

Teachers' Level Of Education: Impact On Classroom Quality And Children's Academic Outcomes

An increasing emphasis has been placed on quality teaching in recent years as policymakers look for ways to make sure children enter school ready to learn and to improve the classroom experience young students encounter when they get there. In most cases, policies define qualified teachers by their level of education.

Nearly all state certification standards for “highly qualified” teachers focus on degree status.¹ Also, more and more state policies are requiring preschool teachers to have at least a Bachelor’s degree, preferably in early childhood education. Recent studies suggest, however, that a focus on a teacher’s education level alone is not enough to guarantee improvements in classroom quality or the academic outcomes of children in preschool and elementary school. The findings are not reported as an indictment of the role of teachers’ education in creating quality learning opportunities. Instead, they suggest that teachers’ education should be considered one part of a system of factors that contribute to teacher quality, classroom quality, and children’s gains.

The studies also note that little attention has been given to measuring the opportunities to learn that teachers create in the classroom – the quantity and quality of instruction and the relationships between teachers and children – and that more research is necessary to better understand how teacher preparation programs influence the quality of teaching, the quality of classrooms, and the outcomes of students.

Teachers' Education And Preschool Quality

Requiring public preschool teachers to have at least a Bachelor’s degree is a trend in early education policy across the United States aimed at providing high-quality early learning opportunities for young children. Of the 38 states that support prekindergarten programs, 17 require lead teachers to hold at least a Bachelor’s degree. Another 12 require at least some of a program’s teachers to have a Bachelor’s degree.²

This emphasis on preschool teachers’ education has foundations in research. In the childcare literature, for example, most studies have suggested an association between

higher levels of teacher education and higher global quality in center-based care.³ However, while the existing literature generally indicates that more education may be beneficial, there is no conclusive evidence that a teacher with a Bachelor’s degree or any other specific level of education will produce a high-quality classroom.

Recent Research

A study published earlier this year in the journal *Child Development* examined seven major studies of early care and education that predicted classroom quality and the academic outcomes of 4-year-olds from the educational level and major of their teachers. The findings, in general, suggest that teachers’ level of education is not a very reliable tool for predicting classroom quality and children’s outcomes.

Evidence that better-educated teachers had higher quality classrooms was found in two studies, including a national study that examined the effectiveness of Early Head Start programs. The Early Head Start study, for example, reported that classrooms taught by teachers with a graduate degree had higher Early Childhood Environment Rating Scale – Revised (ECERS-R) scores than classrooms taught by teachers with a Bachelor’s degree. In turn, teachers with a Bachelor’s degree had higher ECERS-R classroom scores than teachers with an Associate’s degree.

However, no evidence supporting an association between teachers’ education and classroom quality was found in four other studies. And one study found that teachers with a Bachelor’s degree had lower quality classrooms than teachers who did not have a Bachelor’s degree.

Limited evidence was found for an association between teachers’ level of education and the academic outcomes of their students. For example, among the studies that included a prereading measure for students, two reported that children’s scores were modestly higher when teachers had a Bachelor’s degree, but three other studies found no association between prereading scores and teacher’s highest level of education.

When math skills were examined, five of seven studies

reported no association between children's early math skills and whether the teacher had a Bachelor's degree or higher.

In five of the studies, researchers were able to examine whether having a degree and a major in early childhood was associated with classroom quality and students' academic gains. Three studies found no association. Two others did report some association. For example, the Early Head Start study found that among teachers who majored in early childhood education or child development, those with graduate degrees had higher quality classroom than teachers with a Bachelor's degree, who, in turn, had higher quality classrooms than teachers with an Associate's degree. But the study did not find a significant association between children's outcomes and teachers who majored in early childhood education or child development.

Researchers Urge Caution

Researchers cautioned that the findings should not be considered an indictment of teacher education. Instead, the results likely reflect the current realities in the field.

One possible reason cited by the researchers for the weak associations between teacher education and classroom quality may be that the teacher preparation system does not adequately prepare teachers to teach preschoolers. For example, the U.S. Department of Education only recently raised the standards for effective educational practices⁴ and it is likely that many veteran teachers in the field were exposed to studies using the new standards. Also, a review of K-12 teachers suggests that the research base for coursework, methods, and pedagogy in teacher preparation programs is lacking.⁵ This may also be true in the early childhood field.

Researchers also suggest that forming trusting, respectful relationships with students may be underemphasized in the preparation of early childhood teachers. Teachers may enter the field strong in content knowledge around academic instruction, but weak in building the individual relationships that have been shown to be critical in building a basis for learning during early childhood, including academic skills.⁶

Teachers also do not work in a vacuum. Even the most highly skilled need adequate materials, curricular support, skilled teaching assistants, and a physical setting suited to the needs of young children to be effective. Teachers who do not receive this support to effectively implement what they have learned was cited as another reason why a stronger association between teacher education and classroom quality was not found. Studies suggest, for example, that entry-level teachers often feel overwhelmed and could use monitoring or coaching when they first begin teaching.⁷ Also, lower wages typical of preschool programs may lead the best teachers with a Bachelor's degree to take better-paying elementary school jobs.

Raising Child Care Quality

In Pennsylvania, recent initiatives have shown some

promise in improving the knowledge of child care providers, raising the quality of their programs, and contributing to educational gains among young children.

A recent study, for example, suggests that the Keystone STARS program helped to reverse a near decade-long decline in the quality of child care in the state. The initiative of the Department of Public Welfare's Office of Child Development uses incentives, support, and assistance to encourage providers to improve the quality of their early care and education programs. Providers work to achieve multiple levels of quality. Each level builds on the previous one and uses research-based best practices to improve program quality and child outcomes. The standards address issues such as staff qualifications and professional development, early learning, partnerships with family and community, and leadership and management.

Child care centers participating in Keystone STARS were found to have higher quality than the Pennsylvania average for child care centers. The higher the STARS level providers achieved, the higher were their quality scores. Overall, Environmental Rating Scales (ERS) scores range from 4.11 for centers at the STARS entry level to 5.42 for those at the highest STARS level. The average ERS scores for child care centers not participating in STARS was 3.94. Child care centers that achieved the two highest STARS levels had significantly higher overall ECERS-R scores than centers not enrolled in the Keystone STARS system.⁸

The study also reported that teachers with college degrees provided higher quality early education and care. Child care centers and family child care homes had significantly higher ERS scores when the teacher had at least an Associate's Degree, regardless of the STARS level they achieved. Teachers with at least five years of experience had significantly higher ERS scores than those with less experience.

In western Pennsylvania, Keystone STARS was an essential part of the Strengthening Early Learning Supports (SELS) project that improved the quality and quantity of early learning opportunities in four at-risk neighborhoods. One successful SELS strategy was to assign coaches to work individually with providers to encourage their participation in Keystone STARS and provide them with support in raising the quality of their programs. Before SELS, only eight of 123 neighborhood child care providers were participating in Keystone STARS. At the end of the 17-month SELS project, 84 providers were enrolled in the Keystone STARS quality system.⁹

Elementary Classroom Experiences

A recent major study suggests that in elementary school classrooms, as in preschool settings, the education of teachers does not guarantee their students high-quality learning experiences.

The study, published this year in the journal, *Science*,

examined the elementary classroom experiences of more than 1,000 children recruited at birth in 10 U.S. cities, including Pittsburgh. The sample covered more than 2,500 classrooms in more than 1,000 elementary schools. All of the teachers had a Bachelor's degree, 90% had state teaching credentials, and 44% had a master's degree.

Classroom Experiences

The experiences of fifth graders, although highly variable, were found to focus more toward performance of basic reading and math skills, rather than problem-solving and reasoning skills or other content areas, the study reported. Few opportunities were provided to learn in small groups, to improve analytical skills, or to interact extensively with teachers. Fifth grade results were similar to those found in first and third grade classrooms.

Fifth graders, for example, spent more than 91% of their time working in whole-group or individual-seatwork settings. Only 7% of their time was spent in small group instruction, typically groups of two to five students.

In the fifth grade, 37% of instruction was in literacy and 25% was in math. In first and second grade classrooms, math accounted for more than 50% of instruction. Also in the fifth grade, science accounted for 11% of instruction and social studies for 13%. The average fifth grader received five times as much instruction in basic skills as instruction focused on problem solving or reasoning. Fifth grade teachers spent 17% of their time instructing students on managing materials and time.

The study found that while children were engaged in instructional activities, they typically were exposed to only one method of instruction, such as a vocabulary worksheet or watching the teacher do math problems on the blackboard. Children also received fairly generic feedback about their performance and it was focused primarily on the correctness of their work.

Researchers also examined the amount of verbal and non-verbal interaction teachers had with individual children. Their findings suggest that most of the time children were left to manage their own learning and activity without contact with the teacher. Also, children who needed support were unlikely to receive it consistently.

The study reported that classroom dynamics were not related to teachers' degree status or experience. Overall, the researchers stated, their findings indicated a pattern of instruction that "appears inconsistent with aims to add depth to students' understanding, particularly in mathematics and science."

Policy Implications

Teachers play a critical role in determining the quality of the young children's learning experiences and academic outcomes. Recognizing this, education policies have increasingly sought to improve the quality of teachers in the nation's

schools and early care and education programs, largely by using the level of teacher education as the standard.

Recent major studies strongly suggest, however, that such a standard is too narrow – that the degrees teachers attain do not guarantee quality classrooms and improved student achievement.

Researchers who examined seven major studies of preschool programs and published their results in *Child Development*, concluded: "The studies, taken together, do not provide convincing evidence of an association between teachers' education or major and either classroom quality or children's academic gains."

In a study of elementary classrooms published in *Science*, researchers stated: "It is troubling that opportunities to learn in classrooms are unrelated to features intended to regulate such opportunities and that students most in need of high-quality instruction are unlikely to experience it consistently. If metrics and regulations for high-quality teaching continue to rely on teachers' credentials or school attributes, actual opportunities to learn may not be driven to improve."

Redefining Quality Teaching

The American Association of Colleges for Teacher Education (AACTE), in a statement last year to the Commission on No Child Left Behind, challenged the commission's definition of a "highly qualified teacher" as too narrowly focused on teachers knowing their content. The AACTE argued that the term "highly qualified" should be reserved for teachers who not only know their content, but are also able to teach it effectively.¹⁰

Effective teaching, the AACTE stated, includes being able to engage students' interest in a subject; impart the content in ways that children will comprehend; change teaching strategies to address the learning styles of diverse learners; and observe student progress toward standards and interpret scores from formal assessments, then make the appropriate adjustments in their teaching.

The AACTE, in recommending a more demanding definition, said prospective teachers should exhibit consistent success through a substantial pre-service clinical experience in a challenging school setting supervised by both university- and school-based faculty. The AACTE also recommended that a portion of No Child Left Behind funds be spent on school/university partnerships based on a Professional Development School model for the purposes of candidate development, new teacher induction, ongoing professional development, and to improve teacher retention.

The Professional Development School (PDS) model involves an intensive, collaborative relationship between community school systems and an education college. It is based, in part, on the teaching hospital model, in which practitioners contribute to advancing the field and training the next generation of doctors and other health professionals. The PDS is designed to improve the training of students who

want to become teachers by providing more actual classroom experience and to improve the skills of experienced teachers by offering more professional development opportunities and contact with an education college.

Few systematic evaluations of the PDS model have been done. However, available evidence suggests the potential to improve teachers' classroom skills, student outcomes, and teacher retention. A Rand Corporation study, for example, found that high school students in a West Virginia PDS generally outscored students who were not in the PDS in the basic skills and math portions of the Stanford Achievement Test.¹¹

Further Study Needed

The need for further research is a conclusion consistent with the results of major studies of the association between teachers' education and classroom quality and student outcomes. For example, despite evidence that teachers' instructional practices and relationships with students are critical to classroom quality and students' learning, observations of classroom experiences for large samples of students are limited.

In the *Child Development* report, researchers emphasized the need for more precise studies of specific types of teacher preparation and how they interact with other teacher and program characteristics to produce a high-quality educational experience for children.

The report suggests that teachers' education be considered part of a system of factors that contribute to teacher quality, which in turn is related to classroom quality and children's gains. The findings, the authors state, should not be seen as diminishing the value of education in high-quality programs for young children. "Rather, these findings can serve as a springboard that moves research and policy regarding the role of teachers' education and, more broadly, teacher quality to a new level that is increasingly multifaceted and nuanced."

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This Special Report, written by Jeffery Fraser, is largely based on the publications cited above. It is not intended to be an original work but a summary for the convenience of our readers. References noted in the text follow:

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