCES), in fall 2022, 27% of public schools were located in rural areas, serving 18% of all public-school students in the United States. Despite the significant number of students in rural schools, research on their educational experiences and college access remains limited.

Rural schools face unique challenges that hinder their ability to provide a high-quality education. These schools are often underfunded compared to their urban and suburban counterparts, struggling to provide essential resources such as textbooks, technology, and qualified teachers (Auldridge-Reveles & Tippins, 2021; Marietta & Marietta, 2020). Additionally, rural schools frequently face a shortage of qualified educators, making it difficult to hire and retain high-quality teachers (DeYoung, 2005). Limited access to services like libraries, counseling, and mental health support further exacerbates the challenges rural students face (Marietta & Marietta, 2020). The geographic isolation of rural areas also restricts professional development opportunities for teachers, impacting their effectiveness (Auldridge-Reveles & Tippins, 2021).

The socio-economic landscape of rural areas, marked by higher poverty levels, places additional burdens on rural schools. Economic disadvantage contributes to feelings of isolation among students, which can diminish their academic engagement and aspirations (Marietta & Marietta, 2020). This reality is reflected in standardized testing outcomes, where only 32% of rural fourth-graders score at or above the proficient level in reading, compared to 38% of urban and suburban students (National Center for Education Statistics, 2020). This trend continues into postsecondary education, with only 54% of rural high school graduates pursuing college within six months of graduation, compared to 64% of urban and 67% of suburban graduates (National Student Clearinghouse Research Center, 2023).

The pathways to college for rural youth are shaped by a complex interplay of individual, familial, and community factors, with distinct experiences for white students and students of color. While many rural students, regardless of race, have high aspirations, their access to resources and opportunities is often limited, with students of color facing additional systemic barriers (Byun, Meece, & Irvin, 2012). Geographic isolation restricts exposure to diverse educational and career opportunities, influencing rural students' decision-making processes regarding postsecondary education. Students of color, in particular, may face complex challenges due to racial and cultural dynamics in these areas (Corbett, 2007). For instance, Griffin et al. (2011) found that white rural students were more likely to rely on parents or guardians as key sources of information about

future plans, while Black and Hispanic students were more likely to cite teachers and other community figures, such as coaches or religious leaders, as influential.

Parental support and encouragement are crucial in navigating postsecondary pathways, but these can vary significantly across racial groups due to differing cultural, social, and economic factors. The economic status of a family in a rural area can heavily influence a student's ability to pursue postsecondary education, with students of color disproportionately affected by financial constraints and the pressure for immediate employment after high school (Tieken, 2014). Community resources, such as mentorship and guidance from teachers and local leaders, play a vital role in supporting students, but students of color may face additional barriers in accessing these supports due to racial and cultural divides in predominantly white rural communities (Carr & Kefalas, 2009). Cultural norms around education and employment in rural areas can further shape or limit students' college aspirations, with varying implications for white students and students of color (Howley, Howley, & Johnson, 2014).

Moreover, rural schools often have limited access to advanced coursework, extracurricular activities, and college counseling, all of which are critical for preparing students for college. These limitations may have a more pronounced effect on students of color (Petty, 2014). Despite extensive research on rural education, there is a significant gap in studies examining how these factors evolve over time, particularly concerning racial disparities. By exploring the changing dynamics and specific challenges faced by different racial groups, this research aims to provide valuable insights into the distinct experiences of white and minoritized students in rural areas. This approach highlights the importance of considering both racial and longitudinal perspectives to better understand and improve the educational pathways of rural youth.

While existing research has highlighted the challenges rural students face in accessing postsecondary education, it often overlooks the intersection of race, family, and community. Much of the literature tends to generalize the rural experience, failing to account for the distinct differences between white students and students of color. Additionally, the evolving demographics and economic conditions in rural areas, such as increasing racial diversity, have not been thoroughly examined in relation to educational attainment.

This study addresses these gaps by exploring how individual, familial, and community factors intersect to shape the educational pathways of rural youth, with a particular focus on the differences and challenges faced by white students and students of color. By investigating these nuanced dynamics, this research aims to deepen our understanding of the barriers to college access in rural areas, emphasizing the importance of considering both racial and longitudinal perspectives to improve educational outcomes for rural youth.

Purpose of Study

The purpose of this study is to gain a deeper understanding of the interplay of individual, familial, and community factors that shape the postsecondary educational pathways of rural youth, with a particular focus on understanding the nuanced differences and unique challenges faced by white students and students of color.

Research Questions

What are the key barriers impacting college aspirations among rural youth, and how do these challenges differ between white and black students?

In what ways can familial and community resources support the college aspirations of students in a rural school, and does this support differ for white and black students?

Literature Review and Theoretical Framework

The pathways to college for rural youth are shaped by a complex interplay of individual, familial, and community factors. These influences vary significantly across different racial groups, with white students and students of color experiencing distinct challenges. This literature review explores these factors through the lenses of familial and community influences, multicultural navigators, cultural capital, social capital, and funds of knowledge. Together, these perspectives provide a comprehensive understanding of the barriers and opportunities that shape rural students' postsecondary aspirations.

Familial and Community Influences

Educational barriers in rural contexts are deeply embedded in the socio-economic and institutional structures of rural life. Geographic isolation, economic scarcity, and insufficient institutional support significantly impact the educational experiences of rural students (Irvin et al., 2012). These challenges are systemic, reflecting broader structural and relational issues that extend beyond individual circumstances. Byun, Meece, and Irvin (2012) introduced the concept of social capital, emphasizing the critical role of both familial and scholastic environments in shaping rural students' educational ambitions. This dual nature of challenges—structural, such as economic adversity and inadequate school resources, and relational, including family engagement and teacher expectations—underscores the complexity of the educational landscape in rural areas.

The family's role is a recurrent theme in the literature, recognized for its potential to both support and hinder educational aspirations. Agger et al. (2018) explored gender dynamics within rural families, finding that rural female adolescents often exhibit higher academic achievements and aspirations, significantly influenced by parental expectations. This gender-specific perspective aligns with Byun et al.'s (2012) findings, which highlight the positive impact of family discussions and parental expectations on students' educational goals.

However, Nelson (2016) offers a nuanced view, suggesting that while familial support is common, it often lacks the specificity required to effectively navigate the higher education landscape. This observation aligns with Byun et al.'s (2012) assertion that both family and school settings are crucial in fostering educational aspirations among rural students. The challenge lies not only in providing support but in ensuring that this support is well-informed and actionable.

Multicultural Navigators

Carter (2005) introduced the concept of the "multicultural navigator" to describe individuals who help students, particularly those from minoritized groups, excel in environments that may not inherently promote equal opportunities. These navigators possess both dominant and non-dominant cultural capital, guiding students in balancing their cultural identities with their aspirations for higher education. This concept contrasts with Ogbu's (1979, 1990, 1995a) theory that involuntary minorities may exert less effort in schooling due to a perceived lack of future opportunities. Instead, Carter (2005) argues that while these students recognize the importance of educational success, they resist sacrificing their cultural identities to achieve it.

Multicultural navigators are particularly crucial for Black students, who often emphasize their cultural and racial identities as sources of pride. However, these traits are frequently undervalued by educational gatekeepers, such as school administrators and teachers (Young, 2011). When gatekeepers perceive a Black student's academic abilities as lacking, they may mistakenly interpret cultural expressions as a rejection of academic excellence (Carter, 2005). Carter categorizes Black students' engagement levels into three groups: cultural mainstreamers, who embrace dominant cultural norms while acknowledging their racial identity; cultural straddlers, who navigate school's cultural expectations while maintaining their cultural identities; and noncompliant believers, who show disparities between their beliefs, school engagement, and achievement.

Noncompliant believers often face academic disengagement due to internalized low expectations from educators, limited exposure to positive minority representations in the curriculum, and placement in lower-level classes. Despite these challenges, Carter (2005) suggests that their commitment to cultural and racial values provides a sense of belonging and a coping mechanism in schools where resources are scarce. Multicultural navigators bridge this gap, equipping Black students with the tools to succeed within the dominant culture while cherishing their cultural roots. This approach fosters a more inclusive and equitable environment, crucial for the holistic success of Black students (Carter, 2005; Hill, 2009).

Cultural Capital

Pierre Bourdieu (1986) introduced the concept of cultural capital, which refers to the non-economic assets individuals possess—such as knowledge, skills, and cultural experiences—that can be used to gain access to power, prestige, and opportunities. Bourdieu posited that cultural capital is unevenly distributed in society, with advantaged groups having greater access to it than disadvantaged groups. This disparity perpetuates a cycle of inequality, where those with more cultural capital are more likely to succeed academically and professionally, while those with less struggle in school and are at greater risk of dropping out.

Minoritized students, including Black, Latino, and Native American students, often come from disadvantaged backgrounds and have less access to cultural capital than their white peers. This disadvantage significantly affects their college access and success. Arum and Cohen (2007) and Carnevale and Rose (2004) found that students from families with higher levels of cultural capital are more likely to attend selective colleges, even after controlling for factors such as

standardized test scores and family income. These findings underscore the critical role that cultural capital plays in college access for students of color. Students whose parents are familiar with the college admissions process and can provide guidance and support are more likely to succeed in school and continue to higher education.

Social Capital

Social capital, defined as the resources embedded in social networks and relationships, emphasizes the importance of social connections, trust, and reciprocity in fostering cooperation and facilitating collective action. Coleman (1988) highlighted how social connections and networks contribute to collective benefits, such as educational success.

The interplay between cultural capital and social capital is well-recognized in the literature, with scholars acknowledging that these concepts are interconnected and mutually reinforcing (Lamont & Lareau, 1988). Bourdieu (1984) argued that cultural capital is not static; it can be enhanced and transmitted through social networks and interactions. Conversely, social capital can facilitate access to cultural resources and educational opportunities, enriching our understanding of how social networks influence an individual's cultural knowledge and tastes, and how cultural capital influences the formation and maintenance of social networks.

This intersection of cultural and social capital underscores the cumulative advantages or disadvantages individuals may experience, contributing to the perpetuation of social inequality. Those with higher cultural capital are better equipped to navigate and succeed within social institutions, such as schools and the labor market, as their resources and dispositions align with dominant cultural norms. In contrast, individuals with limited cultural capital face barriers and limitations in accessing opportunities and resources.

Funds of Knowledge

The concept of "funds of knowledge" was first introduced by Vélez-Ibáñez and Greenberg (1992) in their study of Latino children's cultural identity construction. This framework has since been expanded to explore how families and communities support students' academic success, particularly among underrepresented student groups (Moll et al., 1992; Vélez-Ibáñez & Greenberg, 2005). Funds of knowledge encompass a broad array of knowledge, skills, competencies, and community resources that households acquire through social interactions. These include aspects such as household language, educational values, sociohistorical labor practices, and household routines (Rios-Aguilar et al., 2011).

By emphasizing the exchange and transformation of knowledge and skills within social networks, the funds of knowledge framework challenges deficit perspectives that blame academic underachievement on students' households and communities (Hogg, 2010). Research using this framework has shown how teachers can incorporate students' funds of knowledge into curriculum design and pedagogical practices to create culturally responsive and relevant learning experiences (Andrews & Yee, 2006; Gonzalez, 2005; González et al., 2019; Paris & Alim, 2017). Moreover, the application of funds of knowledge has been extended to examine transitions to college among underrepresented student groups, exploring how these funds, when connected to social capital and

community interactions, influence college aspirations and educational outcomes (Bensimon, 2007; Kiyama, 2010; Rios-Aguilar & Kiyama, 2012; Kiyama & Rios-Aguilar, 2017).

In this study, we adopt a theoretical framework that integrates cultural and social capital with funds of knowledge. According to Rios-Aguilar et al. (2011), combining different forms of capital with funds of knowledge can provide a more comprehensive understanding of the educational attainment of underrepresented student populations. Relying solely on a singular capital perspective risks perpetuating the privilege of dominant groups and fostering a have-or-have-not mentality regarding capital resources. Additionally, focusing exclusively on the funds of knowledge embedded in households may overlook the power dynamics and educational structures that influence educational opportunities and access for underrepresented students.

By integrating funds of knowledge with various forms of capital, our research aims to provide deeper insights into the factors influencing the college aspirations and educational trajectories of rural youth. This approach allows us to explore how students and their families navigate the educational landscape and identify potential opportunities for fostering more equitable educational outcomes. Our goal is to offer a nuanced understanding of how students' college aspirations and educational trajectories may diverge, emphasizing the critical role of funds of knowledge in shaping their educational journeys. Furthermore, this approach addresses systemic inequities by challenging deficit perspectives and recognizing the valuable contributions of minoritized students.

Methods

This study employed a longitudinal qualitative case study design to investigate the college selection process of rural high school students. This approach was chosen because it allows for an in-depth exploration of the complex and evolving factors that influence students' educational trajectories over time. By focusing on a single rural high school, the case study method enables a detailed examination of the intersection of race, family, and community in shaping students' postsecondary aspirations.

Research Site: Sadie Foster High School

Sadie Foster High School (pseudonym) was selected as the research site due to its unique demographic and socio-economic characteristics, which make it representative of the broader challenges faced by rural schools, particularly those serving racially minoritized students. Located in a small rural city in the mid-Atlantic region, Sadie Foster High School serves a predominantly Black student population (63.9%) within a district that is among the 30 poorest communities in the state. The school's demographic profile, combined with the challenges associated with rural education—such as geographic isolation, economic scarcity, and limited access to resources—mirrors trends observed in rural schools across the United States, making the findings relevant to similar rural settings nationwide.

Student Body and Socioeconomic Indicators

The student body at Sadie Foster High School ranges from 350 to 400 students annually, with Black students constituting 48.9%, White students 32.2%, and Latino students 16.5%. Approximately 20% of the students have disabilities, and 44.4% qualify for free lunch, highlighting the economic challenges faced by many families.

Academic Track and Achievement

Sadie Foster High School's academic programs are notably divided along racial lines, with White students predominantly enrolled in the Honors and International Baccalaureate (IB) programs, while Black students are more frequently placed in the College Preparatory track. This division becomes evident as students enter ninth grade, reflecting broader systemic issues within the school's academic placement processes.

Participant Selection Criteria

Participants were selected using purposive sampling to ensure a diverse representation of the student body and school staff, focusing on those directly involved in the college selection process. This sampling method was chosen because it allows for the intentional selection of individuals who can provide rich, relevant data that align with the study's objectives.

Nine students were selected to capture a range of experiences across different racial backgrounds, academic tracks, and achievement levels. The sample included both black (n = 4) and white (n = 5) students, ranging from ninth to eleventh grade (ages 14-17). This selection reflects the racial diversity of the school and includes students at various stages of their high school careers. Additionally, students from both the College Preparatory and Honors/IB programs were included to capture differences in academic experiences and postsecondary aspirations. The inclusion of students with varying academic performance, from high achievers to those with lower academic standing, provides a comprehensive view of the factors influencing college aspirations.

Three guidance counselors were selected based on their roles in advising students on academic and college-related matters. The counselors were chosen to represent different levels of experience and interaction with the student body, ensuring a broad perspective on the guidance process at Sadie Foster High School. Their insights were critical for understanding how institutional practices and counselor-student interactions influence the college selection process.

Representation of the Larger Student Body

The selected participants are representative of the broader student population at Sadie Foster High School in terms of racial demographics, academic tracking, and socio-economic status. This purposive sampling approach allows for an exploration of the varied experiences of students within the school, providing a nuanced understanding of how these factors intersect to shape college aspirations.

Data Collection

Data were collected over three years using multiple methods to capture a comprehensive view of the college selection process at Sadie Foster High School. The longitudinal nature of the study allowed for the observation of changes and developments over time, providing a deeper understanding of the factors influencing students' postsecondary trajectories.

Focus group interviews were conducted with students to explore their experiences and perceptions regarding the college selection process. These interviews provided a platform for students to discuss their aspirations, challenges, and the role of their families and communities in their educational journeys.

Individual interviews were conducted with guidance counselors and the school principal to gain insights into the institutional practices that shape students' college choices. These interviews allowed for a more detailed exploration of how school policies and counselor practices impact different student groups.

The study also involved the analysis of school data, report cards, and internal school documents. This method provided objective data on academic performance, enrollment in advanced courses, and postsecondary outcomes, which were used to triangulate findings from the interviews.

Data Analysis

Data analysis was conducted using thematic coding, a method that allows for the identification of patterns and themes across the data. The process involved multiple readings of the transcripts and documents to ensure a thorough understanding of the material. Coding was conducted with the aid of HyperResearch software, which facilitated the organization and analysis of the data.

Thirty coding categories emerged from the data, reflecting various aspects of the college choice process, including perceptions of counselor influence, parental impact, and individual strategies for navigating postsecondary education. Each participant's data were initially treated as a distinct case, contributing to rich narrative accounts of their experiences. Subsequently, codes were clustered into broader categories, with less frequent themes either merged or discarded to focus on the most salient issues.

Ensuring Quality and Rigor

To ensure the quality and rigor of the data analysis, the study employed qualitative criteria such as credibility, transferability, dependability, and confirmability (Lincoln & Guba, 2011; Marshall & Rossman, 2010). Credibility was enhanced through triangulation of data sources and peer debriefing to minimize researcher bias. Transferability was addressed by providing detailed descriptions of the research site and context, allowing readers to determine the applicability of the findings to other settings. Dependability and confirmability were achieved through careful documentation of the research process and maintaining an audit trail of decisions made during data collection and analysis.

Limitations

While the selected school is representative of certain rural contexts, the unique demographic and socio-economic characteristics of Sadie Foster High School may not fully capture the diversity of experiences in other rural settings across the country. Future research could benefit from including multiple schools in different geographic regions to enhance the generalizability of the findings.

The purposive sampling method, while effective for capturing in-depth perspectives, resulted in a relatively small sample size. With only nine students and three guidance counselors participating, the study may not reflect the full spectrum of experiences within the school. A larger sample could provide a more comprehensive understanding of the factors influencing college aspirations among rural youth.

The data were collected over a three-year period, which provides valuable longitudinal insights but may also limit the study's relevance over time. Educational policies, economic conditions, and community dynamics can change, potentially altering the factors that influence college aspirations. Therefore, the findings should be interpreted within the specific temporal context in which the study was conducted.

While the study explored familial and community influences, it primarily focused on academic and institutional factors within the school setting. Other external factors, such as state and federal education policies, local labor market conditions, or broader societal influences, were not extensively examined but could play a significant role in shaping students' postsecondary trajectories. Including these factors in future research could provide a more holistic understanding of the barriers and opportunities facing rural students.

The study relied heavily on self-reported data from students and counselors, which may be subject to biases such as social desirability or recall bias. Participants might have provided responses that they believed were expected or may have had difficulty accurately recalling past experiences. Triangulating self-reported data with additional sources, such as observational data or more extensive document analysis, could strengthen the study's findings.

While the study focused on racial disparities and the experiences of both white students and students of color, it may not fully capture the cultural nuances and intersectional identities within these groups. For example, the experiences of Latino students were included but not deeply explored due to their smaller representation in the sample. Future research could delve deeper into the specific cultural and racial dynamics that influence educational outcomes for different groups within rural settings.

Findings

Undertone of Structured Racial Practices in Academic Placement

The findings of this study reveal an underlying pattern of structured racial practices within the academic placement processes at Sadie Foster High School. This section explores how these practices, which manifest through academic tracking systems and enrollment in advanced programs, contribute to disparities in educational opportunities and outcomes for students based on their race.

Upon entry to Sadie Foster High School, students were placed into either "honors" or "academic preparation" track unless they were inclined to pursue a vocational training. The undertone of structured racial practices within the office of guidance counseling in Sadie Foster high school seemed to significantly impact Sadie Foster High School students' postsecondary aspirations. Racially marginalized students may face limited access to resources and opportunities, lowered expectations, and insufficient support in navigating the college application process. However, students in the honors class or IB program started their college search process as early as their first year in high school.

Sadie Foster High School received incoming freshmen from four neighboring middle schools within the district. One school was in the city of Sadie Foster and the other three schools were in small rural towns surrounding Sadie Foster. The majority of black students came directly from Sadie Foster Middle School, while the majority of the white students came from the three rural towns in the district. The student population at Sadie Foster High School consistently precipitated over the past couple of years because of the school choice program that allowed approved districts to enroll students outside of the district at no cost to parents. The negative reputation of the city of Sadie Foster became the factor influencing why white parents from the rural sending districts were reluctant to send their children to Sadie Foster High School. The counselors talked about a percentage of white students who were supposed to attend Sadie Foster High School, but the parents decided on other school options because of the reputation of the city and the perceived lack of academic quality of the school. Hazel stated:

> Although Sadie Foster is a predominantly Black city, our sending districts are predominantly White; so, at one time the Black population was the minority here. The changes started with the academies, choice, and all of the other stuff…we call it *White flight.* It started with folks trying to go to the vo-tech school; and as the opportunities opened, they could go to more high schools where the diversity wasn't as great.

The perceived image of Sadie Foster High School as academically low performing school was exacerbated by the school safety issue. Paris explained:

> There was a gun issue years ago; a student brought a gun in the school…and of course that had made the paper. Since then, we have boosted up security; we have a resource officer that is a certified police officer. We also have a retired state trooper as a security officer at our front door now, so there is no reason…we have heard rumors that people think that it is not safe here, and that's not the case.

Sadie Foster High School's guidance counselors visited the four middle schools in the district near the end of each school year to register students for their ninth-grade classes. These students were either placed in College Preparatory (no GPA or test score requirements) or Honors (the students must have A's and B's in all their classes and score Advanced Proficient on at least one section of the State examination). The students in the Honors cohort were allowed to enter the IB program for their junior and senior year.

However, there are a disproportionate number of white students who were placed into the *upper level classes* compared to black students at Sadie Foster, primarily because of the test score requirements and the aggressive tactics used by White parents to get their children into the program. White parents also advocated to have their children in the Honors/IB classes to segregate them from students who came from the city of Sadie Foster. Hazel continued, "A lot of times the kids [White] were in the upper level courses because parents felt that there will be less diversity in those classes." Paris also explained that white parents had the perception that students in the College Preparatory classes were less motivated to succeed, so they would advocate to make sure their children were in the Honors/IB program even if they did not meet the academic criteria for the program. The College Prep classes were not for college-bound students; these classes were just ordinary students who were neither on vocational education track nor on college track:

> So their kids [White] would be separated in those classes [Honors] from those kids [Black] that were in general classes, because the kids in general are lower…and not as focused; teachers don't work as hard, and the whole nine yards. So, we said, 'If a kid wants to be in Honors, they have to work on that level,' and we have had kids in the middle schools that teachers recommended them for College Preparatory, but the kid wanted honors. We tell them and the parents, 'We will let them take a shot at it…we will put them in even before the test scores come back, but if they find that they cannot hang, we are going to take them out.'

While Sadie Foster had cutoff criteria for enrolling students in Honors or IB courses, white parents often advocated for their children to be placed in these courses regardless of meeting the cutoff. Hazel stated:

> We can't tell a student not to take AP or Honors…but if a parent's child didn't make the test cutoff, a parent can say, 'I still want my child to take Honors,' and say, 'The student has all A's and B's and one C.' The parent will argue with principal and say, 'I don't care if my child didn't make the cutoff,' and he will say, 'If you think your child can handle the work,' and he will let them do it because guess what? … the bottom line is it is their child. The parents argue that 'Yes, my child had a C,' and I've seen it where he let the parents win.

Principals may concede to these requests if parents strongly believed their child could handle the coursework, highlighting that parents ultimately had significant influence over their child's educational placement.

The tracking system and enrollment disparities in advanced programs revealed how institutional practices can perpetuate racial inequities in educational opportunities and outcomes at Sadie Foster. Sadie Foster High School manifested the insidious ways in which racial biases and structured racial practices can permeate process, perpetuating disparities in educational opportunities and outcomes.

Mediating Role of Guidance Counselors

Guidance counselors at Sadie Foster High School played a crucial role as mediators between students, families, and the school system. Their practices and interactions with students and parents differed based on race, highlighting the complex dynamics at play in the guidance counseling process. As potential gatekeepers, guidance counselors incorporated students' and families' knowledge into their guidance practices, which significantly fostered students' college aspirations. However, they rarely engaged in constructive dialogues with Black parents regarding their children's college aspirations or plans. Consequently, guidance counselors may find themselves compelled to reinforce dominant schooling practices that tend to favor White students' and families' demands.

White students entered Sadie Foster High School with a significant advantage, having had access to valuable 'Funds of Knowledge' during their middle school years. Funds of Knowledge refers to the knowledge, skills, and resources that students accumulate through their interactions with teachers, counselors, and administrators. These interactions provided White students with a clear understanding of the process to gain acceptance into the Honors/IP program at Sadie Foster High School.

Middle school teachers and counselors encouraged white students to take advanced academic courses based on their benchmark scores on state examinations. This knowledge allowed white students to strategically plan their high school coursework, such as opting out of or doubling up on certain classes, to better position themselves for acceptance into the IB program and advanced placement (AP) courses, ultimately increasing their chances of admission to four-year colleges. Student J, a White student, explained her plan to take advanced classes in high school:

> I took Algebra I in eighth grade, cuz you had like, if you scored a really high score on the Seventh Grade New Jersey Ask Test, then you get the option to take Algebra I in eighth grade. So I took that.

Student A echoed the Student J's comments, "At my old school the teachers always took an interest in their students, … my teachers [middle school] they would say, 'We are going to put you in this enrichment program."

In contrast, black students entering Sadie Foster High School were not advised by their middle school teachers and counselors to take advanced academic courses or put into enrichment

programs as a strategy to enhance their chances of entering the Honors/IB program. As a result, the majority of black students were placed in the less academically rigorous College Prep track. Some high-achieving black students did benefit from "Multicultural Navigators," individuals who helped them navigate the Honors/IB and college-choice process. However, for many black students, this support came too late to significantly impact their chances of being accepted into the Honors/IB track. Student G said:

> I'll have to agree with her that academics, the rates at this school [Sadie Foster High School] is different districts coming to this school and like Seminole Middle School [rural district] would be on a different level than Sadie Foster for middle school level. Like we learn different things, like we are on different levels when we come to this school and it's hard to combine all the students in one school, like somebody could be on like eighth grade level and then there is one student could be on tenth grade level and it's hard to combine all these together.

Guidance Counselors at Sadie Foster High School faced numerous challenges in their daily work, including a heavy emphasis on helping struggling students graduate, which often took precedence over college counseling and other responsibilities. This focus, mandated by the school superintendent, left little time for counselors to provide targeted support to middle- and high-achieving students. Hazel lamented:

> The students get multiple opportunities, as many times as they want to start over and get it done…the teachers, principal, and superintendent will work with them. I have found that we have to exhaust every possibility because if you don't, that one parent will come back and say, 'You didn't do this.' The students are told to 'go around and see your teachers, get your work,' and we will let them try it. Some of the teachers might get mad, but they give them all of the work and the kid might come another two weeks and work for another two weeks. The same pattern happens because they just can't keep it up; the pattern starts over.

The findings in this section underscore the critical role that guidance counselors play in shaping students' educational trajectories and college aspirations. The disparities in guidance counselors' practices and interactions with students and parents based on race emphasize the need for culturally responsive and equity-focused approaches to school counseling. Addressing racial disparities in education requires not only examining institutional structures but also supporting guidance counselors in developing the skills and knowledge necessary to effectively serve diverse student populations and promote equitable outcomes.

Ultimately, the experiences and challenges faced by guidance counselors at Sadie Foster High School highlight the urgent need for systemic changes in school counseling practices to ensure that all students, regardless of race, have access to the support, resources, and opportunities they need to thrive academically and pursue their college aspirations.

Student-Teacher Relationships and Academic Support

The quality of student-teacher relationships and the level of academic support students receive play a crucial role in shaping their educational experiences and postsecondary aspirations. At Sadie Foster High School, these relationships were significantly influenced by the students' race and academic track. White students in the Honors and IB programs reported having close, supportive relationships with their predominantly white teachers. These students felt comfortable discussing their college plans and career options with their teachers who provided personalized guidance and encouragement. Student A, a white student in the Honors program, expressed her appreciation for the personal interest her teachers took in her future:

> I like it when teachers take a personal interest and when they kind of expect things of me, because it makes me feel like I am not just another student or they are actually caring about what I am doing in my future.

This level of support and individualized attention from teachers was less evident among black students, particularly those in the College Preparatory program. These students often reported a lack of cultural connection with their white teachers, which hindered the development of strong, supportive relationships. Student B, a black student, described the cultural disconnect she experienced with her teachers:

> Sometimes, it does [matter if a teacher is White or Black]. Because I haven't had an black teacher since in the middle school, and in high school, it's like a little different. I feel, sometimes more comfortable [with an Black teacher] because it is somebody that's culturally, it's like *connection.*

The disparities in student-teacher relationships and academic support across racial lines and academic tracks had significant implications for students' educational experiences and postsecondary aspirations. White students in the Honors and IB programs benefited from strong, supportive relationships with teachers who actively encouraged their pursuit of higher education and provided guidance throughout the college choice process. In contrast, black students, particularly those in the College Preparatory program, often lacked access to the same level of support and guidance from their teachers, which may have limited their exposure to postsecondary options and hindered their college choice process.

Student-Counselor Interactions and College Guidance

Guidance counselors play a vital role in providing students with information, support, and guidance throughout the college choice process. At Sadie Foster High School, the nature and frequency of student-counselor interactions varied significantly based on students' race and academic track. Black students, particularly those in the College Preparatory program, reported having more frequent and positive interactions with guidance counselors compared to their white counterparts in the Honors and IB programs.

Student G, a black student, described how her guidance counselor regularly monitored her academic progress and steps in the college application process:

> Well, my guidance counselor is always on me, he'll call me down, talk to me about my grades, tell me what I need to take. I need to take my SATs on Saturday, he called me down for that…making sure I have my papers in on time, like my grade is low, he calls me down, he's like, you should fix this. You could do better at that.

In contrast, white students in the Honors and IB programs expressed less reliance on guidance counselors for college information and support. These students often felt self-sufficient in their academic journey and only sought assistance from counselors for administrative tasks, such as scheduling classes. Student J, a white student in the Honors program, explained her limited interactions with her assigned guidance counselor, "I usually don't go to the Guidance office a lot because I don't really need guidance. But I only, I usually only go if they call me down or if I need to schedule classes."

Black students, particularly those in the College Preparatory program, benefited from the individualized attention and support provided by guidance counselors, which helped them navigate the complex college choice process. However, the limited engagement of white students in the Honors and IB programs with guidance counselors may have resulted in missed opportunities for additional support and guidance, especially for those who may have needed more assistance in navigating the college choice process.

Parents' Role During the College Choice Process

The guidance counselors described their interaction with parents and how the parents' relationship with the school was often established along racial lines. The guidance counselors pointed out that advocacy was important to parent involvement for their children to succeed academically and navigate the college choice process.

White parents were often described as aggressive advocates for their children to be in the Honors program, which in turn led to acceptance into the IB program during the student's junior year. In some cases, the white students were not academically qualified to be in the program, but the parents understood that by visiting the school and speaking with the school administration including principal, their child had a better chance of being put into the Honors program. For example, Tom stated:

> To me it's interesting; we have parents that are all the way overbearing, and we have the ones you never meet no matter what. I would say there is a difference… with the non-minority, there is definitely more involvement it seems. I have some parents from the sending districts [White rural areas] that I just see them all the time.

The counselors commented that white students in the school were willing to take more rigorous courses and want to be in the Honors and IB program because their parents worked vigorously to make sure the students were in the "upper level" programs. These parents believed that the college preparatory program did not adequately prepare students for college-level work such as a drop-off in the curriculum and a lower quality of teaching. The parents also understood that the students need to be exposed to the best curriculum the school provides to be adequately prepared for college admission and academic achievement.

On the other hand, black parents were not described by the Sadie Foster guidance counselors as proactive advocates for their children to gain acceptance into the Honors and IB programs. Tom said, "When we see black students' parents, it is normally because of a problem. Some of the parents of the city kids you just can't get them to come in here [school]…well, for regular things anyway…just discipline or attendance issues," Tom explained the challenges of getting responses from parents despite offering numerous informational events. Paris described a different approach to working with black parents who would not come to the school:

> I live in the community so I know some of the families and some I don't. I try to meet as many of the families as possible and try to get phone numbers. If I see parents at a basketball game or out in the community, I try to introduce myself because…a lot of them don't come to the school, so if I see them, I try to build a relationship and communicate with the parents. I mention positive news like if their child makes the honor roll.

There was a sense of distrust and antipathy towards the Guidance Department and school officials within the black community in Sadie Foster. This was illustrated by an incident where a highly qualified black student was discouraged by her parent from enrolling in advanced courses due to a lack of trust in the school's intentions, despite the counselor's insistence on the student's academic potential. The Director of Guidance ultimately instructed the counselor to comply with the parent's wishes, highlighting the ongoing challenges in building trust with the community. The Director of Guidance came over to me and said, "You can't argue with the parent…if she wants her daughter to be scheduled in general classes…schedule her in general classes."

The counselors described a process of working in conjunction with the teachers in the school to create an open dialogue with black parents to make sure their children were being scheduled in the best classes that match the student's ability. The parents were reluctant to have their children take courses that will negatively impact their GPA, although four-year colleges and universities use additional factors (SAT/ACT scores, class rank) to determine acceptances and academic scholarship awards. In describing black students' desire to go to college, Hazel stated:

> I see now that more black students are taking more challenging courses, but what I do find in Sadie Foster…our kids aspire to go to school, and even when failing…when I call them in because they are failing and I ask what do you want to do, they say, 'I want to go to college.

Despite struggling academically or parental discouragement, many of these students still expressed a strong desire to attend college when asked about their future aspirations. The significant role that parental involvement and advocacy play in shaping students' academic experiences and college choice processes at Sadie Foster High School. The differences in parents' engagement with the school and navigation of the college choice process based on race and socioeconomic background underscore the need for more equitable and inclusive approaches to parental engagement and support.

Parental and Community Support

Parental involvement and advocacy play a significant role in shaping students' academic experiences and college choice processes. This theme explores how parents at Sadie Foster High School engaged with the school and navigated the college choice process, and how their involvement and advocacy differed based on race and socioeconomic background. The parents from the rural communities surrounding Sadie Foster seemed to have a shared value and understanding of the importance of education regardless of the income level of the household. Low-income parents were able to interact with aspirational or professional leaders (church, middle school officials, and business leaders) in the community to fill any gaps or questions about the college choice process. Student C's parents did not attend college, but they were able to learn about postsecondary opportunities for her through social networks and the experiences of other parents in the community whose children recently went through the college choice process. Student C explained that her parents pushed her to succeed academically and to pursue post-secondary education because they were not able to.

> My dad never went to college, so that's another reason why he wants me to go, because neither of my parents went to college because my mom got pregnant when she was sixteen, so she didn't have the chance. Like she wanted to be a lawyer, but she never got the chance and my dad's now a truck driver… It motivated me to go to college so that I can get a better job, get a better education.

Parents in the rural communities shared information on school choice, the importance of the Honors and IB curriculum for college preparedness, college savings plans, etc., regardless of socioeconomic status and provided opportunities for students to gain career exposure. In addition, when students who graduated from high school came back into the communities from college, they shared information about college workloads, living on campus, and choosing a major. Student A's future career plan was to become veterinarian, and she recalled volunteering at a local veterinary's office to gain exposure to the field, "The veterinary influences would be having [access] to the animals and going to the vet's office and actually becoming friends with them."

Student J, whose mother is a pathologist at a local hospital, explained how she has shadowed doctors to gain exposure to the medical field, "I know that like my mom, a couple of times like, they have this like the shadowing program at the hospital [where] she works. So, like I have gone and shadowed doctors before, just to make sure that's I want to do when I grow up."

Black parents highly value education, but there is a fundamental difference in how white parents utilize various forms of capital and knowledge to help their children access advanced classes, enrichment programs, and experiential experiences in order to further their educational opportunities. The oppositional cultural position of many black parents in the study transcends into not advocating for their children to go into the Sadie Foster High School in the Honors/IB program even if they were academically qualified for such programs. The parents do not fully trust that the school officials in the high school have their children's "best interests at heart." Student B, a black Honors student, explained why she thought her friends at the middle school did not continue in the Honors program once they entered high school:

> I'm the, me and one other girl in my history class are like the only blacks and we have about 15 in there [class]. She went on to explain that continuing in the Honors program in high school was mandated by her mother, and maybe some of the other students in the Honors program in the middle school did not have a parent to force them to enter the Honors program whether they wanted to or not.

In summary, black parents recognized the importance of a college education for their children and often motivated them to pursue higher education Yet, black parents did not utilize different forms of capital and funds of knowledge (i.e., school choice option, the importance of the Honors and IB curriculum for college preparedness, college savings plans or provide opportunities for career exposure), as their white counterparts, to strategically influence the college aspirations and educational trajectories of their children.

The theme emphasizes the importance of parental and community support in shaping students' educational aspirations and opportunities in the rural areas surrounding Sadie Foster High School. The differences in the levels and types of support available to students based on their race and socioeconomic background highlight the need for more equitable and inclusive approaches to parental and community engagement.

Discussion and Implications

This study sheds light on the complex interplay of institutional practices, parental involvement, and community support in shaping the college aspirations and experiences of rural students at Sadie Foster High School, with particular attention to racial disparities. The findings highlight the persistence of systemic inequalities within the school system and offer significant contributions to the existing literature on rural education, educational equity, and racial disparities. The study's findings reveal that academic placement at Sadie Foster High School is influenced by structured racial practices that disproportionately favor White students while disadvantaging Black students. This segregation within academic tracks aligns with prior research indicating that tracking systems often reinforce existing racial and socio-economic inequalities (Oakes, 2005; Tyson, 2011). Oakes (2005) argues that tracking perpetuates educational inequities by limiting access to rigorous coursework for students of color, thereby restricting their opportunities for college preparation and success.

The reliance on parental advocacy in determining academic placement at Sadie Foster High School reflects a broader trend observed in educational systems across the United States, where students from privileged backgrounds have greater access to resources that enhance their academic trajectories (Byun, Meece, & Irvin, 2012). This study contributes to the literature by providing a case study that exemplifies how these dynamics play out in a rural setting, where geographic isolation and economic scarcity further exacerbate educational disparities.

The findings underscore the need to reevaluate academic placement policies, as recommended by scholars such as Burris and Garrity (2008), who advocate for more equitable practices that recognize the diverse abilities of all students. Implementing holistic assessment criteria that go beyond standardized tests is essential for disrupting the cycle of disadvantage and ensuring that students of color have equal access to advanced academic opportunities.

The differences in parental involvement and advocacy based on race and socioeconomic background are significant findings of this study, aligning with existing literature on the role of cultural and social capital in shaping students' educational experiences and college choice processes (Bourdieu, 1986; Coleman, 1988). Bourdieu (1986) introduced the concept of cultural capital, referring to the non-economic assets—such as education, intellect, and style of speech—that can influence an individual's social mobility. Similarly, Coleman (1988) emphasized the importance of social capital, which includes the networks of relationships among people who live and work in a particular society, enabling that society to function effectively.

This study extends the concept of "funds of knowledge" (Vélez-Ibáñez & Greenberg, 1992) by demonstrating how White parents at Sadie Foster High School were able to effectively utilize their cultural and social capital to advocate for their children's placement in advanced and more rigorous classes. These parents drew upon various forms of capital and knowledge, such as familiarity with the school system, connections with school staff, and an understanding of how to navigate institutional structures, to ensure their children received favorable academic placements. This aligns with Lareau's (2011) findings that middle-class parents, often possessing more cultural and social capital, are better positioned to intervene in their children's education, compared to working-class parents.

In contrast, black parents faced significant challenges in advocating for their children's educational opportunities, often due to institutional barriers and cultural discontinuities. These parents, while equally invested in their children's success, frequently encountered a lack of access to the same forms of capital that their white counterparts could leverage. For instance, they may have lacked the social connections within the school system or the institutional knowledge needed to effectively navigate the academic placement process. This finding is consistent with research by Lareau and Horvat (1999), who observed that parents from marginalized backgrounds often face systemic barriers that limit their ability to advocate for their children within educational institutions.

The study's findings contribute to a broader understanding of how cultural and social capital, as well as funds of knowledge, operate within rural school settings. They highlight the need for schools to recognize and address these disparities in parental involvement and advocacy. Schools should consider implementing programs that actively engage and empower all parents, particularly those from marginalized communities, by providing them with the tools and knowledge needed to advocate effectively for their children. Such initiatives could include parent education workshops, outreach programs, and the creation of parent advisory committees that ensure diverse voices are heard in decision-making processes.

Guidance counselors at Sadie Foster High School play a crucial role in shaping students' college aspirations, yet the study reveals significant disparities in the support provided to students based on race. This finding aligns with Carter's (2005) concept of "multicultural navigators," individuals who help students from minoritized groups navigate educational environments that may not inherently promote their success. The study expands on this concept by illustrating how the absence of culturally responsive counseling practices can hinder the college aspirations of Black students in rural settings.

The discrepancy in support between white students in the Honors/IB programs and black students in the college preparatory track echoes findings from Griffin, Hutchins, and Meece (2011), who observed that Black and Hispanic students in rural areas are more likely to rely on teachers and community figures for guidance, yet often receive less individualized attention from school counselors. This study contributes to the literature by emphasizing the need for equitable counseling practices in rural schools, where access to postsecondary opportunities is already limited by geographic and socio-economic factors.

The findings support the call for culturally responsive counseling practices, as advocated by King (2010) and Grothaus et al. (2012), who emphasize the importance of providing guidance that addresses the specific needs of students of color. Schools should invest in professional development for counselors to equip them with the skills necessary to support all students equitably, ensuring that racial disparities in college access are addressed.

The study reveals that student-teacher relationships are a critical factor influencing students' academic engagement and postsecondary aspirations, with significant differences based on race. White students in the Honors/IB programs benefit from supportive relationships with their teachers, which aligns with previous research highlighting the importance of positive student-teacher interactions in fostering academic success and college aspirations (Wentzel, 1997; Goodenow, 1993). These findings contribute to the literature by providing evidence that such supportive relationships are less accessible to Black students, particularly in rural settings.

Conversely, the cultural disconnect experienced by Black students with their predominantly White teachers reflects findings by Howard (2001) and Ladson-Billings (1995), who argue that cultural competence among educators is crucial for creating inclusive learning environments. The study adds to this body of work by illustrating how the lack of cultural competence in rural schools can lead to a sense of alienation among students of color, undermining their educational outcomes and aspirations.

The findings underscore the need for schools to prioritize the recruitment and retention of a diverse teaching staff, as suggested by Villegas and Irvine (2010), and to invest in professional development focused on cultural competence. By fostering stronger, more supportive relationships between teachers and students, schools can create environments where all students feel valued and motivated to pursue higher education.

This study contributes to the broader literature on educational equity and rural education by providing a detailed examination of how race, family, and community intersect to shape the educational trajectories of rural students. The findings align with and extend previous research on the systemic nature of educational inequalities, offering new insights into how these dynamics manifest in rural settings. By focusing on a rural high school with a diverse student population, the study fills a gap in the literature, which has often overlooked the unique challenges faced by rural students of color (Corbett, 2007; Tieken, 2014).

The study's emphasis on the role of structured racial practices, guidance counselors, student-teacher relationships, and parental involvement provides a comprehensive understanding

of the barriers to college access for rural students, particularly those from marginalized backgrounds. This holistic approach contributes to the literature by highlighting the importance of considering both institutional and relational factors in addressing educational disparities.

Conclusion

This study explored how race, family, and community influence the college aspirations of rural students at Sadie Foster High School. The findings highlight the need for rural schools to reform academic placement practices to ensure equitable access to rigorous coursework and college preparation resources, regardless of students' racial or socio-economic background. Addressing racial biases in these practices is crucial for fostering an inclusive educational environment.

Additionally, the study underscores the importance of involving parents and communities in the educational process. Building trust with underrepresented families and equipping them with the necessary tools to advocate for their children can enhance educational outcomes. By implementing these changes, rural schools can better support the college aspirations of all students, particularly those from marginalized backgrounds.

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Digital Ethics Competency of Student Teachers

Chaimae Tnibar-Harrus and María José Latorre-Medina*

**Corresponding author*

Abstract

The purpose of this study was to analyze digital competencies of student teachers in Early Childhood Education and Primary Education of the Faculty of Education, Economy and Technology of Ceuta of the University of Granada. Specifically, we investigated the degree of competence in digital ethics that future teachers acquire, develop and/or enhance throughout their university training process. To achieve this purpose, we utilized a specifically designed and tested questionnaire, entitled "Questionnaire of Digital Competences for Citizenship with support in Ethics (QDCCE)", for which we calculated its psychometric properties. Results reveal that future male teachers are highly competent in the area of security, while future female teachers are compentent information and data literacy. Additionally, both male and female student teachers demonstrated techno-pedagogical and social inclusion skills. The degree of performance is also influenced by the socio-economic diversity of the student teachers. Student teachers with medium-high socio-economic status are more skilled in information and data literacy, while those with medium-low socioeconomic status excel in communication, collaboration, and problem solving skills.

Keywords: digital citizenship, digital competences, technology ethics, student teachers

Chaimae Tnibar-Harrus *is a Ph.D. student at the University of Granada. Faculty of Education, Economy and Technology of Ceuta, Spain. She can be reached at chaimaetnibar@correo.ugr.es*

María José Latorre-Medina, Ph.D. *is an Associate Professor at the Department of Teaching and School Organization, University of Granada. Faculty of Education, Economy and Technology of Ceuta, Spain. She can be reached at mjlator@ugr.es*

Introduction

The extensive use of digital resources in educational settings highlights a training gap about virtual civility (Gamito et al., 2020). This is demonstrated by the high incidence of cyberbullying, flaming, phishing, grooming, and other forms of online harassment, particularly among minors (Novella & Cloquell, 2021). Experts have identified communication deficiencies in the profiles of early childhood students, which they attribute to the excessive screen time and the inadequate parental supervision (Ortiz et al., 2023). Authors such as Gümüş et al. (2023) report that data safety awareness foretells sensitivity to cyberbullying. As observed by Balladares and Jaramillo (2022), the lack of self-assessment and self-regulation will lead to significant challenges in managing digital identity and personal data. Considering these circumstances, Lores et al. (2019) assert that "the preparation and knowledge available to teachers do not seem to be adequate to the current technological needs of 21st century citizens" (p. 236). There are few pedagogical experiences that address the critical integration of the Information and Communication Technologies (ICT) in favor of digital well-being, including data protection and the treatment of the digital footprint. López et al. (2019) identify teacher's digital competence as a key area for improvement, noting that current levels are insufficient for effectively engaging in a technopedagogical teaching and learning process. To grasp the impact of this phenomenon on teacher training programs, Castañeda et al. (2018) expanded the competence compendium by introducing an alternative diagnostic model, the *Holistic Model of Teaching Competence for the Digital World*. In their recent reports, they argue for a "humanistic" approach to teachers' digital competence, with the goal of fostering a professional identity among educational actors that is conducive to techno-pedagogical and socially inclusive actions. These specific skills include: expertise in digital pedagogical content; ability to reflect on practice and adapt to new situations; expertise in creating engaging learning environments for personal and professional growth; awareness of the potential for technology to drive social change; capacity to leverage technology to strengthen relationships with students and their families; ability to develop and manage new pedagogical approaches (Castañeda et al., 2021).

In a broader sense, Trujillo et al. (2020) introduced a new dimension through the Global Framework for Competence to Learn and the Global Framework for Educational Competence in the Digital Age. This involved distinguishing three key identities: the individual as a citizen, the individual's approach to knowledge, and the individual as a person in connection. This "comes to recognize the fact that competence is a set of knowledge, skills, and abilities linked to the different identities an individual assumes about the different social practices he develops" (p. 11). In a previous study, Krumsvik (2009) emphasized the significance of this expertise for teaching and learning. Based on a set of criteria (pedagogy, ethics, moral sense, etc.), the study identified new incentives for digital well-being.

Although there are still some who believe digital competence is solely about learning computer and office skills, the main actions that fall outside the ethical framework relate to the profile of new university students and their academic integrity (Gamage et al., 2020; Hernández & Moreno, 2023). The significant increase in misuse cases is being addressed with a more focused and comprehensive approach to digital ethics, in line with the observations made by Alfaro and De Juan (2014):

> At present, in the Knowledge Society, when we talk about education we must talk about multi-literacy, which includes a convergence of closely linked literacies [...]. All this without forgetting ethical responsibility and social commitment, concepts which have been incorporated into university curricula, but which are not always given the necessary

> attention or which we are not always able to adapt easily to these more dynamic and creative learning systems. (p. 6)

At the same time, recent research reveals that students in higher education use Artificial Intelligence systems "in an experimental way, without clear guidance from teaching staff and with the absence of official regulations from educational authorities to regulate their responsible and ethical use" (Gallent et al., 2023, p. 14). Moreover, despite the prevalence of electronic anti-ethics resources, deficiencies have been identified in the documentary competences (Espiñeira et al., 2021). To this end, Gallent (2023) recommends intensifying efforts to ensure accurate and appropriate citation and referencing of sources in academic works, with the aim of fostering a culture of academic honesty. Cuesta et al. (2023) also emphasize the importance of integrating reflective techniques into the writing process for Education Degrees. Conversely, Gómez et al. (2016) confirm that the design of activities impacts the incidence of plagiarism among university students, with lower rates of academic fraud observed in environments of active participation (enabling more creative and original written outputs, etc.). As these authors note:

> It is possible to reduce the incidence of plagiarism by designing activities in such a way that students are motivated to come up with their ideas using the information available on the Internet as a vehicle for their solutions rather than as solutions in themselves. (p. 39)

At this point, experts advocate the so-called citizenship education, "in a more comprehensive sense than values and moral education, which aims to contribute to forming more civically competent citizens committed to collective responsibilities" (Bolívar**,** 2005, p. 96). Specifically, to analyze this ICT supported construct, a large body of research is based on the Digital Competence Framework for Citizens project, henceforth DigComp (Ferrari, 2013). This is the reference framework that, in essence, encompasses the "basic competencies that citizens must develop in the digital sphere to thrive in the social, economic, and cultural context in which we live" (Marín et al., 2021, p. 1). Based on this model, Rodríguez et al. (2019) found that future teachers of primary education from various Andalusian faculties (Spain) demonstrated moderate or intermediate levels of competence in searching and managing information (area of information and data literacy). The results indicate a need for improvement in the use of tools for browsing and filtering information. Marín et al. (2022) indicate that future teachers of Primary and Secondary Education at the University of Valencia, Spain, perceive themselves to be particularly skilled in the areas of information and literacy, as well as in safety. This complementarity between areas is in line with Castro et al. (2019), who point out that "digital literacy must be accompanied by knowledge for a critical, ethical, and responsible use of resources and media" (p. 5)**.**

Methodology

This study is based on the positivist-rationalist paradigm, also known as the empirical-analytical approach. This is a quantitative study based on the characteristics of descriptive and correlational designs (Buendía et al., 1998; Cohen & Manion, 2002). In this instance, a descriptive method has been carried out through an *ad hoc* questionnaire to address the objective and research questions. The present study aims to assess the level of digital competence of student teachers pursuing degrees in Early Childhood Education and Primary Education at the Faculty of Education, Economy and Technology of Ceuta, University of Granada, Spain. Specifically, we aim to examine the extent to which future teachers acquire, develop, and enhance their digital ethics competences across the following areas: information and data literacy, communication and collaboration, creation of digital content, digital safety, and problem solving.

This general aim is further detailed by four research questions:

RQ1. Are there significant associations in the level of performance of digital competence of student teachers according to gender?

RQ2. Are there significant associations in the level of performance of digital competence among student teachers according to the degree that they are studying?

RQ3. Are there significant associations in the level of performance of digital competence of student teachers according to their socioeconomic status?

RQ4. Are there significant associations in the level of performance of digital competence of student teachers according to the ICT extra-training (received in courses, workshops, seminars, etc.) to pay attention to diversity?

Population and Sample

During the 2023-24 academic year, the study population consisted of 100 future teachers in their final year of Early Childhood and Primary Education Degrees at the Faculty of Education, Economy, and Technology of Ceuta of the University of Granada, Spain (N=100). A non-probabilistic sampling method, also known as convenience sampling, was employed. Specifically, participants who met the established inclusion criteria were selected. The criteria include students in their fourth year of Early Childhood Education and Primary Education Degrees who are currently enrolled in the Practicum II course. These students, given their extensive training –either at the faculty or at practice centers– already possess sufficient criteria to assess their proficiency in digital skills.

A detailed examination of the sample indicates that 78.4% of the student teachers surveyed are women, while 21.6% are men. Most respondents hold a Primary Education Degree, specifically they belong to the branch of Special Education. In terms of the variable socioeconomic status, it was determined that 43 future teachers have a medium-high level of access to ICT resources, while 30 teachers in pre-service have a medium-low purchasing power.

It is worth noting that over half of the participants have not undergone accredited ICT training to enhance their ability to cater to the diverse needs of their future pupils (59.5%).

Instrument for Data Collection

After an exhaustive review of validated instruments, we developed an *ad hoc* questionnaire that was validated using the expert judgment technique. As stated by Cabero et al. (2020), the results obtained through the questionnaire provide a comprehensive understanding of the strengths and weaknesses (areas for improvement) of the digital competences of future teachers. Specifically, we have relied on instruments and scales from national and international literature based on the analysis of digital competences for citizenship (Ata & Yildirim, 2019; Baysan & Çetin, 2021; Cabero & Palacios, 2020; Gutiérrez & Cabero, 2016; INTEF, 2022; Lozano & Fernández, 2018). The *Questionnaire of Digital Competences for Citizenship with support in Ethics* (QDCCE) is comprised 40 Likert-type items, with five options for each item (1=insufficient performance; 2=sufficient performance; 3=moderate performance; 4=outstanding performance; and 5=excellent performance).

Once the latest version of the questionnaire was completed, an exploratory phase was initiated to assess its reliability applying Cronbach's alpha (Bisquerra, 1987). In this instance, the pilot study was conducted with 28 fourth-year student teachers, resulting in a coefficient of .923. Given that a reliability value of 0.8 is deemed optimal, we can conclude that the present instrument

exhibits a high degree of internal consistency (George & Mallery, 2003). It is worth noting that after obtaining Cronbach's alpha if each item was eliminated, we found a high level of consistency for the 40 items of the questionnaire. None of the items significantly altered the value of the coefficient; hence no item could be omitted or deleted (see Table 1).

Regarding the procedure for administering the instrument, it was distributed during the training seminars for the Practicum II of the Early Childhood Education and Primary Education Degrees (in-person).

Table 1

Cronbach's Alpha Value

Items	Scale means if item has been eliminated	Scale variance if item has been eliminated	Item-total correlation	Cronbach's alpha if each item was eliminated
Item 1	191.29	651.101	-.028	0.925
Item 2	190.96	628.332	0.341	0.923
Item 3	190.79	633.212	0.258	0.923
Item 4	190.86	628.127	0.342	0.923
Item 5	190.46	622.776	0.611	0.921
Item 6	190.43	619.365	0.703	0.920
Item 7	190.75	617.750	0.599	0.920
Item 8	191.50	632.704	0.307	0.923
Item 9	190.43	628.550	0.425	0.922
Item 10	190.39	624.247	0.437	0.922
Item 11	190.32	622.893	0.631	0.921
Item 12	190.07	629.847	0.353	0.922
Item 13	191.29	623.545	0.361	0.923
Item 14	192.82	626.226	0.345	0.923
Item 15	190.82	607.782	0.619	0.920
Ítem 16	191.00	640.370	0.234	0.923
Ítem 17	192.04	643.073	0.094	0.925
Item 18	190.32	620.078	0.584	0.921
Item 19	191.04	619.665	0.454	0.922
Item 20	190.11	632.025	0.431	0.922
Item 21	190.25	627.898	0.446	0.922
Item 22	190.79	606.249	0.674	0.920
Item 23	191.64	633.794	0.252	0.923
Item 24	190.25	623.676	0.447	0.922
Item 25	191.32	601.263	0.714	0.919
Item 26	190.96	614.925	0.524	0.921
Item 27	190.36	636.238	0.257	0.923
Item 28	190.50	617.000	0.519	0.921
Item 29	189.86	636.868	0.419	0.922
Item 30	190.21	625.508	0.559	0.921
Item 31	191.21	618.915	0.559	0.921
Item 32	191.64	629.942	0.371	0.922
Item 33	190.11	640.988	0.203	0.923
Item 34	191.29	620.063	0.503	0.921
Item 35	191.11	616.840	0.531	0.921

Item 36	190.14	639.534	0.292	0.923
Item 37	190.86	603.683	0.734	0.919
Item 38	190.29	619.989	0.651	0.920
Item 39	190.21	620.841	0.507	0.921
Item 40	190.68	609.782	0.636	0.920

Note. The table shows the Cronbach's alpha if each item was eliminated.

Data Analysis

The data collected through the questionnaire were treated statistically using IBM SPSS software (George & Mallery, 2003). The statistical analysis was a contingency analysis (Chi-Square test). The inferential analysis enabled us to ascertain whether there are notable correlations between the level of performance of the future teachers and the independent variables included in the questionnaire, such as gender, degree, socioeconomic status, and the ICT extra training received to improve attention to diversity.

Results

The results yielded provide responses to each of the research questions presented at the outset of the study.

Are there significant associations in the level of performance of digital competence of student teachers according to gender?

Table 2 presents the specific results on which variables of the questionnaire are significantly associated with the gender of the Ceuti male and female student teachers of Early Childhood Education and Primary Education who participated in this study.

Table 2
Contingency Analysis by Gender

Variable	***Gender p value***
"When I shop online, I make sure that the websites are trustworthy" (item 28)	.016*
"I promote safe, legal and responsible use of information and ICT" (item 30)	.024*

Note. Equivalence: *p ≤ 0.05 ** p ≤ 0.01

The results indicate a significant correlation between gender and two variables, representing 5% of the total questionnaire. Both variables, pertaining to the safety area, have a confidence level of 95% (p-value ≤ 0.05). 62.5% of the future men teachers of Early Childhood Education and Primary Education rated their competence as "outstanding" in response to item 28. The future female teachers, on the other hand, report the same level of development, "outstanding," but at a lower rate (20.7%). While no male prospective teachers are positioned at the minimum or "insufficient" level, the female trainee teachers achieve excellence at a rate of 39.7%. This high

level of development is in line with the results obtained from item 30, which formed the basis of this research. Considering these findings, it can be stated that the profile of men demonstrates a high level of competence mastery. In comparison to the 20.7% of responses from the female pre-service teachers who endorse/ratify the highest level of competence, almost twice as many future men teachers have an "excellent" level (43.8%). The initial finding is that male trainee teachers, particularly in Primary Education Degree, demonstrate greater proficiency in promoting digital ethics.

Are there significant associations in the level of performance of digital competence of student teachers according to the degree that they are studying?

We also investigated whether there is a notable correlation between the education degree of the student teachers and the variables in the questionnaire they completed. A preliminary analysis of Table 3 indicates that two items, representing 5% of the total questionnaire, exhibit particularly strong correlations.

Table 3
Contingency Analysis by Degree

Variable	**Degree** ***p value***
"I am able to identify content that has been created by platforms that employ Artificial Intelligence systems (Dall-e, Midjourney)" (item 1)	.003**
"I guide others to locate the information they need to solve technical problems" (item 37)	.038*

Note. Equivalence: * p ≤ 0.05 ** p ≤ 0.01

Following an in-depth analysis of the cross-referencing of the variables with the qualifications of the future teachers, we determined that students pursuing a degree in Early Childhood Education have an "outstanding" level of competence in identifying images and videos created by platforms utilizing Artificial Intelligence systems (56.5%). Furthermore, 17.4% of respondents indicated positive results, demonstrating an "excellent" level of proficiency. In comparison, student teachers of Primary Education demonstrate a "moderate" level of proficiency in this skill, indicating a lack of competence in this area (31.4%). Furthermore, the same variable demonstrates a notable correlation with the specific mention/branch or area of specialization (see Table 4), which provides insight into the enhanced proficiency profile of the Primary Education Degree. In this regard, the future teachers of English as a Foreign Language stand out, with 46.7% of respondents indicating proficiency. However, the student in pre-service of Early Childhood Education remain in the leading position, with the highest level of competence. The opposite is true about item 37, which pertains to problem solving area. In this case, most student teachers of Primary Education report an "outstanding" level of development, compared to 21.7% of the responses of the future women teachers of Early Childhood Education. It can be concluded that the primary area of focus of trainee Early Childhood Education teachers is information and data literacy, while students with a degree in Primary Education demonstrate greater proficiency in problem solving skills.

Table 4
Contingency Analysis by Mention/Branch

Variable	Mention/Branch *p value*
"I am able to identify content that has been created by platforms that employ Artificial Intelligence systems (Dall-e, Midjourney)" (item 1)	.019*

Note. Equivalence: * $p \leq 0.05$ ** $p \leq 0.01$

Are there significant associations in the level of performance of digital competence of student teachers according to their socioeconomic status?

We also wanted to ascertain whether there was a notable correlation between the socio-economic level of student teachers' access to ICT resources and the variables in the questionnaire. As illustrated in Table 5, three variables, representing 7.5% of the total questionnaire, demonstrate a statistically significant association at a 95% confidence level, except for the first variable (99%).

Table 5
Contingency Analysis by Socio-Economic Status/Level

Variable	Level *p value*
"I know how to design activities where my future students will have to use ICT resources critically " (item 6)	.004**
"I can use ICT to form collaborative working groups" (item 9)	.031*
"When I design assignments, I take into account the availability and the connectivity of students' devices" (item 39)	.022*

NoteEquivalence: * $p \leq 0.05$ ** $p \leq 0.01$

In terms of the design of activities leading to the critical and responsible use of ICT, we identified a noteworthy development among student teachers with a medium-high socio-economic status (48.3%), in comparison to the responses of student teachers from the lower-middle class (43.3%). In this regard, the trainee teachers with limited purchasing power indicate that they possess a "sufficient" level of competence. In terms of the variable related to the constitution of collaborative groups, the results demonstrate an "excellent" level of competence, particularly among the student teachers of lower-middle socio-economic status (43.3%). The same situation can be observed regarding the final variable, although in this case, the students in pre-service with low purchasing power indicate that their level is insufficient.

The analysis of the level of performance in digital competence according to the additional training received in ICT for diversity did not yield any significant associations. A comprehensive review of the results, as analyzed through contingency analyses, reveals that the future men

teachers of Primary Education of Ceuta demonstrate expertise in safety, while the female student teachers in Early Childhood Education excel in information and data literacy. The level of development is also influenced by the socio-economic diversity of the student teachers of Early Childhood and Primary Education. The results indicate that the participants with medium-high purchasing power demonstrate greater proficiency in information and data literacy, while those with a medium-low socioeconomic level exhibit stronger communication and collaboration skills, as well as problem-solving abilities. This is observed regardless of whether they have received supplementary or extra training in ICT for the enhancement of educational services.

Conclusions

Digital ethics stands out as a transversal element for the promotion of the fourth Sustainable Development Goal (SDG), which is the guarantee of inclusive and equitable quality education through ICT. The results of this study, obtained through an exhaustive statistical treatment, reflect the development of the ethical dimension in the Early Childhood Education and Primary Education Degrees of the Faculty of Education, Economy and Technology of Ceuta. Specifically, the results show that, thanks to the theoretical-practical training received at the faculty, future teachers have acquired and/or improved their digital competences from a critical and responsible approach. Marín et al. (2022) also confirm this optimal performance, especially in safety. This contrasts with the training gaps identified by Gómez (2023).

A comparative analysis of degree programs reveals that the female pre-service teachers of Early Childhood Education demonstrate a stronger proficiency in information and data literacy. Conversely, male students enrolled in Primary Education programs exhibit a higher level of competence in problem-solving skills, such as assisting other citizens. From an economic standpoint, these areas demonstrate disparities in the proficiency levels of the participants. In this scenario, the future teachers from upper-middle-class backgrounds tend to demonstrate superior proficiency in information and data literacy. Conversely, those from lower-middle socioeconomic backgrounds exhibit enhanced communication, collaboration, and problem-solving abilities. However, the level of development is commendable about the promotion of measures to draw attention to diversity (for example, creating personalized ICT resources). Regarding gender differences, the findings indicate that male pre-service teachers, particularly those pursuing a Primary Education Degree, demonstrate a greater ability to promote digital ethics, consistent with the observations made by Ata and Yildirim (2019).
Other studies confirm the impact of this variable on the digital competences of teacher 's staff (Moreno et al., 2019).

From a prospective standpoint, the present study offers insights that can inform the development of new lines of research and topics currently in vogue, such as digital sustainability and digital ethics training in the initial teacher training period. This aligns with the works undertaken by Flores and García (2023) and Marín and Tur (2024). The development of a culture of ethical conduct in the use of emerging technologies in higher education institutions is a crucial challenge for universities seeking to contribute to the creation of a fairer and more inclusive society. Aware of this, the University of Granada, Spain is leading a research project which focuses on the field of the professional teaching ethics and initial teacher training (Reference CE-02-UGR24). In fact, a macro-diagnosis on the professional ethics is currently being carried out with the aim to determine the state of the art in teacher training at the Faculty of Education, Economy and Technology of Ceuta of the University of Granada and to assess whether ethical

competence can be considered as a viable characteristic in the selection of the future teachers. This is an innovative line of work in the Spanish university context that will promote scientific debate on the subject.

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Use Your Noodle:
Student-Generated Questions in the Early Childhood Setting

Cora Causey* and Amelia Spencer

**Corresponding author*

Abstract

In early childhood education, nurturing curiosity is essential. It is widely recognized that encouraging students to ask questions is crucial. This practice fosters meaningful connections with literacy and language and boosts engagement, critical thinking, and problem-solving skills, especially among economically disadvantaged backgrounds. This article explores the practical use of the Question Formulation Technique (QFT) in teaching young children from under-resourced schools. We share our experiences implementing the QFT during a summer enrichment program. Through vignettes highlighting the children "using their noodles," we showcase how the QFT serves as an inclusive teaching tool and offer insights for educators on customizing it to meet the developmental needs of young learners.

Keywords: student-generated questions, early childhood, critical thinking, pedagogy, oral language, question formulation technique, curiosity

****Cora Brasfield Causey, Ph.D.*** *is an Assistant Professor in Early Childhood Education in the School of Education at the University of Alabama at Birmingham. Dr. Causey can be reached at ccausey@uab.edu*

Amelia Spencer, Ph.D, *is the Program Evaluator and Director of Glenwood Kindergarten for children with autism. Dr. Spencer can be reached at Draspencer7@gmail.com*

Today, in Avondale Park in Birmingham, Alabama, the statue of the legendary Miss Fancy proudly stands with children riding on her back. However, the park is often teeming with young families, few notice or think about the beloved elephant that left a permanent mark on Birmingham. Miss Fancy's storied history comes from her time at the Birmingham Zoo, nestled in the Avondale area, during the early 20th century. She was an iconic figure in the city, holding a special place in the hearts of residents and visitors. A diverse group of local students attend the summer enrichment camp, which involves reading, writing, and lots of wonder for diverse young learners in Birmingham, Alabama, many of whom did not know the story of Miss Fancy.

However, when learning about Miss Fancy, it is essential to acknowledge a sad chapter in history. During the Civil Rights era, young children of color were denied the opportunity to ride on Miss Fancy's back, reflecting the challenging times that shaped our nation.

Introduction

Researchers have extensively investigated how teachers' questions influence student learning. For example, Strasser (2017) shares strategies for asking questions in her book *Big Questions for Young Minds*, emphasizing its impact on children's high-level thinking abilities. Teachers, guided by educational frameworks like Bloom's Taxonomy and Costa's Levels of Questioning, encourage children to remember information and understand, describe, apply, analyze, evaluate, and create knowledge. While extensive research has explored teacher questioning in the classroom, limited attention has been given to investigating questions generated by students. (İnönü & Demircan, 2023; Resnick, 2023; Salmon & Barrera, 2021).

Early learning is crucial for children as it marks the beginning of their journey to make sense of the world around them. In these formative years, highly effective learning environments play a pivotal role. Heick (2014) outlines 10 characteristics delineating a highly effective learning environment. The first three characteristics of such environments revolve around questioning, with the first one highlighting the significance of student-generated questions as a fundamental aspect

of the learning processTeachers assume that students naturally learn to ask effective questions. However, research shows that learners require explicit instruction to be successful with higher-level questions (Humphries & Ness, 2015; King & Rosenshine, 1993; Rosenshine et al., 1996).

This article explores a flexible instructional technique in which teachers guide students to ask their questions based on a common focus. The Question Formulation Technique (QFT), as described by the Right Question Institute (Rothstein & Santana, 2017), was chosen because it invites all learners into an inclusive learning space, no matter their ability level or background. We provide examples of the QFT in the student-directed investigation of the legendary Miss Fancy, highlighting its usefulness and empowerment for young learners. Vignettes from children help to describe each step of the QFT and also illustrate how the QFT serves as an equitable instructional strategy and how educators can tailor it to address the developmental needs of young children.

Student-questioning

Understanding how young learners formulate and ask questions can shed light on their cognitive development and engagement with learning. Almeida (2012) highlights the importance of student questioning in engaging students in higher levels of thinking. Student questioning is vital for effective teaching and knowledge development. It enables students to express curiosity and actively participate in learning, deepening their understanding of content. This engagement through questioning enhances student participation and fosters critical thinking, problem-solving skills, and a lifelong learning mindset.

One significant outcome of encouraging student questioning is increased engagement. Zeegers and Elliot (2019) discovered that engagement and learning are positively impacted when students generate and use their questions. As students generate questions, they are more likely to become curious and independently explore complex concepts, leading to better retention and application of knowledge.

Another outcome of student inquiry is the development of critical thinking and problem-solving abilities. Through questioning, students are introduced to novel information, which allows them to synthesize new ideas and engage in problem-solving. Chin and Osborne's (2008) study highlights the positive impact of student-generated questions on problem-solving and conceptual understanding. Through questioning, students can identify knowledge gaps and actively seek solutions, fostering a sense of ownership over their learning journey.

Finally, student inquiry establishes a foundation for lifelong learning and academic success. When teachers consider children’s ideas and allow them to make choices, students become more autonomous and competent (Kocak et al., 2020). Aflalo (2021) suggests that students' ability to formulate questions is instrumental in independent learning. Learning to ask thoughtful questions equips students to handle challenges and adapt to emerging information paradigms.

Use Your Noodle and QFT

The authors directed an early childhood enrichment camp, *Use Your Noodle*. This camp was specifically tailored for four to eight year-olds, most attending underperforming urban schools during the academic year. The summer program spanned three weeks and included children from various cultural backgrounds and exceptionalities. Out of the group of 40 students, 74% identified as Black, 25% as White, and 1% as Hispanic. Most learners were at least one grade level behind

in academics, with at least 15% of the students on an Individualized Education Program during the regular school year. *Use Your Noodle* centered its academic focus on Science, Technology, Engineering, Arts, and Mathematics (STEAM) integration through literacy activities, employing a play-based and inquiry-oriented teaching approach.

Site directors chose teachers purposefully for their curiosity, sense of wonder, and children's learning. The camp's main focus was to provide all children with a sense of belonging in an environment rich with inquiry pedagogy. Teachers in the program incorporated the QFT into their daily teaching practices throughout the three-week session, providing a structured opportunity for young learners to develop their questioning skills and engage actively in the learning process (Rothstein & Santana, 2017; Spencer et al., 2020).

The Question Formulation Technique

The Question Formulation Technique (QFT) is an instructional method developed by The Right Question Institute (RQI) that encourages individuals to formulate, improve, and strategize their questions. It is designed to enhance critical thinking, inquiry skills, and the ability to ask meaningful questions. The QFT is an easy-to-use, flexible technique used in many educational settings to allow all children to enter the academic space regardless of their ability. It has enhanced critical thinking, problem-solving, and active learning (Rothstein & Santana, 2017).

The QFT is based on the idea that the ability to formulate thoughtful, purposeful questions is a skill that can lead to a deeper understanding of the content and more effective communication. While it was developed initially for adults, educators can use it with students of all ages. We chose this instructional strategy because it can be tailored to address all students' unique needs, developmental levels, and diverse backgrounds, fostering an environment where they can explore their curiosity within a structured learning framework (Minigan, 2017).

To illustrate the effectiveness of the QFT on young children, the authors have chosen to describe the process using an example of a QFT topic involving the historical study of Miss Fancy. The QFT process involves the following steps, and the vignettes highlighting children's learning provide rich examples of each step.

Step 1. Introduce a Question Focus (Q-Focus): The teacher or facilitator presents a prompt, statement, image, or topic to the students, which is the starting point for generating questions. The purpose of the Q-Focus is to stimulate curiosity and discussion.

"We have a surprise after snacktime," Ms Sims announces to the 4, 5, 6, and 7-year-olds as they move from journal writing. We have a field trip to the park next door to meet a new friend." The children are visibly excited as they eat their snacks and speculate who the new friend might be. In the park, Ms Sims and Ms Ramos introduce their students to Miss Fancy, the elephant statue. These childhood educators planned and frequently taught together as a team. The remaining vignettes highlight children from Ms. Sims and Ms. Ramos's classes.

At first, the students made general remarks about the elephant statue, "Look at the big elephant!" "I see the elephant." When prompted to ask questions, students asked, "Who is Miss Fancy?" "What are the people's names?" "Why did the kids get on the elephant?

Miss Fancy was the Q-Focus for Ms. Sims's and Ms. Ramos's weekly classes. While viewing the statue, the teachers recorded the children's questions about Miss Fancy. When students made general comments, the simple teacher prompt, "What questions do you have?" encouraged the young students to direct the learning to what mattered to them.

Step 2: Brainstorm Questions—Students have a set amount of time to generate as many questions as possible about the Q-Focus. During this phase, the emphasis is on quantity rather than quality.

On the first day of the QFT, Ms. Ramos pointed their attention to the statue of Miss Fancy and said, "Oh, Wow! DeMarcus had a question. He asked, 'Why are there kids on her back?' What other questions do you have? We will write them down." Ms. Ramos began to write questions on individual sticky notes to take back to the classroom. With the excitement around asking their questions, students' questions flowed quickly. Jacob and his classmates generated questions quickly, "Why is this statue here?" "Why is it brown?" "Who made it?"Ms. Ramos had a problematic time transcribing every question. She divided the larger group into smaller groups, with an adult in each group to record each question exactly as the student had stated it. This accommodation allows all questions to be represented and captured during the brainstorming.

When Max said, "It's so big," Ms. Ramos said, "How can you make that into a question?" Max thought for a minute and said, "How did they make Miss Fancy so big?" and "How does the statue look just like an elephant?"

When Josephine commented that she knew the answer to the question, "Who is Miss Fancy?" Ms. Ramos acknowledged her and added that we were asking the questions now. There would be time to answer them later during the project investigation.

During the next few days, the children learned more about Miss Fancy through primary sources and a children's picture book written by a local author.

Step 3. Categorize Questions- Students categorize their generated questions into open-ended and closed-ended questions after the brainstorming session. Open-ended questions require discussion or exploration and usually begin with "Why" or How." Closed-ended questions are straightforward, factual questions.

Teachers read each question at the beginning of the QFT instruction time to categorize questions. All questions were displayed and discussed, regardless of their depth or validity. Because of the young age of the students, the definition of open- and closed-ended questions was simplified to closed-ended questions being answered with "yes" or "no" or having only one correct answer and open-ended questions having more than one possible answer. With each question, the teachers guided the students to decide whether the question was open-ended or closed-ended.

Using a think-aloud, Ms. Sims modeled her process for categorizing one of the questions. "Let's look at DeMarcus' question, 'Why are there kids on her back?' Could we answer this question with a yes or a no? Would this make sense? 'why are there kids on her back?' 'yes.'...hum, I don't think it would. This question needs more investigation to find out why the elephant has children on her back. So, I think this might be an open-ended question. What do you think?" The children agreed that it was an open-ended question.

For the remaining questions, Ms. Sims led the children as they decided on the category for each question. A debate arose when Julian and Talia found themselves at odds over the question, "What are the people's names?" Julian believed it fell into the open-ended category because there were many possible answers considering the world's population of 8 billion. Talia contended that it should be labeled close-ended because there is only one correct name. Ms. Sims encouraged thoughtful discourse, but, in the end, because of the children's deliberations, they decided to categorize the question as open-ended because it could be anybody.

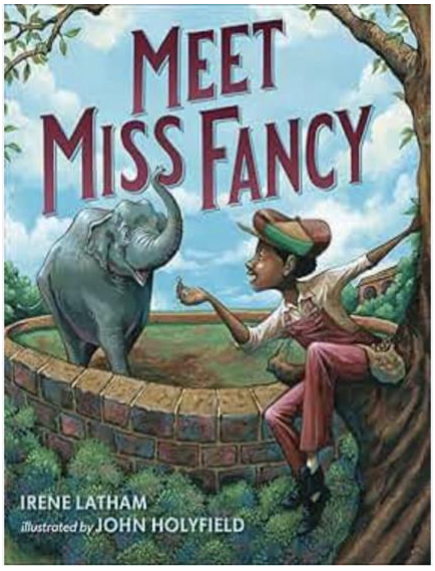
Step 4. Prioritize Questions—Students select and prioritize one or a few of the most important questions from the list.

Step 5. Reflect–Students engage in a discussion about the questions they have selected. Part of the reflection might be why they have chosen their specific questions.

Step 6. Planning—Depending on the QFT's purpose, students may act based on their questions by conducting research, experiments, or pursuing further inquiry.

The teachers involved in Use Your Noodle Camp combined the last three steps of the QFT by thoroughly discussing and asking the questions. Whereas older students may use this process to move from a general topic to a more specific topic appropriate to the curriculum, younger children may need more time and structure to explore topics. Teachers decided the QFT process was a multi-day study for this age child, and the class did not complete each step in one class session. Children asked the questions and spent several days exploring the answers individually and in small groups strategically facilitated by teachers in the room. The reflection and planning were embedded in the repetition of reading and re-reading the questions daily, guiding the students to answer those questions throughout multiple days. The questions were available on an anchor chart. As teachers provided more content for the students, the questions remained accessible. Moreover, students added questions as they naturally occurred.

During the study, Ms. Sims used the picture book Meet Miss Fancy by Irene Lathum (2019) as one of the Q-Focuses. The children asked, "Why is a kid in a tree feeding Miss Fancy?" Why is Miss Fancy coming to the boy?" and "Why did they call her 'Miss Fancy'?" Ms. Sims added newly generated questions on the whiteboard, and the children could reference the book and the questions during the day.



With the guidance of their teachers, the children revisited their questions and the various Q-Focuses throughout the day. During a morning meeting in Ms. Sims' class on day five, the

students came together to share the insights they had gathered about Miss Fancy, ensuring they had addressed each of their questions.

Kate, a young white six-year-old, reported that she did not like Miss Fancy. "I found out that if we had lived back then, some of us would not have been able to ride on her back. She didn't let Black and Brown children ride on her back!" Kate was incensed and continued, "…like, I would have been able to ride her, but you wouldn't, and you wouldn't, and you wouldn't," pointing to her lack of brown friends in the circle. "That's not fair!' Her friends agreed that this was not fair. 'Why was Miss Fancy mean?' Ms Sims guided the class in an honest conversation about racial relations, focusing on what the children could do to contribute to positive change.

Using the QFT with Young Children

The overarching objective of the QFT is to nurture the children's innate curiosity and facilitate the development of their questioning skills (Minigan & Beer, 2017). The QFT has proven effective for adults and older adolescents, but there has been very little documentation of its use with younger children. While the RQI website has some examples of lessons that demonstrate the use of the QFT in early childhood, there are no explicit adaptations to show its ultimate and best use. While it is a teacher-directed strategy with explicit instructional steps, it is compatible with developmentally appropriate practice. It also allows flexibility in adapting to student interests, abilities, and prior knowledge. It gives teachers an easy way for the teacher to foster student curiosity and engagement in a structured environment.

At *Use Your Noodle*, site directors introduced the QFT to teachers unfamiliar with the technique, approaching it with open minds. Encouraging individualization, we urged them to adapt the technique to suit their students' unique developmental stages, learning styles, and cultural backgrounds. Every child participating in the program learned the essential skill of asking questions. Teachers saw the strength of teaching and encouraging children to ask questions. Through careful observation of their efforts, we identified common patterns, suggesting areas for improvement and best practices. This collective experience led to refining the QFT model, making it applicable and beneficial to all young learners.

The following suggestions are based on developmentally appropriate practices for the youngest children. These adaptations of the QFT allow for establishing meaningful connections to the QFT topic, implementing the QFT flexibly over multiple sessions and/or days, modeling both simple and complex questions, facilitating an appropriate question-generating process, teaching multimodal strategies, and fostering a diversity of student voices.
[See Appendix A: Adaptations for Implementing the Question Formulation Technique with Young Children]

Culturally and Developmentally Relevant Q-Focus

Facilitators select topics or Q-Focuses that are culturally relevant and engaging for young children. They consider the cultural context of children, families, and communities. The more relevant, experiential, and accessible the Q-Focus, the more engaged the students will be (Muhamad, D. & Mat Noor, M., 2021). Traditionally, even teachers of early elementary-aged students provide the facts about historical events with no real connection to the student's current experience. For example, a teacher may introduce a study on civil rights by stating, "We are going to learn about the civil rights movement. Read this history book and answer the questions at the

back of the chapter." Instead, when using the QFT, the teacher may guide the students toward the same information in the history book but structure their experience around their current environment, such as the elephant in the park.

Miss Fancy is a vital piece of the student community's culture. However, many children and adults at Use Your Noodle had not previously stopped to think about the elephant statue, the children on her back, and how it fits into Birmingham's historical context. Kate, whose family regularly visits the Avondale park, has never questioned the relevance of the elephant statue. After being introduced to Miss Fancy at camp, Kate insisted that her father take her to the park immediately after camp and subsequently to the adjacent library to learn more about the elephant. In her research, Kate discovered that children were divided into two categories in the world of Miss Fancy. Children with dark skin were not allowed to ride the famous elephant, and children with white skin were allowed to ride. The intrinsic curiosity demonstrated within Kate allowed a more personal connection with the history of civil rights at a developmentally appropriate level. Six-year-olds can be curious about these complex ideas when given an appropriate entre.

Teachers chose Miss Fancy and other Q-Focuses at Use Your Noodle Camp with the children's interests and cultural backgrounds in mind. They included classical music, photographs of basketball star LeBron James, Japanese picture books, a live cicada, and the art of breadmaking.

Flexible Implementation of the QFT

Adapting the QFT for early childhood students requires a simplified and developmentally appropriate approach. Flexible implementation of the QFT includes spreading the steps over multiple days. Given young children's attention spans, keeping activities brief and aligned with other developmental considerations is essential. For example, the brainstorming step of the QFT may need to be divided into two or three time periods.

When introducing the initial Q-Focus of Miss Fancy in the park, Ms. Ramos and Ms. Sims recognized that the park was exciting to the children and that the July heat made attention spans short. At the park, the period dedicated to collecting was brief, lasting less than ten minutes. Despite the short time for the QFT that day, it is worth noting that nearly every child either asked a question or contributed to someone else's question. Once inside the classroom, all questions were placed on the anchor chart. The teachers continued to collect questions later that morning.

Presenting Q-Focus on specific content several days in a row provides the necessary scaffolds for young children to develop more questions. When young children come to school with diverse experiences, teachers should not assume their young students possess the necessary prior knowledge for Q-Focus.

Ms. Ramos and Ms. Sims chose multiple Q-Focuses related to Miss Fancy to engage their students' curiosity. They incorporated the actual statue, historical photographs, and a captivating picture book into their teaching materials. These Q-Focus and the questions generated remained prominently displayed on the weekly whiteboard, encouraging the children to investigate and explore them further.

After the picture book was re-read, six-year-old Isa enthusiastically approached Ms. Sims. "I know the answer to the questions about Miss Fancy being mean! (referring to Kate's observation about Miss Fancy not letting Black and Brown children ride on her back). Isa continues, "Miss Fancy found the boy and wanted to be his friend! Maybe it was the man who

owned Miss Fancy that was mean and not the elephant." Ms. Sims follows, "I will write the answer here, Isa. Would you be willing to share that during our goodbye circle?"

Simple and Complex Question Modeling

Modeling questions is important for formulation and encouraging more complexity. Teachers may need to model the ability to formulate questions, even teaching some students how to change a statement into a question. If the child cannot independently generate the question, the teacher can model the change from statement to question and encourage them to ask similar questions.

On the first day in the park, Ms. Ramos allowed Max to rephrase his statement, "Miss Fancy is so big." into a question. Ms. Ramos asks, "Do you have a question about Miss Fancy being so big?" Max accurately rephrases the statement into a question and promptly follows it with more questions. "Hmm, I wonder why Miss Fancy is so big? Did she eat a lot of hay today? What did Miss Fancy eat, and who fed her?"

Teachers can ask questions like "how" or "why" during natural conversations and point out those questions in real time. Further noticing and naming the students' questions draws attention to the student-generated questions and provides more examples.

Throughout the camp day, Ms. Ramos and Ms. Sims could be heard asking, "I wonder why Josephine enjoys swimming?" or "How did Mr. Quinn (the custodian) figure that out?"

Most classroom questions from teachers and students tend to be low-order basic factual questions (CITE). In an inquiry-based learning environment, using the QFT framework, young children can ask more complex questions that encourage deeper comprehension of academic content.

During the study of Miss Fancy, Ms. Ramos presented a newspaper photograph of the actual Miss Fancy and her trainer as one of her Q-Focus. Children used the picture to add additional questions to their collection of questions about Miss Fancy. Children asked questions like "Why is the man with the elephant?" "Is the elephant his pet?" "Does he own the zoo, and is he trying to get a bunch of animals?"

James exclaims, "Wait, Miss Fancy is real?"

Caleb asks, "There is a zoo in the park?"

Ms. Ramos responds, "What kind of questions do you need to ask to find the answers to your questions?" "Well, I went to the zoo last week. Maybe I could ask the zookeeper?" Ms. Ramos answers, "What would your question be to get as much information as we need to find the

answers?" Caleb responds, "I know Miss Fancy's zoo was in Avondale. How did the zoo move to where you are now? Why did you move the zoo?" Ms. Ramos says, "Let's add those to our anchor chart."

In subsequent QFT investigations, Ms. Ramos and Ms. Sims found that sometimes a simple change in how they prompted children could lead to a greater number of and also more complex questions. For example, instead of asking, "What questions do you have?" they asked, "What are you wondering about?"

Question-Generating Process

After reading Meet Miss Fancy, the children had many questions. Ms Sims realized she could capture them more effectively by dividing the children into three groups, each with an adult to transcribe the questions. The adults could write the questions more quickly, so the children did not have to wait and potentially forget their questions, allowing more children to share. Teachers placed individual questions on sticky notes for sorting and classifying later.

Depending upon the children's writing abilities, teachers can transcribe questions as the students ask them or allow students to write their questions. If teacher transcription is warranted, divide students into small groups or one-on-one to facilitate dictation by children to adults. Use shared writing or "sharing the pen" to record questions. Because teachers recorded questions, the physical act of writing was not a barrier. Students could generate more questions when the teacher transcribed them because the teacher quickly wrote them. Furthermore, students became more confident in their strengths and abilities.

Multi-Model Strategies to Promote Autonomy

Multimodal literacy strategies play a crucial role in young children's literacy development within a cultural context (Taylor & Leung, 2020). The Question Formulation Technique (QFT) facilitates social interaction through gestures, pictures, words, and movement, offering diverse ways for students to engage with information and process questions.

When sorting questions, teachers can use visual cues/labels or simple labels like "More" for open-ended and "Yes/No" for closed-ended questions. These categories provide a reference point throughout the investigation. Writing questions on sticky notes allows students to visualize and move them between the closed and open categories, promoting independent inquiry and deepening comprehension and curiosity. This method grants students greater autonomy in their exploration.

Repetition and consistent revisitation of the Q-Focus and their discoveries enable students to reassess their questions and identify new areas to explore continually. An anchor chart at the child's eye level displaying the Q-Focus and questions enhance accessibility, fostering independent and supported learning (Routman, 2014; Kocak et al., 2020). Whether teacher-led or student-driven, this iterative process motivates and engages, enriching the student's learning experience.

During day one, Ms. Ramos facilitated conversations about what classified a question as "open" or "closed." She then used sticky notes to write the questions so they could easily be removed and placed in columns when the children decided whether they were open or closed-ended. Later in the day, Marta and Edward argued about whether one question was open or closed-ended. They decided together that it might just be both. They brought their dilemma to Ms.

Ramos, who encouraged them to make a "maybe" category that allowed for those unique questions.

After Ms. Sims re-reads the picture book, Isa and Kate take the book to the reading rug and, lying on their stomachs, retell the story, looking at the pictures. Isa realizes maybe Miss Fancy isn't mean after all. Because the anchor chart is at eye level and accessible to the children, they are motivated and can identify questions they can answer through the picture book.

Encouragement of Diverse Student Voice

Marta, a five-year-old child who primarily spoke Spanish, volunteered a question to Ms. Ramos' class. "Does Miss Fancy eat grass?" When asked to categorize questions, Marta confidently decides her question is open-ended. James countered, "That is NOT an open-ended question because the answer would be No!" Ms. Ramos asked Marta if she agreed or disagreed, and she responded, "It is open-ended. And I know this because Miss Fancy could eat grass, beans, or corn." Ms. Ramos tells the class, "Marta believes this is an open-ended question." The teacher understands the question is closed-ended; however, she also knows future exploration and revisiting will provide an opportunity to clear up the misconception. For now, the question remains in the closed column.

Provide opportunities to learn in an equitable classroom. Young children learn to ask questions in an environment that encourages discourse and acceptance of all questions. When students can hear a variety of voices and also express their own, it provides an equitable classroom that celebrates all perspectives.

Observations in the Early Childhood Classroom

The educators reported shifts in the students' behaviors throughout the program. Once the expectation for questioning was established, students promptly generated their inquiries. This development transcended the confines of the QFT and the initial Q-Focus, permeating the entire classroom environment. Spontaneously, students began to document their questions as they read books. They began asking questions about the activities they engaged in independently. Furthermore, they revisited the questions collected during the QFT. These questions became a point of reference for students during various periods of the day, extending beyond QFT sessions to occasions such as morning meetings and lunchtime.

In Ms. Sims' classroom, seaweed was the designated Q-Focus for one week. The children asked dozens of questions as they felt, touched, and observed the rectangles of scaly seaweed. They asked questions like, "Why is it bumpy?" "Can you eat it?" and "Why does it smell funny?" Ms. Sims transcribed these questions, displaying them on a large sticky note for the students' reference. Independently, students revisited the wall, examined the seaweed, and approached Ms. Sims with additional questions to add to the list. The children tasted flavored seaweed snacks at the end of the week. As they sampled the novel snack, several students pointed back to the compiled list of questions, actively engaging in answering them.

In an educational setting where student questions are anticipated and expected, children feel empowered to ask questions about their interests and explore their inquiries. An environment that includes questioning fosters a heightened level of engagement among students. This engagement, stemming from the freedom to inquire, sets the foundation for a classroom culture of curiosity. With curiosity and engagement, a dynamic learning community can emerge where the

exchange of questions becomes a shared and celebrated practice. In this atmosphere, students receive knowledge and actively contribute to the learning process, giving them a sense of ownership in their educational journey.

Moreover, a questioning classroom culture creates an inclusive learning environment where diverse perspectives and interests are acknowledged and embraced. As students explore their questions, they deepen their academic knowledge, develop critical thinking skills, and naturally incline toward inquiry-based learning.

During the three-week program, the students return to the park where Miss Fancy is permanently located. They go there for snacks, play on the swings and slides, and explore other parts of the park. Teachers observed the students frequently engaging in spontaneous inquiries about the park's history, demonstrating their ongoing curiosity and ability to relate the information to their lives. "Were there other animals in this park way back then, Ms. Ramos?" "Why is this lionhead here?" "Did water come out of its mouth, and other children played in it?" "Do you think other (Black and Brown) children may have goneded down this slide?" "Were they allowed in the park?"

In essence, establishing an expectation for student questions and celebrating curiosity within a classroom lay the groundwork for an active, authentically stimulating educational experience. This proactive approach enhances student engagement and creates an inclusive environment where learners are empowered to explore.

Conclusion

The case of *Miss Fancy* is an illustrative example of how the QFT can be tailored to meet the diverse needs of the youngest learners, who come from various backgrounds and possess various abilities and ages. Cultivating a questioning culture in educational settings is essential for effective learning (Shah et al., 2018; Pelo, A. 2017). It empowers active student participation, promoting deeper cognitive learning. More research on constructive teaching strategies is needed to enhance young children's question-asking abilities (Spencer et al., 2020). The QFT is a valuable tool that enriches children's educational experience and affords them greater autonomy in their learning process. Initially designed for older students and adults, its application in early childhood education has yet to be extensively explored. In the context of *Use Your Noodle*, the QFT provided a structured foundation for developing an inquiry-based teaching approach while further developing academic content.

In conclusion, integrating QFT has proven to be a powerful method of encouraging children's deeper learning while providing a simple method for teachers to create a culture of curiosity in the classroom.

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Appendix A

Adaptations for Implementing the Question Formulation Technique with Young Children

Adaptations for Implementing the QFT with Young Children
1. Developmentally and culturally relevant Q-Focus a. Authentic connection with Q-focus 2. Flexible implementation of QFT a. Reduced time for each Q-Focus b. QFT implemented over days and weeks c. Organization of students into small groups 3. Simple and complex question modeling a. Use of question stems 4. Question generating process a. Reduction of adult-to-child ratio for transcribing questions b. Use of shared writing/sharing the pen for recording questions 5. Multi-modal strategies a. Visual cues or simple labels for organizing questions b. Continuous revisitation of Q-focus c. Anchor chart at eye level 6. Encouragement of diverse student voice a. Acceptance of all questions without judgment b. Exposure to a variety of voices c. Creation of a safe space for the expression of voices