The Status of Child Development Knowledge in Educational Research: A Content Analysis of Early Childhood and Elementary Education Journals

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ABSTRACT

AUBREY COMPERATORE: The Status of Child Development Knowledge in Educational Research: A Content Analysis of Early Childhood and Elementary Education Journals
(Under the Direction of Dr. Rebecca New)

Education reform calls for a cohesive professional knowledge base from which all educators can draw. Scholars have proposed that this knowledge base, as informed by educational research, entails knowledge of subject matter, pedagogical content knowledge, and a deeper understanding of child development. However, a common knowledge base has historically remained elusive for two educational sub-groups—early childhood and elementary education. Guided by socio-cultural theory and the notion of professional cultural communities, this study focused on the status of child development research in published journals across the sub-fields. Through an exploratory content analysis and descriptive statistical analysis, results indicated an equal distribution of developmental research across the sub-fields and audiences, as well as an attention to children's achievement and learning. The only significant difference was found between journals published for a scholarly audience. Implications suggest an evolution of the two knowledge bases and propose future research to examine this change.

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LIST OF ABBREVIATIONS

ECE: Early childhood education

ECEJ: *Early Childhood Education Journal*

ECRQ: *Early Childhood Research Quarterly*

ESJ: *The Elementary School Journal*

K-12: Elementary/secondary/general education

RER: *Review of Educational Research*

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The question of what teachers should know has long been a point of contention among policy-makers and teacher educators. One area of concern addressed by some scholars is that there is a lack of a cohesive and expansive knowledge base for all educators and teaching students to draw upon (Darling-Hammond, 2010; Hiebert, Gallimore, & Stigler, 2002). While this idea is gaining acceptance, opinions vary about what a common vision of teacher knowledge entails. Some reformers see a greater focus on content and subject matter pedagogical knowledge as essential to a common knowledge base **(**Ball, Thames, & Phelps, 2008; Shulman, 1986, 1987**)**, while others advocate for the inclusion of a wider range of teacher knowledge alongside specialized content knowledge, including knowledge of classroom management **(**Darling-Hammond, Wise, & Klein, 1999) and an understanding of the social and political contexts of the teaching profession (Darling-Hammond, 2008). Of most relevance to this study are increasing calls for a greater emphasis on the knowledge of the learner **(**Diamond, 2010**)**, and particularly, a shared knowledge of child development (Eccles & Roeser, 2010; Hammerness, 2006; Meece & Schaefer, 2010).

Educational research plays a fundamental role in contributing to the notion of a cumulative professional knowledge base. The National Research Council (NRC) explains that "...developments in the study of learning have led to an era of new relevance of science to practice" (Bransford, Brown, & Cocking, 2000, p. 4). This group of

scholars underscores the belief that "...research literature can inform the understanding of current pedagogical ideas and beliefs" (Ibid). As a result of such endorsements, educational research is increasingly used to identify sound "evidence-based" policies and instructional practices (Biesta, 2007**)** adopted by state-level agencies, school districts, and teacher preparation programs (Fuerer, Towne, & Shavelson, 2002). Scholars have compared the importance of educational research on the teaching profession to medical research on the field of medicine (Slavin, 2002). It is also an increasingly prominent source of influence on the beliefs, perceptions, and practices of teachers and the teacher educators who prepare them for their roles in the classroom (Bowman, Donovan, & Burns, 2000; Stanovich & Stanovich, 2003).

The integration of these two contemporary aims—a more coherent and shared professional knowledge base that is supported by contemporary research—is made difficult due to the subjectivities of scholars engaged in the discourses of teacher quality and educational research. Although widely used to establish practices and policies, educational research is also often critiqued for its limitations and biases (Borko, Liston, Whitcomb, 2007; Rosenthal, 1999; Smagorinsky, 1995). Indeed, some (cf., Bloch, 1987; 1991; New, 2003) suggest that educational research, far from a potential 'equalizer' of knowledge, may contribute to the separate knowledge bases, as well as long-standing divisions between two educational sub-fields—early childhood and elementary education.

Long regarded as "*the* knowledge base" [italics added] (Zimiles, 2000) for early childhood educators, research on and about child development has contributed to a professional identity often at odds with other interpretations of what it means to be a

professional in educational sub-fields. This study considers this history of specialization in light of recent calls for a more widely shared understanding of "the learner" (Darling-Hammond, 2006; Meece & Schaefer, 2010). These separate specializations are also apparent in the historical separation of research scholars and education practitioners. Stipek (2010) suggests that collaboration between those in these distinct professional roles is "challenging because of differences between practitioners and researchers in incentive structures, cultures, goals, status, and more" (p. xii). Socio-cultural theory will guide this analysis of research as a form of professional discourse that functions as a mediating tool for the establishment of cultural norms and routine within and between specialized educational communities of practice.

This exploratory study utilized both qualitative and quantitative analytic strategies, to examine the current status of child development research in journals aimed at early childhood and K-12 (specifically elementary) teachers, teacher educators, and education scholars. Specifically this study addressed the following research questions:

1. What is the extent of research on child development (social, emotional, cognitive and language development) in select peer-review research journals associated with two educational sub-fields (early childhood and K-12 education) over the past five years?

2. Are there differences in the frequency and types of developmentally informed educational research, conceptualized here as research genres, within and between these two sub-fields?

3. Are there differences, and if so, what are they, in the extent and nature of developmental research targeted to a particular audience (teacher/practitioners or teacher educators/researchers) within the selected journals of the two sub-fields?

Results of this exploratory study, as derived from an iterative process of analysis, provided new insights into the multifaceted meeting point of child development scholarship within the larger context of educational research as it contributes to the distinct and shared knowledge bases of the early childhood and elementary education sub-fields. An exploration of the frequency and genres of child development research will inform future research on the evolution of these sub-fields' choices of research worthy of influencing the concept of teacher quality and professional competence.

LITERATURE REVIEW

In response to the calls for a common knowledge base and with the aim of identifying potentially distinct contributions to interpretations of teacher quality and professional competence (Cochran-Smith et al., 2012), this study reviewed contemporary education journals targeted to teachers and researchers in early childhood and K-12 education. Paying particular attention to the contrasting and changing concepts of teacher quality between and within the two sub-fields, the literature review that follows examines the following: (1) education reform and the contemporary calls for a common knowledge base, focusing on the role of child development; (2) early childhood education's historic reliance on developmental psychology as it has informed the field; and (3) socio-cultural theory as a guide to interpretations of research in the establishment of educational sub-fields as cultural communities with their distinct values, traditions, and discourses.

Education Reform, Teacher Quality and a Professional Knowledge Base

Education reform is at the forefront of local and federal policy debates, and the goal of improving schools and teaching has become a global issue (Tatto, 2006). With the pressures of greater accountability increasing for schools and their teachers, the question of what knowledge and skills contribute to "teacher quality" is of principal concern (Cochran-Smith et al., 2012). Among the various proposals put forth on how to improve teacher quality is that by Darling-Hammond, Wise, and Klein (1999), who cite

ample research to support the concept of a general common knowledge base for the educational profession. Likening the teaching profession to those in the law and medical fields, this proposed framework is supported by a growing number of advocates for consistency. And yet, this is not a new idea. Historically, elementary and secondary teaching students have long been required to demonstrate their knowledge of a wide variety of subject matters ranging from reading and orthography to algebra and botany, to gain acceptance into education institutions (Harper, 1939). Later, increased attention to content areas and a deeper understanding of disciplinary concepts contributed to particular educational knowledge known as the "professional treatment of subject matter" (Feiman-Nemser, 1990). The expectation for elementary teachers to attain proficiency in multiple content areas remains (National Council for Accreditation of Teacher Education, 2008) despite growing understandings of the importance of other aspects of quality teaching. In spite of these calls for greater uniformity across educational sub-fields (Bird, Kennedy, & Sykes, 2010; Darling-Hammond, 2010; Heibert, Gallimore, & Stigler, 2002) a common knowledge base for educators remains elusive.

Among the obstacles to achieving and sustaining a common knowledge base is the increasingly complex nature of the field of education. Different conceptions of what teachers should know and understand can be found in the publications educators subscribe to and the organizations they take part in. Professional publications and research journals (e.g., *Journal of Mathematics Teacher Education; The Reading Teacher; Technology and Engineering Teacher*), as well as professional organizations (for example, National Council for Teaching Mathematics, The International Reading Association, and the National Science Teachers Association) are targeted to distinct sub-

groups based on specialized content knowledge. In this same vein, distinctions that focus on children's ages and characteristics as well as educational settings are also apparent in journals (for instance, *Early Childhood Research Quarterly, The High School Journal*, and *Journal of Research in Special Educational Needs*) and organizations (e.g., the National Association for the Education of Young Children, the Association for Middle Level Education, and the National Association of Special Education Teachers). These professional resources all represent the various "disciplinary silos" (Kreber, 2009) present within the teaching profession. They support diverse interpretations of teacher quality and make it difficult to imagine a common knowledge base.

It is difficult to argue with the importance of this specialized knowledge, especially within content areas such as literacy, math, and science (National Research Council, 2010). Indeed, subject matter knowledge is the first component in recommendations for a common knowledge base. Ample research confirms that a teacher's own in-depth understanding of the content is required to help a student understand an objective (Ball & McDiarmid, 1990, Darling-Hammond, 2008). It also adds to the historically established expectations that elementary educators should have at least a general understanding of all of the various content areas taught in school settings.

Although integral to teaching, subject matter knowledge is not sufficient in most current interpretations of teacher quality. The second recommendation for a common knowledge base is the knowledge and skills of best pedagogical practices for specific content areas (Ball, Thames, & Phelps, 2008). Building upon early work initiated by Shulman (1986; 1987), contemporary interpretations of Pedagogical Content Knowledge (PCK) include "… the amalgam of a teacher's pedagogy and understanding of content

such that it influences their teaching in ways that will best engender students' learning for understanding" (Berry, Loughran, and van Driel, 2008, p. 1272). This component of the common knowledge base emphasizes distinctions between the various content areas (National Research Council, 2010). As was the case with specialized content knowledge, the aim of commonly shared PCK is consistent with a definition of teacher quality for educators who are themselves specialists. For sub-fields of education such as elementary education the aim is more problematic. Yet the subject matter and pedagogical knowledge across the disciplines is central to the elementary teachers' repertoire and a key feature of teacher education and professional development experiences.

The final and most recent addition to this framework for a professional knowledge base is an extensive knowledge of the learners themselves (Darling-Hammond, Wise, and Klein, 1999). Unlike the first two elements, this third component is not content-specific; rather, it responds to the growing recognition of the importance of making the connection between children's development and learning, as well as their academic success. Ample research has shown that supporting learners' social, emotional, and cognitive development can positively affect their complex executive functioning (Diamond, 2010), reading comprehension (Polleck, 2011), and overall academic achievement (Rosenblatt & Elias, 2008). A broad and theoretical understanding of the learner includes an awareness of how children learn, grow, and develop cognitively, physically, linguistically, emotionally, and socially, as well as how schools and teachers affect children's development (Eccles & Roeser, 2010). Darling-Hammond notes, "Interpreting learners' statements and actions and shaping productive experiences for them requires knowledge

of child and adolescent development and an understanding of how to support growth in various domains—cognitive, social, physical, and emotional" (2008, p. 92).

From preschool to high school, research makes clear that "schools not only influence children's acquisition of knowledge and skills, but also provide an important context for their social and emotional growth" (Meece & Schafer, 2010). Over the last decade, understanding child development and learning has gained a new significance in the education profession (Bowman, Donovan, & Burns, 2000). So, too, has the role of educational research. Research as a form of "scientific evidence" has contributed to contemporary federal and local policies and "best" practices (Fuerer, Towne, & Shavelson, 2002), interpretations of educator competence and teacher quality, and "shareable language" promoting a professional discourse (Hiebert, Gallimore, & Stigler, 2002).

Despite the influence educational research has on the profession, there is skepticism about its ability to provide objective and empirical evidence. Some scholars have made the case that research in the social sciences, including educational research, must be subjective in nature due to the personal positioning of the researcher (Smagorinsky, 1995). An example of particular research priorities and their influence on professional discourses and practices can be found in the field of early childhood education. Its reliance on child development research has contributed to a professional knowledge base and identity that has historically been in marked contrast to that of K-12, and especially elementary teachers.

Early Childhood Education and Developmental Psychology

Early childhood education has long been rooted in psychological science and research, particularly the concepts and theories of child development. Questions of how children grow, learn, and develop had been pondered for centuries, but had not been purposefully studied until the late 1800's (Dennis, 1949) when scholars, most notably William James and his student, G. Stanley Hall, first directed purposeful attention to *The Contents of Children's Minds* in 1883.

Although interest in studying children's development grew as a result of such work, the acceptance by the general scientific community was slow in coming. In the quest to be seen as a true science, psychological researchers began to adopt more empirical forms of inquiry, including the use of psychometrics and behaviorist methods (Bloch, 1991). At the dawn of the twentieth century, developmental psychology began to emerge as a formal social science.

The education of young children developed in parallel with the growth of the field of developmental psychology, and contributed to the emerging field of Child Study. Research training was housed in laboratory schools found on university grounds and shared among other departments in the social sciences (Bloch, 1991, 2000). The study of children and their development contributed to new theories of development tested in early childhood services. Not only was the role of child development fundamental to the sub-field's identity and its quest for professional status, but the sub-field has also been vital to the growth during the 20th century of developmental psychology as a scientific field.

The National Association for the Education of Young Children (NAEYC), founded in 1926 and now with an international membership of 80,000 ("About NAEYC", n.d., para. 1), has historically interpreted its mission as one of advocacy and

dissemination of child development research to inform childcare and educational policies and practices. This research—and its translations—has been used repeatedly as a counter-argument to other ideas (of parents, policy makers, and educators of older students) about what and how best to teach young children. The widely disseminated *Guidelines for Developmentally Appropriate Practice in Early Childhood Programs Serving Children from Birth Through Age 8* (Bredekamp, 1987) became first line of defense against the "drill and practice" curriculum push-down that was making its way into early childhood classrooms (New, 2003). The document, later referred to as "the green bible" (Ibid.), included recommendations for "developmentally appropriate" practices (DAP) that explicitly challenged the notion of early academics and teacher-directed instruction. In spite of the premise that DAP guidelines were grounded in research, initial critiques noted that the guidelines were theoretically out of date and ignored new understandings of cultural and developmental diversity (Mallory & New, 1994). The guidelines were subsequently revised (Bredekamp & Copple, 1997); and again in 2009. The most recent iteration (Copple & Bredekamp, 2009) reflects more recent research and theoretical interpretations of how to promote children's early learning, including instructional practices for such academic domains as literacy and mathematics.

Recommendations for developmentally appropriate practice continue to influence national and state early childhood policies and practices; and are increasingly referenced in other nations' early childhood policies (cf., New, Wu, & Li, 2011). Even as it has enhanced the status of the field of early education, research on child development has

contributed to long-standing differences in the beliefs and practices of early childhood and elementary educators (Bloch, 1987, 1991; New, 2003).

From their very different beginnings, early childhood educators and elementary educators have embraced a disparity of ideas pertaining to the knowledge of competent teachers within their professions. These polarizing perceptions make the creation of a common knowledge base difficult to achieve. While elementary education has thrived on the foundation of content matter and pedagogy--the first two components of the proposed knowledge base--early childhood has maintained its reliance on the third element--knowledge of the learner. Despite the growing presence of early childhood classrooms (teachers and children) in public schools alongside elementary teachers, this division continues to be manifested in their separate professional organizations, teacher licensures, federal and local policies, and teacher preparation programs (Darling-Hammond, Chung, & Frelow, 2002; Dunn & Rakes, 2010; File & Gullo, 2002). The division is also apparent in the professional discourses. While elementary educators refer to pedagogical content knowledge, the very concept of "developmentally appropriate" practice, and the use of its acronym (DAP), remain central features of the discourse of the early childhood community, a characteristic that has long distinguished them from their colleagues in elementary education.

Socio-cultural Theory and Professional Cultural Communities

Contemporary theories of knowledge construction help illuminate the processes by which these professional communities—early childhood and elementary education--establish their respective belief systems or "paradigmatic orientations" (Zeichner, 1983). Socio-cultural theory serves as a useful lens through which to view the professional

values and practices of adults as potentially informed by the discourses that surround and engage them in their environments.

Socio-cultural theory interprets human development as a result of shared involvement and participation in cultural communities (Rogoff, 2003). Cultural communities, in turn, are constituted by a shared understanding of what is "true, good, beautiful, and efficient" (Shweder, 1999, p. 64) and a commitment to the passing on of a group's values, beliefs, and goals. Cultural communities are further comprised of social activities that are characterized by particular viewpoints, cultural tools, histories, traditions, discourses, and contradictions (Engeström, 2001).

The discourse within a cultural community plays a major role in members' construction of knowledge. Cultural communities have specified and designated forms of communication that aid in the construction of cognitive development as well as the sustainability of the culture (Rogoff, 1984). The essential and influential role of discourse in a community can be seen in interpersonal relationships and the formation of cognitive learning through socialization (Daniels, 2004; Rogoff & Toma, 1997). The "social relation of exchange" is another way scholars describe the collective knowledge integral to survival and well-being and an individual's "funds of knowledge" (Moll & Greenberg, 1990).

Discourse as transmitted through text and media is a more contemporary version of communication norms within a cultural community. Text as discourse plays a significant role in influencing what is being taught, learned, communicated, and transferred (Krippendorff, 2004). Newspapers, print ads, textbooks, magazines, and

professional research publications, can all reflect and influence a culture's beliefs, traditions, and perceptions.

Professional groups constitute their own specialized cultural communities. Professions such as law, medicine, and accounting are each characterized by particular discourses and critical thinking skill sets, as well as shared goals and ethics. In many cases, the discourses have their own labels; in learning to practice law, students engage in "legalese", or a common discourse with which to grasp the many new concepts and philosophies associated with the profession. Such discourse not only indicates membership in a group; it also signifies those who are *not* members. "[Legalese] does not work like 'regular' English, much to the frustration of non-lawyers who try to understand us" (Morris, 2003, p.269).

The notion of professional membership in specialized cultural communities, and especially the principle of situated learning, are relevant to the education profession. Teachers, teacher educators and scholars also engage in their own specialized cultural communities with shared belief systems, traditions, norms, and discourses (Schoen & Teddlie, 2008).

Studies examining professional memberships and associated belief systems among teachers (Darling-Hammond, 2002; Dunn & Rakes, 2010; Mowrer-Reynolds, 2008; Vartuli, 1999) provide ample support for what might be considered the cultural differences between early childhood and elementary teachers—current and futures—in terms of what constitutes effective teaching (or "teacher quality" [Cochran-Smith et al., 2012]) and supportive learning environments. It is reasonable to assume that these differences reflect and surely contribute to further disparities in the research priorities,

since, according to Humphry (2005), “shared ways of thinking dictate the questions asked and the knowledge-base created” (p. 37).

What role, then, does educational research play in either supporting or challenging traditional distinctions between the cultural communities of early childhood and elementary education? Given the real and potential influences that the research community has on teaching and teacher education (Cochran-Smith et al., 2012; Humphry, 2005; Stanovich & Stanovich, 2003), further study is needed to identify the “funds of knowledge” (Moll & Greenberg, 1990) available to these two sub-fields of education.

This study responds to this need by examining a small sample of the assembled wisdom in the form of research knowledge conveyed to the two educational communities—early childhood and elementary education. Socio-cultural theory will guide this examination of research as a mediator and contributor to the discourses, knowledge bases and interpretations of teacher quality associated with these two cultural communities.

METHODOLOGY

The aim of this study was to examine the status of child development knowledge as a recommended component of a common knowledge base within two sub-fields--childhood and K-12 education—as presented in their respective professional research journals. The decision to focus this inquiry on peer-reviewed journals rather than other forms of knowledge dissemination is due to their general role in informing the discourse of teacher competence and quality (Cochran-Smith, et al., 2012). Research journals are described as a primary source of "archival research-based knowledge" (Stanovich & Stanovich, 2003, p. 4) and a means of dissemination to pre-service and practicing teachers as well as teacher educators. As such, this study sought to identify one type of research-based knowledge in the form of development research in peer-reviewed journals associated with the two sub-fields.

The data for this study consisted of select articles published over the last five years in professional peer-review journals targeted to early and/or elementary educators, administrators, and teacher educators. Published articles were analyzed for the inclusion of child development research in general, the representation of specific developmental domains, and the related foci in educational research, conceptualized for this study as research genres. Due to their diverse historical backgrounds, expectations were that there would be differences in the inclusion of developmental research in journals directed to the sub-fields of early childhood and elementary education.

Identification of Journals

The four journals selected for this study were chosen based on intended audience, content, SJR ratings, and H-Indices. The primary classification of peer-reviewed journals was done using the SCImago Journal and Country Rank database (SCImago, 2007). The initial search parameters included only journals found in the "Social Sciences" with subject categories listed as either "Education" or "Development and Education Psychology". "Development and Education Psychology" was used as a criterion so as to include early childhood education's historical underpinnings and current philosophies and practices. Journals from all countries were represented and rankings were listed as of 2011.

Rankings of journals were listed highest to lowest according to the SJR, or SCImago Journal Rank, a system used to calculate the average number of weighted citations as compared to article publications, similar to the Thomson Reuters Impact Factor. Listed also were each journal's H-Index, or the rank indicating the number of articles with a given number of citations in each publication. The higher the SJR and H-factor, the more influence a scientific journal is believed to have in the research community.

In the "Education" journals category, 525 journals were ranked. The journals were ranked by H-Index and scanned for journals applicable to the education of children in school-type settings. Journals were excluded that focused on education in other professions, such as healthcare, or for specialized education, such as special education. Using these criteria, only the five top-ranked journals were considered for review. The top five journals included *Review of Educational Research* (#5), *Educational Researcher*

(#13), *Review of Research in Education* (#18), *Elementary School Journal* (#35), and *Harvard Educational Review* (#52). It was noted, however, that journals pertaining to early childhood education were not represented in the top five; therefore, further investigation of the ranking list was necessary in order to identify journals in this area. The first journal ranked specifically for early childhood was *Journal of Early Childhood Research* (#107), followed closely by *Early Childhood Education Journal* (#111). These were included for further review.

Rankings for journals found in "Development and Education Psychology" were also used to identify journals appropriate to this study. This list contained 91 ranked journals and also included areas of development that did not pertain specifically to early childhood research or teaching. *Early Childhood Research Quarterly* (#24) was the first journal to be ranked that is specific to the period of early childhood, followed by *Early Child Development and Care* (#59). Although publications such as *Child Development* (#4), *Monographs of the Society for Research in Child Development* (#13), and *Child Development Perspectives* (#24) were ranked higher, the research in these journals relate to children in general, rather than to children in educational settings or the early childhood profession specifically.

In acknowledgement of the uses of research for two broadly conceived populations, these journals were identified on the basis of whether they were written for researchers or primarily for practitioners. This distinction was made to examine the idea of how researchers in different sub-fields use the same information to address varying topics and questions (Cochran-Smith et al., 2012). Therefore, intended audience and

content were identified for each of the nine journals based on descriptions posted on each publishers' website and classified as either "Research" or "Practitioner" oriented.

The final criterion used for the selection of journals considered the sub-field as either "Early Childhood" or "K-12" (Elementary/General Education). This process of identification, selection, and elimination, including influence and content, as well as intended audience, resulted in the final four journals—two each for early childhood and elementary/general education, one intended for researchers and one intended for practitioners in each sub-field. Descriptions of the four journals follow.

Early Childhood Publications

Early Childhood Research Quarterly (Research)

Early Childhood Research Quarterly was first published in 1986, and in the last three years has been cited 2,419 times. The journal has an H-Index of 35 and is published quarterly. Recommended by and affiliated with NAEYC, *Early Childhood Research Quarterly* has remained influential over its twenty-six year existence (Early Childhood Research Quarterly, 2012). Containing mostly empirical research, the content included pertains to children from birth to age eight. Topics covered include all of the developmental domains, child care and schooling, policy, and multiculturalism "Early Childhood Research Quarterly, 2012).

Early Childhood Education Journal (Practitioner)

Also including research related to children aged birth through eight years, *Early Childhood Education Journal* has had 1,776 citations over the past three years (SCImago, 2007). One of the longest-running journals in early childhood education, it has been published since 1973 and continues to cover content meant for early childhood

practitioners, including teachers and care providers (Early Childhood Education Journal, n.d.). *Early Childhood Education Journal* contains content related to curriculum, family, health and nutrition, and child development, as well as practical uses for the information published. With an H-Index of 10, it is published six times per volume.

K-12 Publications

Review of Educational Research (Research)

Not only was *Review of Educational Research* (*RER*) ranked number five according to the SJR, but this journal is also rated number two of 184 journals under the Education and Educational Research category, according to Thomson Reuters's 2010 journal citation report (Review of Educational Research, 2012). Broadly covering all areas of education, including psychology, history, and science, *RER* has to published reviews of educational research since its beginning in 1931. Intended mainly for an audience of researchers, *RER* has an H-Index of 61. It was noted to have 1,032 citations in the past three years and publishes quarterly.

The Elementary School Journal (Practitioner)

The Elementary School Journal (*ESJ*) has been providing research to teachers and researchers since 1914 (The Elementary School Journal, 2012). *ESJ* publishes research solely involving schools and classrooms for the elementary and middle grades. Content includes child development, psychology, teaching, and learning. Published for both researchers and practitioners, *ESJ* strives to guide teacher practices using to research. With an H-Index of 31, it has had 808 total citations over the past three years. *ESJ* is published five times a year.

These four journals served as the source for the research articles analyzed in this study.

Coding and Analyses

Content analysis is a widely used qualitative research method in the social sciences, although it can also be used quantitatively (Hsieh & Shannon, 2005; Järvelin & Vakkari, 1993; Young, 1990). Using coding schemes, word counts, and the characteristics of language, content analyses of documents entail identification of pieces of spoken or written text as the unit of analysis. Guided by socio-cultural theory, summative content analysis was determined to be an appropriate means by which to examine and contrast the content of information being selected for and shared by previously described educational research journals. Summative content analysis explores the use of particular words in context and is often used to investigate the frequency and types of presentation of topics as they appear in written text. Summative content analysis also involves inferring communicative messages and as such, is a constructive way to analyze the patterns and aims of each sub-fields' journals. These "messages," endorsed by the peer-review process as being conceptually and methodologically sound *and relevant* educational research, can have an influence on the cultural environments of each field, and thus the perceptions of those engaging in the field (Potter, Sheeshka, & Valaitis, 2000).

A preliminary search of documents in each journal volume was performed with each publisher's search engine. The keywords "cognitive development", "social development", "emotional development", "social cognition", "child development", and "social emotional development" were used as initial criteria for the search. The keyword

phrase “social and emotional development” was also included in the search as it is of special interest to this study and can be categorized as its own domain (Shweder, 2009). After the elimination of duplicate results, as well as results identifying articles that used the term “development” in other instances (e.g., “professional development” and “curriculum development”), 101 out of 793 published articles were selected for further analysis in this first round.

However, based on these broadly defined criteria, only a small number of the 101 accepted articles were from *Elementary School Journal* and *Review of Educational Research,* with the majority coming from the two early childhood journals (*Early Childhood Education Journal* and *Early Childhood Research Quarterly*). With the goal of being inclusive and in acknowledgement of how developmental domains are variably identified in theoretical and research literature, a second review of 50% of each journal’s articles per year (for a total of 397 articles) were read in their entirety to determine if there were alternative ways of representing child development domains. Terms were reviewed and added to the criteria for selection based on their wide-spread inclusion in basic child development texts, theories and research publications (e.g., Shweder, 2009). This review revealed an additional ten developmental concepts —“language development”, “social and/or emotional competence”, “self-regulation”, “cognitive functioning and/or processes”, “social and/or emotional skills”, “identity development”, “neuroscience/brain development”, “cognition”, “emotional regulation”, and “temperament”. Using this expanded list and their combinations, an additional 95 articles were identified, bringing the total number of articles that included child development as one of the research variables to 196, representing all four journals.

Following this initial process of article identification, data was generated that illustrates the frequency of coded content counts of articles as percentages of the total number of articles in each journal over a five-year period. Descriptive statistics, including z-scores comparing journals as a function of sub-field and intended audience, were used to identify any statistically significant differences as a function of early childhood or elementary classification, as well as practitioner or research-based audiences.

This process then examined the types of developmental domains that were represented in the research based on four *a priori* categories, as discussed in the results: social/emotional development, cognitive development, language development, and general child development. Categories were determined based on the following criteria:

- **Social/Emotional Development**—These articles included the developmental concepts of "social and/or emotional competence", "self-regulation", "social and/or emotional skills", "identity development", "emotional regulation", and "temperament" (An example of an article included in this category is Rhoades, Warren, Domitrovich, & Greenberg, 2011).
- **Cognitive Development**—These articles included studies focused on learning and thinking and included the developmental concepts of "cognitive functioning and/or processes", "neuroscience/brain

development", "cognition", and "social cognition"[1] (e.g. Kleinert, Browder, & Towles-Reeves, 2009).

- **Language Development**—These articles included topics such as language acquisition, word meanings, and vocabulary use (e.g. Mages, 2008).
- **General Child Development**—These articles did not identify any specific domains of child development, but rather the general field of child development (e.g. Onchwari, Onchwari, & Keengwe, 2008).

Through an iterative process guided by research questions, several common research foci were observed across the journal articles pertaining to children's achievement, learning, and behavior. To further establish the parameters of what I have conceptualized as research genres, a random sample of the accepted articles was generated to establish initial coding criteria. Forty articles, or 20% of the total, were randomly selected and read in their entirety as a means of identifying research foci. This review contributed to the identification of the three main research genres: (a) Studies on child development that are focused on achievement and learning, (b) those focused on social and behavioral aspects of schooling, and (c) those that consider the interaction or transaction of child development research with both student achievement and social context and/or behavior. These genres will be referred to as (a) *Achievement/Learning*, (b) *Social/Behavior*, and (c) *Achievement/Social*. In addition to developmental research in these three research genres, a small number of articles (n = 8) focusing on other topics,

[1] Although "Social Cognition" was initially treated as its own domain, due to the small number of articles identified it was collapsed into Cognitive Development for subsequent analyses.

such as universal childcare and food safety (e.g. Enke, Briley, Curtis, Greninger, & Staskel, 2007), were identified. These articles were not considered in further analyses, reducing the *n* for subsequent analyses. These genres are discussed further in the results section of this thesis.

Instances of inclusion of these research genres in the articles were tabulated to examine their frequency and percentages of occurrence. Prior to comparing journals as a function of sub-fields and audience, statistical z-tests were done to determine if there were any significant differences within the sub-fields and target audience in terms of their research foci.

Analyses focused on the nature of the research content found in articles included in a single research genre—that on Achievement/Learning. In the first round of this the exploratory process, common foci relating to children's academic achievement and learning were identified as belonging to the same category. Articles within the Achievement/Learning genre were analyzed a second time, distinguishing between those studies focused on children's academic performance and school outcomes (as represented by grades, test scores, and the display of specific skills) and those focused on learning processes.

The results of this series of analyses are described in the following chapter.

RESULTS

This study was motivated by knowledge of the historic reliance on child development as the primary knowledge base for educators in the sub-field of early childhood education as distinct from teachers of older children. Recent calls for changes in the knowledge bases for both early childhood and kindergarten through high school (K-12) educators raised the question about the current status of child development knowledge in educational research across both sub-fields. The initial query of this study was straightforward, in the form of three research questions: (1) What is the extent of research on child development in select peer-review journals associated with early childhood and K-12 education over the past five years? (2) Are there differences in the frequency and types of developmentally informed educational research, conceptualized here as research genres, within and between these two sub-fields? And (3) are there differences in the extent and nature of developmental research being conveyed to different populations of educators—those who are researchers/teacher educators in contrast to teachers/ practitioners? Additional questions emerged from the analysis of developmental research genres, to be described in the following presentation of results. As described previously, the data for this study is from four professional educational journals—two from early childhood and two from elementary or secondary education,-- over a five year period (2007 to 2011).

Question 1: What is the extent of research on child development (social, emotional, cognitive and language development) in select peer-review research journals associated with two educational sub-fields (early childhood and K-12 education) over the past five years?

This question is addressed in two parts: (1) determining the representation of developmental research across the four journals, and (2) identifying the particular developmental domains included in this research. The first part of the question was partially addressed by the identification of articles in each of the four journals based on the expanded criteria for selection (as described in the methods chapter). This strategy resulted in a total of 196 studies involving child development distributed across all four journals (see Table 1). The inclusion of developmental research as a percentage of all published articles ranged from 23% to 32% or approximately one-fourth (in *Early Childhood Education Journal* and *Elementary School Journal*) to one-third (32% of *ECRQ* articles and 29% of those in *Review of Educational Research*). Not only do these figures suggest a change in the role of child development in early childhood research, given its historically prominent status; they also indicate what *may* be a change in its inclusion on K-12 educational research. Although this study did not examine actual changes over time in either field, it's noteworthy that, in 2009, journals focused on K-12 included a greater percentage of child-development based research studies than did either of those targeted to early childhood scholars and educators. (See Table 1 for yearly and five-year averages for child-development based studies published in each of the four journals).

To determine whether or not these differences were statistically significant, Z scores were calculated, first for the two journals within each sub-cultural group. There were no significant differences in percentage of developmental research articles within

the early childhood journals (*Early Childhood Education Journal* and *Early Childhood Research Quarterly*) (z = .92) or those focused on K-12 educators (*Elementary School*

Table 1

Representation of Developmental Research per Journal by Year

	ECEJ		*ECRQ*		*ESJ*		*RER*	
Year	*no.*	%	*no.*	%	*no.*	%	*no.*	%
2007	18	26%	8	21%	5	26%	4	24
2008	20	24%	15	41%	5	15%	13	21%
2009	8	13%	8	24%	8	28%	13	41%
2010	21	30%	15	42%	4	13%	4	22%
2011	16	28%	15	35%	1	3%	1	6%
Totals	83	24%	61	32%	23	23%	29	29%

Note. Total number of articles across all journals = 196.

Journal and *Review of Educational Research*) (z = .08). Z scores were then calculated using combined totals of developmental research articles (from the research-oriented and teacher/practitioner-oriented journals) in each of the two sub-fields. The two early childhood journals had a combined total of 144 developmental research articles (83 from *ECEJ* plus 61 from *ECRQ*), representing 27% of the possible 533 articles in those two journals over the five-year period. The two K-12 journals included 52 developmental articles (23 from *ESJ* and 29 from *RER*), or 20% of the 260 published articles in those two journals. This modest difference was not statistically significant (z score = 1.04).

The second component of this question considered the relative distribution of

developmental research as a function of developmental domains. Each of the 196 child development articles (hereafter referred to as "developmental research") was classified as one of the four identified domains—social/emotional, cognitive, language, and general child development.[2] As indicated by Table 2, research on social/emotional development

Table 2

Representation of Child Development Domains in Four Journals

(as Percentages of Developmental Research)

Domain	*ECEJ*	*ECRQ*	*ESJ*	*RER*
Social/Emotional	45%	42%	52%	31%
Cognitive	24%	30%	13%	38%
Language	7%	15%	17%	18%
General	24%	13%	18%	14%

made up the largest percentage of the total number of developmental research articles in three of the four journals. In *RER*, the largest percentage of developmental research articles included cognitive development (38%); social/emotional research studies were a close second (31%). Contrary to expectations, the greatest percentage of developmental articles involving socio-emotional development were in the *Elementary School Journal;* over half of the articles in *ESJ* were focused on that developmental domain. In spite of these differences, the four journals shared common interests in socio-emotional and cognitive development (combined, these two domains represented two-thirds or more of

[2] Note: If more than one developmental domain was included in an article, a decision was made based on the primary focus. No articles were double-coded.

all the developmental research published). These shared scholarly foci appear to be at the general expense of research on language development (the least represented developmental domain in three of the four journals).

Having established that a) child development research is present in each of the four educational research journals; and b) a majority of those studies (65-72%) are focused on socio-emotional and/or cognitive development, the analysis proceeded to address the next question—what content is addressed in journals dedicated to educational research that utilizes developmental knowledge?

Question 2: Are there differences in the frequency and types of developmentally informed educational research, conceptualized here as research genres, within and between these two sub-fields?

To answer that question, the next round of analyses considered research foci of those studies identified as having a developmental component. The concept of "research genre" has been used as way to frame the different ways in which "researchers have conceptualized and studied….connections" (Cochran-Smith et al, 2012, p. 1); in this case, the genres distinguish between combinations of developmental research and educational topics. As described in the methodology, a preliminary review of 40 articles resulted in the identification of three developmental research genres: studies focused on student achievement and/or learning processes or dispositions (hereafter referred to as *Achievement/Learning*); research focused on the social context, interpersonal and behavioral dimensions of children's educational experiences (hereafter referred to as *Social/Behavior*; and research that looked at the interface among and between these broad educational domains (hereafter referred to as *Achievement/Social*). See Table 3 for the distribution of these three research genres across the four journals.

Table 3

Developmental Research Genres

(Research Genres as Percentages of Developmental Articles)

Research Genres	*ECEJ*	*ECRQ*	*ESJ*	*RER*
Achievement/Learning	43%	21%	36%	59%
Social /Behavior	28%	28%	5%	7%
Achievement/Social	29%	51%	59%	34%

Two things stand out immediately—that developmental research within the *Achievement/Learning* genre is a major presence in three of the four journals (top priority in *Early Childhood Education Journal* and *Review of Educational Research*); while developmental research within the *Social/Behavior* genre is less often included in the early childhood journals and is at a minimum in the two K-12 journals.

Achievement/Learning. Developmental studies categorized within this research genre represented the largest percentage of developmental research articles in *ECEJ* (43%) and *RER* (59%). This genre was also the second-largest group of studies as a percentage of developmental research articles in *ESJ*. In contrast to these figures, only 21% of the developmental research published in *ECRQ* was in this genre. As previously described, this genre included studies on children's development in relation to their academic performances or learning processes. Examples of topics included within this research genre are the following:

- *Early Childhood Education Journal*

    - academic outcomes of preterm babies (Keller-Margulis, Dempsey, & Lloren, 2011)
    - the promotion of cognitive and social development to enhance "interthinking" during literacy activities (Pantaleo, 2007)
- *Early Childhood Research Quarterly*
    - the usage of temporal terms in preschool children (Grant & Suddendorf, 2011)
    - children's changing knowledge of content matter (Hannust & Kikas, 2007)
- *Elementary School Journal*
    - application of theories of cognitive development to curriculum development (Hinde & Perry, 2007)
    - cognitive reading strategy instruction (Sailors & Price, 2010)
- *Review of Educational Research*
    - using computer-assisted instruction to support learning of statistics (Sosa, Berger, Saw, & Mary, 2011)
    - studying models of cognition for students with disabilities (Kleinert, Browder, Towles-Reeves, 2009)

As was done with the previous analysis of the relative representation of developmental research studies in journals from the two sub-fields, Z scores were calculated, this time on the inclusion of developmental articles in research genres. *Achievement/Learning* as percentages of developmental studies published in each sub-field's journals were compared. The number of early childhood articles in this genre

totaled 46 (33 from *ECEJ* and 13 from *ECRQ*), or 34% of the identified 137. This difference in genre representation within the ECE journals did not reach a level of statistical significance ($z = 1.50$). Developmental research articles in the K-12 journals within this genre totaled 25 (8 from *ESJ* and 17 from *RER*), representing 49% of the 51 developmental studies in the K-12 journals. The difference between the two journals within the K-12 sub-field was not statistically significant ($z = 1.05$). As was the case with Question 1, when the figures from both types of journals were combined, there were no significant differences between the two sub-fields ($z = 1.21$).

Social/Behavior. The articles in this research genre represented the smallest percentages of published developmental research in the two K-12 journals (1 article, or 5% of developmental studies, in *ESJ;* and 2 articles, or 7% in *RER).* In contrast, this genre represented 28% in each of the two early childhood journals (n = 21 in *ECEJ;* n = 17 in *ECRQ*). These figures, particularly the low representation in the K12 journals, were surprising given the priority to social/emotional developmental research across the four journals, suggesting that research interest in the *domain* of social/emotional development does not predict attention to social and behavioral dimensions of schooling. The greatest contrast between the domain and the research genre is found in the *Elementary School Journal.* As previously noted in Table 2, 52% of the developmental research in *ESJ* included some aspect of social and emotional development, and yet only one article (5% of the developmental research in that same journal) was identified in the research genre focused on the social context and behavioral dimensions of schooling.

The following examples from each of the four journals illustrates how various

child development domains can be used to address a broad array of education topics, only a few of which are about the social dimensions of schooling and children's behavior.

- *Early Childhood Education Journal*
    - conflict resolution with peers in the primary school settings (Heydenberk and Heydenberk, 2007)
    - infant cognitive development as it informs music therapy and affects social development in children with disabilities (Wheeler & Stultz, 2008)
- *Early Childhood Research Quarterly*
    - language development and toddlers' self-regulation (Vallotton and Ayoub, 2011)
    - family stress and cognitive functioning (Henrich et al., 2011)
- *Elementary School Journal* (the only article in this genre)
    - teachers' relationships with children's families and the impact on children's social skills (Iruka, Winn, Kingsley, & Orthodoxou, 2011)
- *Review of Educational Research* (one of the two articles in this genre)
    - social outcomes of children's participation in organized activities (Bohnert, Fredricks, & Randall, 2010)

Z scores were again computed to determine statistically significant differences within and between the sub-fields. There were no significant differences within either the early childhood journals ($z = .00$) or the K-12 journals ($z = .06$). In spite of apparent extremes between the two sub-fields, z-score calculations comparing the percentages of articles in the *Social/Behavior* genre in ECE and K-12 journals were also not statistically significant ($z=1.15$)

Achievement/Social. The final research genre was a more complex set of studies that combined attention to three foci: child development, some aspect of learning or school achievement, and some element of the social and behavioral contexts. Overall, this genre represented a large percentage of the identified developmental research. A majority of the developmental research articles found in *ECRQ* and *ESJ* (51% and 59%, respectively) were studies of children's social lives in school in relation to their academic learning and/or achievement. Approximately one third of the developmental research studies in *ECEJ* and *RER* (29% and 34%, respectively) were also within this genre. Specific examples of research identified as Achievement/Social found in the four journals include:

- *Early Childhood Education Journal*
    - Positive Behavior Support intervention and its impact on preschoolers' academic engagement (Carter & Van Norman, 2010)
- *Early Childhood Research Quarterly*
    - children's parental interactions as predictors of school readiness (Walker & MacPhee, 2011)
- *Elementary School Journal*
    - educational settings and learning environments as they impact first graders' social competencies (Wilson, Pianta, & Stuhlman, 2007)
- *Review of Educational Research*
    - trends in social-emotional learning interventions and academic learning (Hoffman, 2009)

Following the delineation of the research genres, it is readily apparent that a majority of the developmental research in these four journals focused on children's academic achievement and/or learning. These results suggest a common understanding by these four journals' researchers, peer-reviewers, and editors that children's learning and achievement is "the bottom line" (Cochran-Smith & Fries, 2010).

Given the large presence of developmental articles focused on children's or students' academic performance and learning, and consistent with the iterative nature of this study, a *post hoc* analysis unpacked the developmental research categorized as within the *Achievement/Learning* genre. This secondary analysis distinguished between genre studies focused on student performance/academic outcomes and those focused on learning as a developmental process.

As presented in Table 4, slightly more than half (52%) of the developmental articles within the *Achievement/Learning* genre focused on learning as a developmental process. The remaining articles in this genre examined children's academic performance and school outcomes, such as grades, test scores, and the display of specific skills. The distribution of research foci—achievement or learning—over the five years might suggest that specific journals had a tendency to publish articles containing a strong preference for one lens or the other. In each case, the ratio approximates a one third: two-thirds distribution. And yet, the differences do not appear to align with either sub-field or audience. For example, developmental research articles in *ECEJ* focused primarily on studies of learning processes (61%) in contrast to those focused on student academic performance and outcomes (39%). *Early Childhood Research Quarterly*, in contrast,

prioritized academic performance (77%) to studies on children's learning processes (23%).

Table 4

Developmental Research in Achievement/Learning Genre: Distinguishing Process from Outcomes

Research focus	*ECEJ*	*ECRQ*	*ESJ*	*RER*
Learning as developmental process	61%	23%	37%	65%
Achievement Outcomes/Performance	39%	77%	63%	35%

Similar differences distinguished between the two K-12 journals, albeit with different priorities for the practitioner versus researcher journals. *Elementary School Journal* favored research related to student outcomes (62.5%), and *Review of Educational Research* had a greater percentage of studies (65%) focused on learning processes.

Z-scores were calculated for these research foci and, surprisingly, there were no within-group differences in either learner-focused studies or the outcomes-focused studies in ECE ($z = 1.20$ and 1.91, respectively) or in the K-12 journals (learner-focused comparison z score =.74; outcome-focused comparison z score = .85). Z scores were then calculated using the combined number of articles in each sub-field and again, there were no statistically significant differences between Early Childhood and K-12 inclusion

of developmental research articles focused on achievement and other student outcomes (z=0.32) or those focused on learning as a development process (*z* = .34).

At this point in the analysis of developmental research and its associated research genres, no statistically significant differences have been noted. The above-noted variation in the relative presence of the two components within this particular research genre to target audiences of teacher educators/researchers versus teachers/practitioners serves as a transition to the final research question of this study.

Question 3) Are there differences, and if so, what are they, in the extent and nature of developmental research targeted to a particular audience (teacher/practitioners or teacher educators/researchers) within the selected journals of the two sub-fields?

This study was premised on an interpretation of research as a source of valuable knowledge within cultural communities of educators, knowledge that is subject to the particular histories, priorities and traditions of those communities. Among the ways in which research is vulnerable is the determination of what topics are worthy of study; another vulnerability is the determination of who should have access to this information. Not only is it the case that research may not always be valued by those who work in different fields (Cochran-Smith et al, 2012); it is likely also the case that research may not always be valued by or shared with those who have different roles within the same field. With these ideas in mind, this analysis next examined the distribution of child development studies as a function of target audience (teacher/practitioner vs. teacher educator/scholar).

Z scores were calculated to test for any significant differences in the inclusion of developmental research as a function of intended audience—practitioners or researchers.

As previously described, the two practitioner journals were *Early Childhood Education Journal* and *Elementary School Journal.* The two researcher journals were *Early Childhood Research Quarterly* and *Review of Educational Research.* There were no statistically significant differences in the percentage of developmental research articles in the two practitioner journals (24% in *ECEJ* and 23% in *ESJ*; *z* score = .19) or the two researcher-focused journals (32% in *ECRQ* and 29% in *RER*; *z* score = 1.26).

As was done in previous calculations, journal totals were then combined, this time across the two target audiences. While there were more developmental research articles (as a percentage of total) in the journals targeted to researchers in contrast to those directed to practitioners (30% versus 22%, respectively), this difference was also not statistically significant (*z* = 1.26).

The final analysis associated with Question 3 addressed the question of whether or not research genres were differently represented with the journals as a function of audience. Statistical z-tests were again done on the separate and combined figures on two research genres: *Achievement/Learning* and *Social/Behavior.*

There were marked but non-significant differences between the two practitioner journals' inclusion of the research genre *Social/Behavior* (28% in *ECEJ,* versus 5% in *ESJ,* z score = .96). There were also no statistically significant differences between the *Social/ Behavior* genre in the researcher-oriented journals, even though those differences also seemed marked (28% in *ECRQ* vs. 7% in *RER, z score = .75*). There were also no statistically significant difference between this genre representation in the two researcher and two practitioner journals when z scores were calculated on the combined figures (z = .08).

The sole statistically significant difference emerged in the final analysis of this study. While the two practitioner journals have statistically similar percentages of the *Achievement/Learning* genre (43% in *ECEJ*, 36% in *ESJ*, z score = .35), there was a marked and statistically significant difference in the representation of developmental studies focused on Achievement/Learning between the two journals targeted to researchers (z score = 2.23, $p < 0.05$). The percentage of research related to children's school achievement and learning in *RER* (59%) was almost three times that of studies of the same genre within *ECRQ* (21%) in the five-year period. This statistical significance disappeared when the two research journals were combined and contrasted with those directed to practitioners. There were also no statistically significant differences in the within-genre studies focused on student learning versus those focused on student achievement, within or across target audiences.

The implications of these findings will be considered in the discussion chapter.

DISCUSSION

This study was provoked by a personal recognition of a difference in the preparation of early childhood and elementary school teachers; while students in early childhood were learning about child development, future elementary teachers were taking subject-specific methods courses. A review of the literature made clear that these characteristics-- as found in my personal pre-service and in-service professional development experiences-- are not unusual. Rather, these differences in teacher education are linked to historical underpinnings of the two sub-fields. Given the increasingly prominent role of research in the determination of "evidence-based practices" (Humphry, 2005; Moll & Greenberg, 1990) in both early childhood and elementary education and recent calls for these sub-fields to integrate their knowledge bases, this study began with the goal of determining if, and if so, how, child development research literatures are represented in contemporary educational research directed to the two sub-fields.

Before discussing the results, it is important to acknowledge this study's limitations. This research began with my own set of biases regarding the importance of the inclusion of child development research in the knowledge bases of both the sub-fields. This bias is consistent with other subjectivities in educational research, as noted by Smagorinsky (1995). Also, due to the iterative nature and single-authorship of this study, the ability to establish inter-coder reliability and replicate the findings is unknown. The decision not to double-code developmental domains may have led to an under-

representation of the domains found in the literature. Other limitations included the choice of the number and type of research journals; the reliance on the search engines offered from each publication's website as a means of identifying articles rather than adding multiple engines (such as ERIC or Academic OneFile); the likely errors of omission based solely on the analyses of the titles, keywords, and abstracts; and the lack of more precise statistical strategies and coding-schemes to investigate the nuances in the studies themselves as well as their comparisons. Despite these limitations, this study has generated findings that have raised new questions and implications for future research.

In the following discussion, findings from this study will be considered in terms of the evolving knowledge bases for both sub-fields and the challenges and pitfalls of the education field's various cultural communities. The discussion concludes with suggestions for teacher education and professional development.

Early Childhood Education and K-12: More Commonalities Than History Suggests?

Contemporary scholars advocate for a common knowledge base and shared professional standards. While taken from a small sample, findings from this study suggest a diminishing role of child development research in the field of early childhood education, at least as evidenced in recent research journals. Further, given that there were no significant differences in the representation of child development theories and research across the two sub-fields, this small study challenges the premise of significant differences in the valuing of developmental research between early childhood and elementary education. Rather, the percentage of articles utilizing child development was modest in both fields (27% of the articles published in the two early childhood journals and 20% of those targeted to elementary/general education). This finding suggests two

potential changes in child development's role in contemporary educational research—heading in opposite directions.

In spite of child development's status as the knowledge base for early childhood education (Zimiles, 2000), articles that included child development were in the minority in the early childhood publications overall. There are a number of interpretations of this finding. It may be that the child development knowledge base is less central to the field than history would predict given the literature on this topic, or perhaps this body of scholarship is not being as consistently disseminated to the early childhood educational research community by the field of developmental psychology. Or it may be the case that the early childhood educational research community is utilizing this developmental knowledge less often in favor of other factors associated with children's school experiences and achievement. Indeed, these findings strongly suggest that early childhood educators and scholars may be expanding their topics of research to include other areas of influence on children's education. This finding is consistent with recommendations from some early childhood scholars who have made the case for the need to include a wider spectrum of information in the early childhood knowledge base, such as pedagogical content knowledge and critical perspectives derived from other disciplines (Stott & Bowman, 1996; Zimiles, 2000).

While these findings suggest less reliance on child development knowledge in early childhood research than history would imply, there is also evidence of a greater-than-anticipated integration of developmental research among K-12 scholars. Although this study did not examine changes in the research over time, it appears that at least some scholars in the K-12 sub-field are now attending to this knowledge base, even as this

group also has integrated this literature with that on subject matter and pedagogical content knowledge. This is consistent with recent recommendations that child development theories and research are essential to elementary and secondary teaching (Darling-Hammond, 2010; Katz, 1996). This attention to developmental research was especially apparent when considering the frequency of articles focusing on social/emotional development. Although representing a large percentage of developmental research across the four journals, this domain played the biggest role in *Elementary School Journal*. Topics such as interpersonal competence (Farmer, Irvin, Sgammato, Dadisman, & Thompson, 2009), the impact of retention on social/emotional development (Willson & Hughes, 2009), teacher relationships and school adjustment (Buyse, Verchueren, Verachtert, & Van Damme, 2009), and adjustment and gender differences (Ponitz, Rimm-Kauffman, Brock, & Nathanson, 2009) all included or focused on the social and/or emotional development of children. Although not subject to systematic investigation, a number of articles were identified that related to current issues such as bullying and sexual abuse, indisputably factors of influence on children's socio-emotional development as well as their school achievement appeared. These articles mostly emerged in the K-12 journals (e.g., Bauman, 2008 and Gini, 2008 in *ESJ* and Topping & Barron, 2009 in *RER)* and may be an indication of the broadening of the knowledge base to include child development principles based on needs presented to scholars that emerge from within social and educational contexts.

Along with the social/emotional domain, cognitive development was a leading focus of developmental research. Found across journals, cognitive development was given the most priority in *RER* (for example, Bowman, 2010; Klauer & Phye, 2008).

This could be due to the growing attention to brain research and development as they relate to learning sciences. This type of research is becoming more relevant as researchers attempt to close the achievement gap. However, given this interest, the privileging of both social/emotional and cognitive domains at the expense of language development was surprising given the relationship between the two domains. Studies have shown the connection between language development and school achievement (Dickinson & Porche, 2011), as well as the challenges in school settings associated with bilingual education (Mayer & Leigh, 2010). The lack of inclusion of developmental research is inexplicable despite these connections.

The High Status of Children's Achievement and Learning in the Research

Kennedy (1995) proposes that researchers from the same field create a spiral effect whereby each study is in the same vein as those before it, creating "scholarly communities" with similar interests and ideas. In spite of the relatively large representation of research on children's social and emotional development in developmental research, this study revealed research pertaining to learning and achievement in the K-12 journals. As greater accountability measures have been put into place in US public schools, the role of achievement has entered the school lives of teachers and students (Wang, Odell, Klecka, Spalding, & Lin, 2010). With this pressure in the field, it is not surprising that education scholars have responded by directing their attention to this contemporary concern.

This difference was particularly apparent in the comparison between *RER* and *ECRQ*—the leading research journals of the two sub-fields. *RER*'s percentage of articles focused on student achievement and learning (59%) when compared to those in the early

childhood scholarly journal, *ECRQ* (21%), was the only statistically significant difference found in this study. However, when examining the overall number of studies, these two journals appeared to be similar. This study's question—and the finding—of how the child development research is utilized have illuminated a continuity of diverse priorities or belief systems regarding child development research among the members of these two research communities. Cochran-Smith and company suggest that researchers in different fields operating under different policies and practices "are often not familiar with or do not value the same kinds of research and thus selectively privilege but also selectively dismiss particular genres of research" (p. 30). Given this difference, it seems reasonable to expect that teacher educators and teachers of older students will refer to the child development literature primarily as it serves their aims to promote student achievement, academic performance, and learning. This notion is consistent with the theoretical framework guiding this study. The priorities of this particular cultural community are responding to the larger society's push for higher student achievement. As a professional cultural community, the K-12 sub-field is influenced by the social and political contexts surrounding it, such as the federal initiatives No Child Left Behind and Race to the Top. This influence is apparent in this study's findings of a heightened focus on academics and student achievement in relation to developmental research. This finding also raises the question of why the developmental research included in *ECRQ* is so markedly unaligned with the other journals' foci in this study and the larger national concerns with achievement and learning.

Contributing to the complexity of the *Achievement/Learning* research genre were the two different ways in which researchers addressed academics and learning. The

findings revealed there were no statistically different ways of referring to learning in the developmental research reviewed in this study. Regardless of sub-field or intended audience, child development research depicting children's school achievement and learning was discussed in both developmental terms and as school outcomes and skills in all four journal types. The fact that both sub-fields were equally likely to address both orientations to learning suggests more commonalities than history and previous literature would suggest.

What seems most clear is that these research journals are aligned with the current recommendations to expand the knowledge bases for both sub-fields. Based on this admittedly small sample of published research, it appears that contemporary early childhood journals include foci other than child development and also attend to content and pedagogy. Scholarly journals targets to the K-12 population are attentive to child development, also focusing on children's learning and achievement.

Lingering Questions and Implications for Future Study

What appeared to be a straightforward question--how is child development knowledge represented in the research literatures?-- resulted in an iterative process of investigation of a small sample of contemporary educational research. Findings were both consistent with the calls for knowledge bases, with implications for further research as well as changing orientations to the pre- and in-service professional development of teachers. The study also hints at the need for a more nuanced study of the changing knowledge resources of the two sub-fields. Questions have surfaced regarding whether early childhood scholars are actually scaling back their historically established reliance on child development research even as there is a concurrent growing acknowledgement

of child development within the cultural communities of elementary educators and scholars. An exploration and comparison of earlier research journals—e.g., those from the mid-1980's--could provide more accurate information on this notion of historic change in the two sub-fields' reliance on child development research. Future research might also consider the sources of child development research and theories used and cited by the various journals. For instance, it may prove valuable to investigate what developmental theories and literatures inform the research, such as those developed by Vygotsky and Piaget.

Socio-cultural theory has helped to guide this study and interpretations of its findings. It could also guide further analyses of the nature and role of educational research in these two cultural communities. As noted previously, one limitation of this study included the possible omission of other relevant content based on search criterion. Given that child development research only comprised 20% to 27% of the content published in the four journals as they were analyzed, analysis of the remaining articles will help situate the developmental research within the larger context of what is presented in educational research. Researchers might also examine other pressing questions, such as how culture and linguistic traditions, special populations such as children with special needs, and specific classroom and teaching implications are represented. Future studies could also include examining if and how subject matter and pedagogical content knowledge is addressed in the early childhood research. These questions could help to fill in the gaps of what constitutes each sub-field's knowledge base, at least as represented in the research.

This study marks an important first step in examining the complexities of the interface between developmental theory, research, and the professional knowledge base in two groups of educators. These findings show that research plays two vital roles in these cultural communities—to serve as the sustainment of both the historical and philosophical traditions of both of these educational sub-fields, and to bring new forms of understanding to the field or sub-fields. What remains to be seen, however, is whether the research found in these and other educational research publications actually reach pre-service and in-service teachers. Although the knowledge bases may be inviting change, it may not be far reaching enough to affect policies and practices. More research needs to be conducted to examine the effects of this research on teacher education curriculum and the resulting practices by practitioners. Additionally, it is important to conduct research that crosses the research genres, as well as the sub-fields, to ensure each benefits from the other (Cochran-Smith et al., 2012).

This study also raises new questions about the legitimacy of the diverse orientations between the two sub-fields. These sub-fields appear to be changing in their uses of developmental research and potentially moving to a more common vocabulary. Although there is a need for a common discourse, there may well be important reasons to sustain the different ways that development—and children's education--is being studied and discussed in these areas. While vital for the sub-fields of early childhood and elementary education to communicate and share their knowledge with one another a common discourse should not be at the expense of a nuanced understanding of children as developmental beings in relation to their changing educational contexts. It remains to

be seen whether both sub-fields can contribute to one another's professional knowledge while still maintaining the unique qualities that set them apart.

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