2020

Investigating Equity Practices and Teaching for Global Readiness in a K-12 School District

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Investigating Equity Practices and Teaching for Global Readiness in a K-12 School District

A dissertation submitted in partial fulfilment of the requirements for the degree of Doctor of

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November 2020

Acknowledgements

From a very young age I knew the importance of an education. My grandfather, Phillip Morstad, always told me "you can be whatever you want to be if you study and work hard". A lack of financial support kept Papa from attending UW-Madison and becoming an engineer; however, he ensured that each of his children and grandchildren could attend college. My mother embraced her father's teaching and further broadened my perspective of the world beyond my small town in Wisconsin. Working with diverse students as a counsellor and administrator, she taught me about inequities, considering other perspectives, and working towards making the world a better place.

A special thank you to my dissertation committee for agreeing to go on this journey and never giving up on me. Dr. Lisa Abrams pushed me to levels I didn't think I could reach alone, helping me grow as a young researcher and professional. Dr. James McMillan provided positive encouragement and sound advice along the way. Dr. Hillary Parkhouse offered insight into the Global Competent Learning Continuum and often put me in touch with other global education experts. Dr. Rachel Gable assisted me with differentiating global education and other pedagogical approaches, provided research to support the dissertation, and encouraged a deeper exploration of qualitative research. This was the perfect dissertation committee, a group with a range of experiences and expertise. I will forever be grateful to them and hope to collaborate on future projects.

Without Andrew' Barnes' constant support, and his willingness to take on extra duties caring for the house and children, this educational endeavor would not have been possible. My children kept me motivated; Ashlynn wrote encouraging letters and drew pictures of "Dr. Mom", while my son, Phillip, kept me company during reading, writing, or editing sessions.

My friends and professional communities have been instrumental to my personal, professional, and academic growth over the last several years. Through their encouragement, alternate perspectives, and expertise, I have discovered new knowledge and lenses for looking at the world, education, and personal identity.

To strangers who became acquaintances and friends, thank you for listening to me discuss educational equity, and more importantly for sharing perspectives and educational experiences from Dutch, Kurdish, Palestinian, Surinamese, Syrian, and Turkish perspectives. These discussions helped refine the conceptual framework to be inclusive to other educational structures.

Dedication

This dissertation is dedicated to my grandfather, Phillip Morstad; to my mother, Jean Morstad Schlais; to my father, Daniel Schlais; to my children, Ashlynn and Phillip; and to every other individual, young or old, seeking an education. Through education, may we find empathy, love, and respect for diverse peoples. May we negotiate our differences in a way that promotes sustainability and peace among global-local citizens.

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Abstract

INVESTIGATING EQUITY PRACTICES AND TEACHING FOR GLOBAL READINESS IN A K-12 SCHOOL DISTRICT

By Jamie Schlais Barnes

A dissertation submitted in partial fulfilment of the requirements for the Doctor of Philosophy in Education, Educational Psychology at Virginia Commonwealth University.

Virginia Commonwealth University, 2019

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This study investigated K-12 educators' (N=154) teaching for global readiness practices; perceptions of individual global competencies; and supports needed to provide all students an equitable education. A fully mixed, concurrent triangulation, equal status design, combined Vessa's (2016) Teaching for Global Readiness Scale (TfGRS) and McCain et al.'s (2014) Globally Competent Learning Continuum (GCLC) to examine educators' perceptions of teaching for global readiness. Perceptions of district equity initiatives were obtained through teacher interviews and central office administrator questionnaires. Survey results for the second semester of the 2018 school year reported teachers engaged in critical literacy and transactional practices from "never" to "once a month"; integrated global learning practices from "less than once a month" to "2-3 times per month"; and engaged in situated practices from "less than once a month" to "once a week". Teacher agreement with situated practices during the second semester ranged from "strongly disagree" to "disagree", while responses to integrated global learning experiences ranged from "less than once a month" to "2-3 times a month". Teacher perceptions of their global competencies ranged from "progressing" to "advanced" in terms of dispositions, "beginning" to "proficient" in terms of knowledge, and "nascent" to "progressing" in terms of skills. Human and monetary resources were identified as additional supports; particularly the

need for more staff, student learning materials, and quality professional development. Results of the study provided additional information on the reliability and validity of current global education tools and baseline information of one district's teaching for global readiness practices. Based on the study it is recommended policy makers investigate the development of national and/or state global education teaching and learning standards.

Chapter One: Introduction

The outsourcing of low-skilled work to other countries, the need for high-end, high-skilled work (Standish, 2014), and changing demographics require American society to think globally about education (Apple, 2011). Due to advancements in technology, people increasingly live and work in more than one country (Mok & Morris, 2012) and/or have new means to migrate from areas of poverty or political unrest. As globalization continues to affect economic growth, industry, technology, communication, and national demographics, the United States must re-evaluate its educational policies and practices to ensure that high school graduates can meet the demands of a rapidly changing global environment and be effective global citizens. The widespread demand for high-skilled labor and the nation's long-term economic health require substantial investments in education (Cooper, Hersh, & O'Leary, 2012). Despite global-local educational equity goals and initiatives, achievement gap research continues to find disparities in achievement among White, Black, and Latinx students and between students categorized by high and low socioeconomic status (Valant & Newardk, 2017). Minority groups are fast becoming the majority in the United States, and the disproportionate number of African American and Hispanic people with lower educational achievement and poorer health threatens U.S. competitiveness (Cooper et al., 2012).

This research, based in a large school district in the Mid-Atlantic region of the United States, advances an understanding of the position of global education within an equitable education.[1] This was achieved by exploring educator perceptions of: teaching for global

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[1] In this study, equitable education is defined as: "the integration of a culturally relevant, culturally responsive, multicultural and global education—one with teachers possessing the knowledge, skills and competencies to teach diverse students in a globalized society—that achieves the OECD's 10 Steps to Equity in Education".

readiness, their global competencies, and the supports needed to provide all students with an equitable education within the global education contact zone.

Problem Statement

Globalization has increased the number of immigrants, refugees, exiles, and guest workers in the United States, creating global contact zones where culturally and linguistically diverse peoples interact in "highly asymmetrical relations of domination and subordination" (Scotland, 2014, p. 36). Extending to schools, Scotland (2014) stated globalization creates global educational contact zones where school personnel and students of diverse cultural backgrounds and identities meet—and through instruction, they maintain these zones. The heterogeneity of classrooms is a challenge for teachers, many of whom are ill-equipped to work with students with multiple social identities (Hurtado & Guillermo-Wann, 2013). In a flattened global economy, the health of a nation requires that all students develop competencies to thrive and prosper in complex, international markets (Soland, Hamilton, & Stecher, 2013); however, developing these competencies requires access to teachers who are prepared to meet associated challenges.

Education has the power to improve individuals and nations, yet the American K-12 education system "fails our nation and too many of our children" as it does not "distribute opportunity equitably" (Edley & Cuellar, 2013, p. 9). The U.S. Department of Education stated (2010) that their mission was to "…promote student achievement and preparation for global competitiveness by fostering educational excellence and ensuring equal access" (p. 1); however, there is evidence that Americans are not receiving an equitable education, and that not every student has the opportunity to pursue their personal and professional goals under the guidance of skilled teachers.

Changing demographics in U.S. classrooms necessitate teacher awareness of the multi-cultural differences among students and competence in pedagogy that addresses student diversity and varying learning styles (Nor, Tengkku, Maasum, Maarof, & Alil, 2014). Working towards educational equity requires that teachers are equipped with the tools to promote student learning and there is a relevant theoretical model to work from. Teachers are a significant contributor to the success of school reform movements (Darling-Hammond, 2010), as teacher characteristics and the quality of instruction are the most critical school factors on a child's education experience (Aud et al., 2011). In fact, the failure to prepare teachers for the rigors and challenges of a multi-cultural classroom (Tyson, 2014) is one factor explaining the existing achievement/opportunity gaps and the need for education reform to address educational inequities. The current study extends the understanding of educators' experiences in teaching diverse students by investigating educator equity and global education practices.

Overview of the Study

School districts in the US have started to investigate global education policies and initiatives as part of a growing trend towards preparing students to meet 21st century learning goals. Understanding how receptive administrators and teachers are toward these efforts is an important part of policy implementation and effectiveness. This study examines these issues in one school district.

The study was designed to explore educators' teaching for global readiness, their perceptions of their own global competences, the supports needed to offer an equitable education, and the relationship between global education and equity. The study involved teachers in a large K-12 school district, allowing for an in-depth exploration of teacher practices and experiences in different contexts. A fully mixed, concurrent triangulation, equal status research design was used (Leech & Onwuegbuzie, 2009). Quantitative data was collected via a survey,

which teachers were able to access if their building administrators in Madison County Public Schools (MCPS) (pseudonym) shared an invitation to participate. Data was selected from the surveys to further explanation during individual and group teacher interviews with a sample of primary and secondary teachers representing several subjects. MCPS has several initiatives for advancing educational equity and global education practices making them an appropriate school district to investigate. Teacher interviews and discussions provided examples of equity practices; situation teachers were unprepared to handle; and identified specific supports needed from central and school administration to provide an equitable education. Conducting the study in MCPS provided perspectives from teachers in varied school contexts and offered evidence of equity practices that align with district, state, national, and international goals/initiatives. Findings from the study supported previous research on teacher preparedness to work with diverse students and expanded the understanding of the types of supports teachers need. Additional insights about the validity and usefulness of the Teaching for Global Readiness Scale (TfGRS) (Vessa, 2016) and the Global Competence Learning Continuum (GCLC) (Cain, Glazier, Parkhouse & Tichnor-Wagner, 2014) were also considered in this study.

Rationale for Study of the Problem

U.S. student and teacher demographics serve as a snapshot of the changing U.S. educational landscape, which may be one reason for the heightened interest in global education practices. Changing demographics offer an opportunity for teachers and students to learn from each other and further develop their personal and global identities (Banks, 2004). Additionally, as teacher demographics remain stable—with the majority identifying as White women—there may be a need for diversity training and guidance on handling sensitive topics. As students with diverse backgrounds meet and interact in global education contact zones, there are opportunities

to bring the wider world into the classroom by allowing students to share their culture and experiences, which may also link to content on state assessments.

The National Center for Education Statistics (NCES) forecasted public school enrollment by race/ethnicity from 2013 to 2025, projecting a 7% decrease in the enrollment of White students; a 16% decrease in American Indian/Alaska native students; an 18% increase in Hispanic students; a 21% increase in Asian/Pacific Islander students; a 23% increase in students who identify as two or more races; and little change in the number of Black students (Hussar & Bailey, 2017). Based on this information, International Education Services (IES) (IES, 2015) projects the enrollment of White students in public schools to account for only 46% of total enrollment by 2025 (Figure 1). Despite minority students becoming the majority enrolled in schools, the Digest of Education Statistics reported that 82% of teachers in public and private K-12 schools identified themselves as White during the 2011-2012 school year (NCES, 2017).
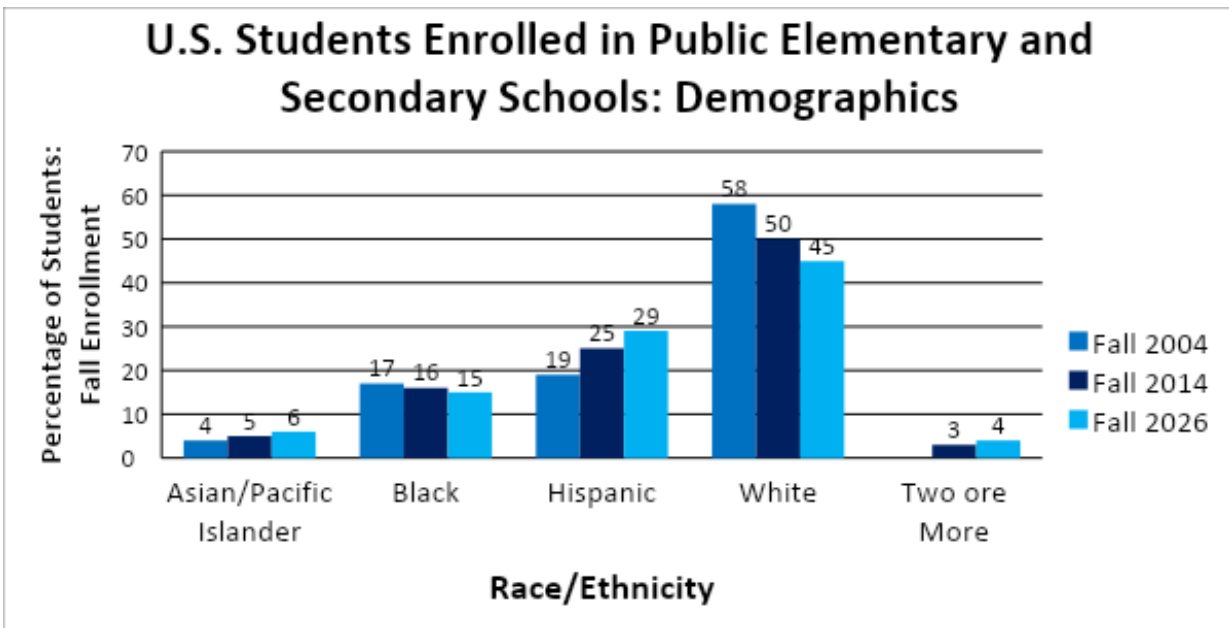
Figure 1. Percentage distribution of students enrolled in public elementary and secondary schools by race/ethnicity—fall 2004, fall 2014, and fall 2026 (NCES, 2017).

Virginia student demographics between 2003 and 2015 resembled national trends.

Madison County, Virginia, where the current study was conducted, experienced similar student

demographic shifts between 2003 and 2016 (Figure 2). Based on the Virginia Department of

Education's (VDOE, 2015) fall membership reports, the percentage of White students declined

10.97%, Hispanic students increased 8.60%, and Black students remained stable with a 4.24%

change (Figure 3). Like the IES findings, roughly 83% of the teachers employed in Madison

County Public Schools identified themselves as White (MCPS, 1/5/2017).
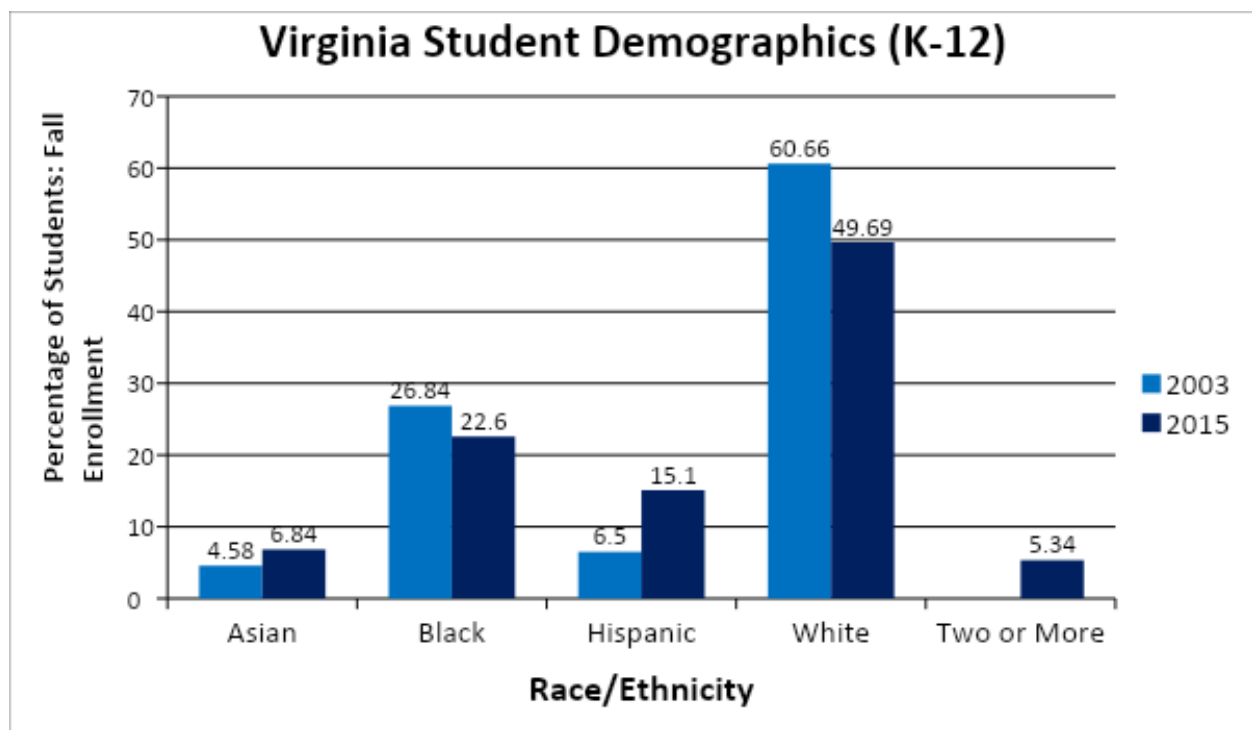
Figure 2. Change in VA K-12 student demographics from 2003 and 2015 (VDOE, 2015).
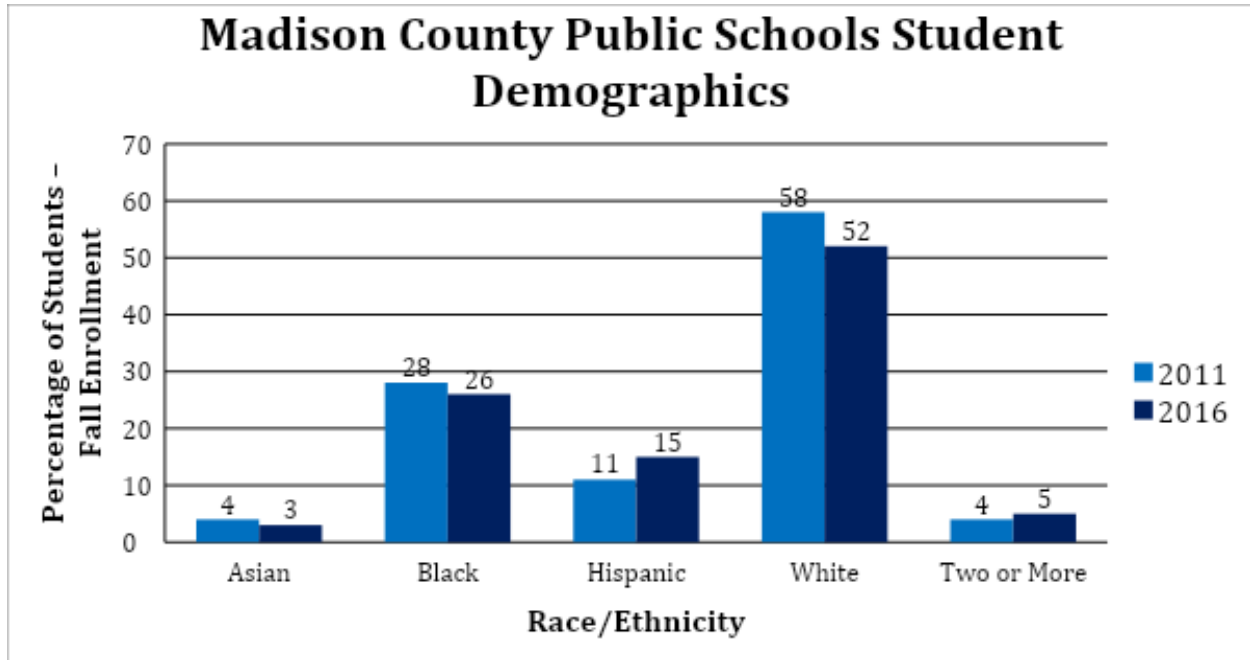
Figure 3. Madison County student demographics 2012-2016 (VDOE, 2017).

The blending of diverse peoples is said to drive innovation (*The Guardian*, 2014), and

Appadurai (1996) stated the interaction of diverse people allow for "multidirectional global

cultural flows" where "ideas, ideologies, people, goods, images, messages, technologies, and

techniques are exchanged in a world…in motion" (Scotland, 2014, p. 35). Education systems in

the U.S. have an opportunity to capitalize on global educational contact zones that may,

encourage cultural hybridization (Scotland, 2014). According to Ryoo (2009), cultural

hybridization occurs when individuals construct their own cultural spaces from the interaction

and negotiation of local cultural agent/actors with global resources and forms. Through the

integration of local and global pedagogical practices, teachers encourage multidirectional

cultural flows, leading to cultural hybridization and the renegotiation of individual identities

(Ryoo, 2009). In the context of an increasingly diverse world, Ryoo stressed a greater need for

teachers to create spaces for encouraging cultural flows as students develop knowledge, skills,

and dispositions relevant to living and working in a global society.

National and state educational policies guide district initiatives that advance global education priorities. MCPS has several programs (and other student opportunities) in place that align with global education principles. Examples included: one-to-one mobile computing devices for students in grades 5-12; project-based learning initiatives; social and emotional learning at the elementary level; and specialty programs for students interested in specific academic pathways. While MCPS does not use the term "global education", district initiatives focus on developing students' knowledge, skills, and experiences aligning with the state's *Profile of a Graduate* (VDOE, 2016).

Increased focus of global education in U.S. education policy, may stem from the need to develop global competence so graduates may act on issues of global significance (Siczek & Engel, 2019). Despite global education policy initiatives, Siczek and Engel (2019) state there has been little research on how teachers perceive global education and the extent they incorporate GE into their teaching. Investigating educator perceptions and practices of global education offers insight into policy implementation. For example, Siczek and Engel (2019) reported teachers understood GE as peace building and cross-cultural understanding, but framed U.S. GE policy around economic competition, academic achievement, and national security. The emphasis of standards and assessments in the US education system was one reason educators did not globalize their teaching practices (Siczek and Engel, 2019).

Research on global education practices and outcomes remain primarily in post-secondary contexts and focus on study abroad programs. Investigating K-12 teacher perceptions and practices of GE, as well as GE measures, provides insight into classroom practice and the extent students engage in global education experiences allowing them to hone global competencies. Researching MCPS teachers' experiences within the global educational contact zone offered a unique opportunity to learn about the school district's equity initiatives in practice, teacher-

perceived equity supports, and the extent to which global education is integrated into the curriculum or student learning experiences. Additionally, the research provided an opportunity to use two global education measures and determine their usefulness, thus contributing to what is known about the methods and instruments used to study this topic. The study results and findings can be used to inform local practice and the field more broadly. For example, the findings can inform the school district: of the educational equity practices occurring in the district; of the support teachers need to ensure an equitable education for all students; and of how the GCLC and TfGRS could be used to advance equity and global education initiatives—all of which can directly impact student outcomes.

Research Questions

The research questions are twofold in that they investigate global educational instructional practices using two global educational research instruments. The following research question are as follows:

1. What are educators' perceptions of teaching for global readiness?
2. How do educators evaluate their own global competencies?
3. What types of supports do educators need in order to deliver an equitable education for all students?
4. To what extent does the Teaching for Global Readiness Scale serve as a screener for identifying professional development needs on the Globally Competent Learning Continuum?

Chapter Two: Review of Literature

Overview of Chapter

The following review provides an overview of several intersecting issues related to educational equity: educational equity goals; State and National education policies; global education; global education contact zones; educational inequities; the importance of prepared teachers; and the need for professional development in areas of diversity and equity training. Additionally, as increased emphasis is placed on global education there is relevance to investigate measures of teaching for global readiness, as this provides a snapshot of practice as a result of policy. Student global competencies are emphasized in U.S. educational policy, yet there is little research of global education practices and outcomes within K-12 contexts or the extent students are receiving opportunities to develop said competencies.

The chapter begins with an exploration of educational equity goals, frameworks, and dimensions and their influence on national and state educational policies. In order to achieve an equitable education, it is suggested global education is the missing piece to an equitable education, which already includes culturally responsive teaching, cultural relevant pedagogy, and multicultural education. Next, global education definitions, aims, and competencies are discussed, with reference to the measure of global competence, as reported on the PISA exam. Due to limited research in global education in a K-12 context, a review of relevant research from culturally relevant education is included along with an overview of measures available in global education research. Next, due to educational inequities, there is discussion of teacher preparedness to work with diverse group of students. Finally, the conceptual framework is introduced, to include several concepts from the literature review.

EBSCO, ERIC, and PsychInfo databases were used to conduct the literature review. Terms guiding the literature review included: global education, international education,

multicultural education, culturally responsive education, culturally responsive pedagogy, culturally relevant education, and educational equity. To narrow the scope of the review, only articles addressing K-12 education were included in the search criteria. When looking for relevant measures, the key terms were paired with the words, "survey" and "empirical research" and the scope was expanded to include literature from K-12 and higher education. "Pre-service teacher training" and "professional development" were also paired with the key terms. Peer-reviewed articles were given preference; however, online sites like International Education Services (IES) and the Virginia Department of Education (VA DOE) were used to locate data on changing demographics, while the National Center for Education Statistics (NCES) site was used to collect data on student performance on the Programme for International Standards Assessment (PISA).

Educational Equity

This section explores teaching for social justice by investigating equity goals, followed by National and State educational policies, and concluding with a justification for including global education in the educational equity puzzle. Teaching for social justice, equity goals, and educational policy frameworks serve as a lens for further understanding global education and equity practices occurring in the global education contact zone.

Educator and student identity influences teaching and learning, respectively (Perez, 2010). For this reason, it is relevant to understand teacher and student demographics in the United States and the extent to which global education and equity practices further encourage student identity development in local and global contexts (Banks, 2004). Messiou and Ainscow's *Learning from Differences Model* (2014) promotes student-teacher learning engagements that include discussing diversity, developing inclusive practices, and learning from experiences; this model, combined with global education and equity practices, offers an opportunity for teacher

and student identity development, and can help make students ready to live and work in global society.

Teaching for Social Justice

Dover (2013) identified three dimensions for teaching for social justice: curriculum, pedagogy, and social actions (Table 1). These dimensions serve as a foundation for evaluating global educational practices that embrace social justice and acknowledge the classroom as a site for social change. Acknowledging the impact of globalization on education systems, global educational practices and ideals are necessary and achievable when providing students with a holistic and equitable education.

Table 1

Dimensions of Teaching for Social Justice and Related Education Reform Traditions (Dover, 2013)

Curriculum	Pedagogy	Social Action
Reflects students' personal & cultural identities	Supportive classroom climate embraces multiple perspectives	Teachers consider themselves social activists
Includes explicit instruction about oppression, prejudice & inequity	Emphasizes critical thinking and inquiry-based instruction.	Teachers raise students' awareness of injustice and inequity
Connects curricular standards and social justice topics	Promotes students' academic, civic & personal growth	Teachers promote students' social actions.

Educational Equity Goals

In working towards educational equity, there is a need to reframe public debates on teaching diverse and historically underserved communities. For the purpose of this study, "equity" refers to fairness and inclusion—where personal or social circumstance, like gender,

ethnic origin, or family background, are not obstacles to achieving educational potential and all

individuals reach a basic minimum level of skills. Additionally, global education is considered to

support educational equity.

Ainscow (2016) argued that the extent to which a student's educational experience and

outcomes are equitable depends on a range of interacting processes related to within-school and

between-school factors. The author identified policies and practices as examples of within-school

factors, while between-school factors include demographics, economics, culture, and histories.

To foster educational equity at the school level, Ainscow stated that teachers need: (a)

permission to innovate in their classroom, (b) regular opportunities to observe other educators

teaching, (c) to listen to and take account of their students' views, and (d) to spend time

discussing with colleagues approaches to teaching diverse students (p. NP).

Recognizing the effects increased migration has on social cohesion and that "equity in

education enhances social cohesion and trust," the OECD recommended 10 Steps to Equity in

Education within three areas: design, practice, and resources (Table 2). These steps are intended

to "reduce school failure and dropout rates, make society fairer, and avoid large social costs of

marginalized adults with few basic skills" (OECD, 2008, p. 6).

Table 2

The OECD's Ten Steps to Equity in Education

Component	Practice
Design	- Limit early tracking and streaming and postpone academic selection.
	- Manage school choice so as to contain the risks to equity.
	- In upper secondary education, provide attractive alternatives, remove dead ends and prevent dropout.
	- Offer second chances to gain from education.
Practices	- Identify and provide systemic help to those who fall behind at school and reduce year repetition.
	- Strengthen the links between school and home to help disadvantaged parents help their children to learn.

	-	Respond to diversity and provide for the successful inclusion of migrants and minorities within mainstream education.
Resourcing	-	Provide strong education for all, giving priority to early childhood provision and basic schooling.
	-	Direct resources to the students with the greatest needs.
	-	Set concrete targets for more equity, particularly related to low school attainment and dropouts.

International exams like the Trends in International Mathematics and Science Study (TIMMS) and the Programme for International Student Assessment (PISA) measure a nation's educational progress (World Bank, 2011). The Organization for Economic Co-operation and Development (OECD), comprised of 35-member countries representing 87% of the world's economy, administers the PISA every three years. Using PISA test scores from 15-year-old students in Science, Mathematics, Reading, Collaborative Problem Solving, and Financial Literacy, the OECD compares the national education systems of its members and other participating countries (Schleicher, 2011; OECD, 2017a). In 2015, half a million students were selected to participate in PISA with the sample representing approximately 28 million students from 72 countries. Student test scores, when aggregated to the country level and then rank ordered, resulted in Singapore placing first on all assessments, while the U.S. placed lower than: 18 other education systems in Science Literacy; 14 other education systems in Reading Literacy; and 36 education systems in Mathematics. Interestingly, nations with PISA scores higher than the United States have a constitutional, or stature, guarantee to the right of an education (Lurie, 2013).

National and State Education Policies

Educational inequities place some students at a greater advantage than others. Although all children in the U.S. are entitled to an education, regardless of legal status (Rubinstein-Avila, 2017), the U.S. Constitution does not give the federal government authority over education,

leaving education to the power of local and state policymakers. Federal legislation, like the 14th Amendment, requires all children on U.S. soil be given equal educational opportunities regardless of race, gender, ethnicity, or other variables (U.S. Const. amend XIV; Rubinstein-Avila, 2017). Despite the legal requirement for equal access to education, inequities within the U.S education system "impose an economic impact on the country equivalent to a 'permanent national recession'" (U.S. Department of Education, 2013 p. 12). In fact, White students of affluent backgrounds continue to be better educated, while students in high poverty neighborhoods receive an education similar to developing nations (U.S. Department of Education, 2013).

High school graduates must acquire workforce skills (College Board, 2006) during their K-12 education to navigate in a global economy; however, high-school graduates' lack of relevant workforce skills is a growing concern for businesses (Bialik & Fadel, 2015). To address the limited international and cross-cultural competencies of the U.S. workforces, the U.S. Equity and Excellence Commission proposed a five-part framework covering: equitable school finance; effective teachers, principals and curricula; early childhood education; mitigating effects of poverty; and accountability and governance reforms (Edley & Cuellar, 2013). This framework is evident in the Every Student Succeeds Act (ESSA) (2015), the nation's written commitment to ensuring equal opportunities and advancing equity for America's disadvantaged and high-need students (ESSA, 2015). Under the ESSA (2015), all students are required to be taught to high academic standards. ESSA works to ensure student and school success by protecting disadvantaged and high-need students, requiring all students be taught to high academic standards, and using state-wide assessments to measure student progress toward set standards (U.S. Department of Education, 2017).

In response to the ESSA, the state legislature in Virginia, through House Bill 895 and Senate Bill 336, directed the state Board of Education to develop a "Profile of a Virginia Graduate" (V.A. Legislative Information System, 2016) that outlines the knowledge, skills, and experiences students need to be successful and "life-ready" upon graduation (VDOE, 2016). Content knowledge, workplace skills, community engagement and civic responsibility, and career exploration are the VDOE's four frameworks for providing students with a holistic learning experience. In developing the profile, the Board of Education was to "give due consideration" to critical thinking, collaboration, creative thinking, communication and citizenship (VDOE, 2016). Finally, the board was charged with establishing multiple pathways toward college and career readiness through the creation of opportunities for internships, externships, and credentialing. Virginia's Profile of a Graduate offers guidance to local school districts on how to prepare students for a global economy; however, many school administrators and teachers are ill-prepared to work with students of diverse backgrounds, cultures, and experiences (Daniel & Friedman, 2005). As Virginia's demographics continue to change alongside national trends, there is a critical need to reevaluate the extent to which teachers are providing an equitable education to all their students.

Recognizing the importance of student future employability through the acquisition of workforce readiness skills, several states have created programs or assessments to provide a global education curriculum to students in an effort to help graduate "global citizens". In conjunction with the Partnership for 21st Century Learning (P21), the states of Wisconsin, West Virginia, and North Carolina support state actions on global education (P21, 2014). For example, Wisconsin offers high school graduates the opportunity to earn a Global Competence Achievement Certificate for their work in global education. The State Board of Education in North Carolina has "Globally Ready" designations for schools and districts, and teachers can be

awarded global educator digital badges, which is often earned through global education programs like Participate©.

Culturally responsive teaching, culturally relevant pedagogy, and multicultural education are examples of responses to early American educational equity policies. With a rapidly changing global landscape, including global education may enhance educational equity (Figure 4).
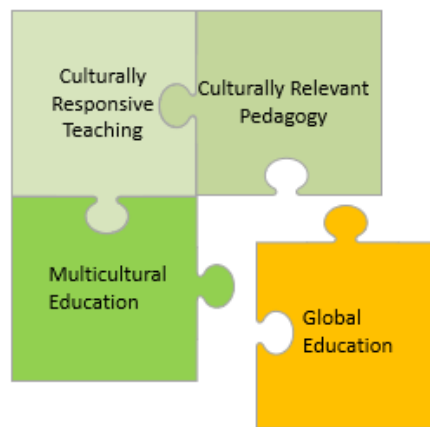
Figure 4. The equitable education puzzle

Global Education

Definition

Currently, "global education" (GE) does not have an agreed-upon definition. Global education has been used interchangeably with concepts like international education, global studies, multiculturalism, intercultural programs, and non-Western studies (Bray, 2007; Standish 2014). For example, in the United States, GE means focusing on countries and regions where the U.S. has economic or political interests, while Canada and Europe associate GE with "critical thinking (Hicks, 2007), participatory and holistic teaching and learning, values relating to human rights and social justice, and issues relating to global interdependence" (Marshall, 2007, p. 358).

The Global Education Network defines global education as an active learning process based on the universal values of tolerance, solidarity, equality, justice, inclusion, co-operation and non-violence. The Global Education Project outlines four aspects of global education.

- *Sustainable futures*—promotes understanding of sustainable futures and the importance of developing critical- and creative-thinking skills and ethical understanding.

- *Identity and cultural diversity*—promotes understanding of identity and cultural diversity and its importance in developing intercultural understanding and personal and social capability.

- *Interdependence and globalization*—promotes understanding of peoples' interdependence and the importance of working for a just future in which all people have access to their basic needs sustainably.

- *Social justice and human rights*—promotes understanding of social justice and human rights and the contribution they make to peace-building and conflict resolution.

Tye (2014) investigated the definition of global education in five countries (the U.S., Australia, Japan, New Zealand, and the United Kingdom) and found that all the definitions varied in length and substance; some focused on knowledge while others focused on looking at issues from other points of view. When considering the range of definitions, Tye (2014) identified four themes related to global education:

- knowledge of global issues and problems;

- the world as a set of systems;

- perspective taking;

- preparing students to become active in working for social justice and a better world.

Although Australia does not provide a definition of global education, Tye's (2014) research found that the country offers a portfolio of global education material and provides teaching

strategies for educators wishing to integrate global education into instruction. Skills teachers are required to demonstrate include:

- distinguishing between fact and opinion;

- analyzing stereotypes;

- using statistics;

- simulations and online games;

- web tools and apps;

- thinking skills;

- intercultural understanding.

Finally, the Maastricht Global Education Declaration (2002) defined global education as an "education that opens people's eyes and minds to the realities of the globalized world and awakens them to bring about a world of greater justice, equity, and human rights for all" (Cabezudo, Christidis, da Silva, Demetriadou-Saltet, Halbartschlager, & Mihai, 2002). Cabezudo et al. (2002) referred to GE as a perspective acknowledging globalization's impact on the increased interaction of diverse peoples and a philosophy based on human rights and social justice (Landorf & Nevin, 2007). Additionally, GE incorporates the learning of international issues and of interconnected ecological, cultural, economic, political, and technological systems (Tye, 2009).

Although disagreements exist among scholars about the definition of global education, the characteristics of global education that have been agreed upon by most scholars—and that have been adopted for the purpose of this study—are that global education includes all the above-mentioned definitions and additionally involves:

- learning about problems and issues that cut across boundaries, and about the interconnectedness of ecological, cultural, economic, political and technological systems;

- perspective taking—seeing things through the eyes and minds of others;

- taking individual and collective action for social justice and the creation of a better world

    (Tye, 2014).

International vs Global Education

Global education has been used interchangeably with concepts like international education (IE), global studies, multiculturalism, intercultural programs, and non-Western studies (Bray, 2007). For this reason, literature related to international education were also considered as a part of this research, as it offers another perspective.

Duckworth (2007) stated that the focus of IE is on conflict prevention—thus, key outcomes of international education include international-mindedness and developing the values and skills of a global citizen. An international education considers historic contexts that all humans share, regardless of nation, race, or creed. Furthermore, Hill (2007) stated that IE offers opportunities to understand the interdependent world, requiring cooperation among nations. Founded on respect for all humans, IE challenges us to find commonalities and positive values in the things that unite and/or divide us (Hill, 2007).

Davies and Pike (2009) differentiate between global and international education by categorizing them into primary/secondary schooling and higher education respectively. Historically, Hayden, Levy, & Thompson (2007) said IE took the form of exchange programs and international travel, although later IE was associated with programs like those offered by the International Baccalaureate Organization (IBO), at least in the United States. The IBO works to develop international mindedness through rigorous coursework, service learning, and acquiring the attributes of a learner. The IB programs offer a holistic education, encouraging citizenship education through service learning as well as encouraging intercultural understanding. Hayden et al. (2007) reported that IB students graduate proficient in a second language, with research

experience and skills, and with the ability to engage in critical reflection and dialogue. Lifelong

learning and making choices for the good of mankind are the final two elements of an IE

(Hayden et al., 2007).

Unlike global education, Davies and Pike (2009) stated international education is thriving

under neoliberal influences. Pike reported that international students are paying premium tuition

fees to colleges and universities that are in need of money. While international education was

born from the benefits of cultural exchange, Pike said it is now caught up in commercialization.

Both global and international education are facing pressure to align with neoliberal values, and

Pike suggested schools use Nussbaum's (2009) model of "Education for Profit' and "Education

for Freedom" (Figure 5) to plot their activity and determine beneficiaries and associated costs.

Pike provides examples of school-related activities within each quadrant. Starting with Quadrant

1 and ending with Quadrant 4, examples include: field/trips/study tours, fundraising for worthy

global causes, connecting classrooms via technology, and exploring creative and equitable

solutions to global problems (Pike, 2009).
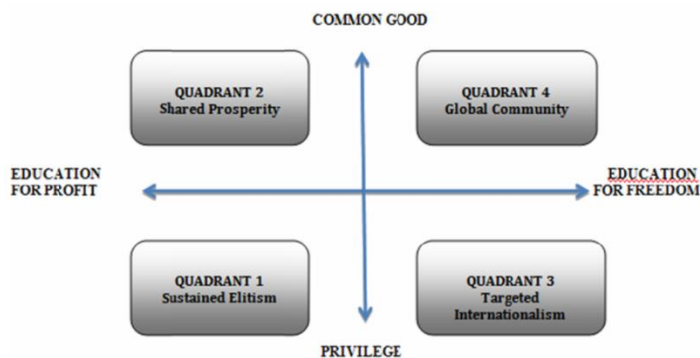
Figure 5. Education for Profit and Education for Freedom (Nussbaum, 2009).

Global Education Goals and Aims

Pike and Selby (1988) identified five aims of global education, then supplemented the aims

with four dimensions (Marshall, 2007). Marshall (2007) identified the aims as: systems

consciousness; perspective consciousness; health of planet awareness; involvement

consciousness and preparedness; and process mindedness. Furthermore, the author reported that

global education is associated with affective and participatory components, while global social

justice and human rights permeate any global issue. The global education framework developed

by Pike and Selby included spatial, temporal issues, and human potential; Hicks (2007) added an

issue and process dimension for developing the personal and socials skills needed for global

cooperation (Marshall, 2007).

    Acknowledging the diverse definitions and concepts of GE, Lehner and Wurzberger (2013)

support a Theoretical Pattern of Global Education, based on Lang-Wojtaskik's (2012) work and

complemented by approaches from Selby and Rathenow (2006). Like earlier frameworks, the GE

model contains four dimensions—objective/issues, temporal, spatial, and social—which reflect

an action-reflection-action-reflection sequence (Figure 6) (Lehner & Wurzberger, 2013).
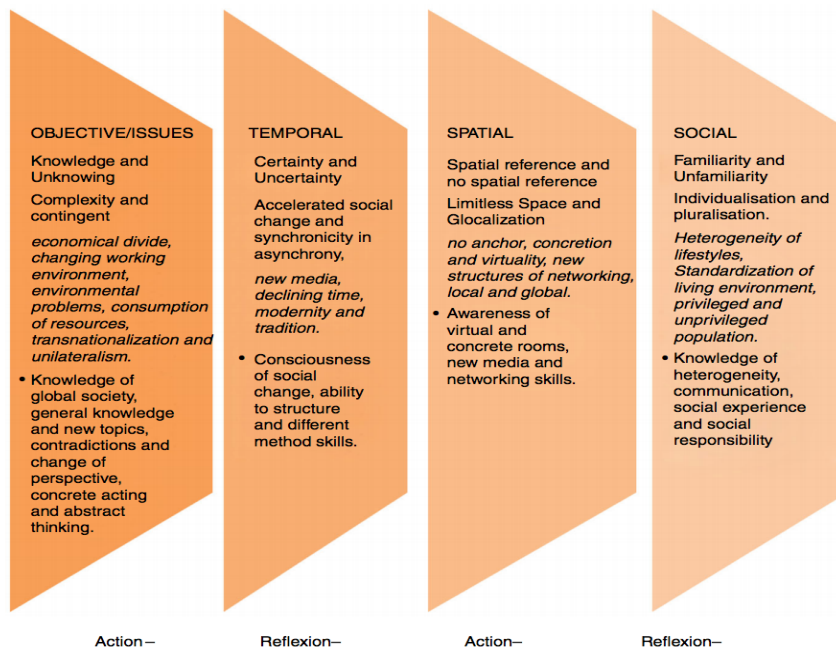
Figure 6. Theoretical pattern of global education (Lehner & Wurzenberger, 2013)

Global Competence

Like global education, there is no agreed-upon definition of global competence (GC). Asia Society and the Council of Chief State School Officers (ND) recognized that many characteristics of GC are similar to international education in terms of:

- knowledge of other world regions, cultures, economies, and global issues;
- the skills needed to communicate in a language other than English, to work in cross-cultural teams, and to assess information from different sources around the world;
- values of respect for other cultures and of civic engagement (State Schools, ND).

Global competence is a complex learning goal (OECD & CCSSO, ND), and Deardorff (2014) stressed the need for it to be broken down into measurable learning objectives. Several definitions of GC exist; depending on the region of the world, the definition may focus heavily on individuals or on relationships between people (OECD, 2016). The OECD (2016) defined global competence as: the ability to critically analyze global and intercultural issues from multiple perspectives; understanding how differences affect perceptions, judgment and ideas of self and others; and engaging in effective interactions with people of diverse backgrounds on the shared belief of human dignity and sustainability.

The National Education Association (NEA, 2010) described GC using four elements: international awareness, an appreciation of cultural diversity, proficiency in foreign languages, and competitive skills. Asia Society operationalized GC as four pillars: knowledge and inquiry about the world, recognizing and weighing perspectives, communicating ideas, and taking action (Conk, 2012). Mansilla and Jackson (2011) refer to GC as having the disposition to act on issues of global significance (p. xi), while Zhao (2010) refers to GC as the combination of knowledge, skills, and dispositions needed to engage as effective citizens.

Developing Global Competence. Developing global competence requires a culture of learning, where student engagement and interactions allow for the expression of differing perspectives and for a constructive discussion of complex topics with their peers (OECD, 2018). Instructional strategies identified as developing global competence included structured debates, organized discussions, current events discussions, playing games, project-based learning, and service learning. Anthony Jackson, President for the Center for Global Education, stated:

> "…fostering students' global competence is an accessible, practical possibility that is not beyond the reach of the average teacher…it is happening right now, around the world. However, in order to reach every student – and especially the most marginalized students, in every country – inspiring the creativity and developing the capacity of education needs to be much more systematic." (p. 6)

The skills needed for teaching global competencies are often missing in teacher preparation and professional development programs yet are necessary to "foster an ethos of global citizenship in students" (Tichnor-Wagner et al, 2016, p. 7). Characterizing GE teachers, Cogen et al. described them as globally minded and characterized them as being empathic, sensitive and self-assured. GE teachers take a worldwide view, tolerate and work in a changing world, value scientific inquiry, are knowledgeable of other cultures, and are active participants in their global society (Cogan et al., 2000). Valuing cooperative learning opportunities, accepting cultural differences, resolving conflict in a non-violent manner, thinking critically and problem-solving are additional characteristics Cogen et al. (2000) identified in globally minded teachers. To nurture global mindedness, Cogent et al. suggest:

- teaching subject matter that encourages critical thinking;
- emphasizing students' ability to assess information critically in an increasingly media-based society;

- increasing attention to global issues and international studies in the curriculum;

- establishing liaison and joint projects among schools and social institutions;

- providing opportunities for community action and involvement;

- promoting schools as active centers of community life;

- increasing opportunities for cooperative learning;

- ensuring that social institutions respect the basic rights of students.

When working in global educational contact zones, it is relevant to investigate educator perceptions of their global competence, as well as the extent to which they are teaching for global readiness.

Measuring Global Competence. The Center for Global Education at Asia Society and the OECD collaborated with stakeholders in the field of global education in defining global competence. Using Asia Society's Four Domains of Global Competence (2005) as a framework, the PISA framework integrated the knowledge, skills, values and attitudes needed to: examine local, global and intercultural issues; understand and appreciate the perspectives and world views of others; engage in open, appropriate and effective interactions across cultures; and take action to improve collective well-being and sustainable development (OECD/Asia Society, 2018).

The 78 countries participating in the PISA 2018 assessment of global competence collaborated in the development of the tool, which aims to both measure students' preparation to live in a multicultural society and identify what works in global education. Data from the study will report on how well nations are preparing young people "in the development of peaceful, diverse communities". The development of the PISA is significant because it "establishes for the world's educators that global competence is critical for creating equitable, prosperous, and conflict-free futures for students and their countries" (OECD, p. 17). The survey has a cognitive assessment and measures student global knowledge. The cognitive assessment investigates how

well students use general knowledge and their experience of global issues and cultural

differences to understand specific cases presented in various scenarios. The student questionnaire

elicits information about students': knowledge, skills and attitudes on the global issues of climate

change, poverty, trade and migration; sense of their own linguistic and communication skills;

and attitudes regarding important characteristics like their interest in other cultures, adaptability,

and respect for people from other cultures. Additionally, students are asked about the

opportunities they have in school to learn about other cultures and global issues (OECD p. 17-

18).

The capacity for preparing students' global competence varies by educators, schools, and

national interests. Sean Coughlan of the BBC reported that Canada, Scotland, and Australia

opted to participate in the 2018 PISA assessment on global competence; however, several

Western countries decided not to participate, including: England, the United States, Germany,

France, Denmark, the Netherlands, Finland, and Ireland. Reasons for not participating in the

global competence piece include nations not wanting to be compared, the potential burden it

places on schools/teachers/students, (Coughlan, 2018) and other socio-political reasons.

Global Education Reform Movements

Pike (2015) stated global education at primary and secondary levels—and international

education in higher institutions—are reform movements attempting to broaden students'

understandings of the world in light of globalization. According to Pike, the focus of global

education remains on the development of skills and values of cooperation and conflict resolution

and imparting knowledge of global issues, systems and human interconnectedness. Tye (2009)

contends that through perspective-taking, students recognize the multiple views of people in the

global society while acknowledging the common needs and wants of others. Teaching for a

global perspective requires perspective consciousness, awareness of the planet, cross-cultural

awareness, knowledge of global dynamics, and awareness of human choices (Tye, 2009). Global education stresses the need for citizenship in terms of active participation via philosophical perspectives for democratic thinking, and the idea of global citizenship extends beyond traditional citizenship education by including respect for other people (Landorf & Nevin, 2007).

Global Education Research

The International Baccalaureate Organization and Participate© provide global education curricula, professional development, and (in the case of the IB) assessments. While some research has been published about student outcomes related to participating in global education programs, there continues to be limited research on global education and professional development. For this reason, research within the fields of international education, multicultural education, culturally responsive teaching and culturally responsive pedagogy were considered when investigating student outcomes and teacher professional development. Looking at research in fields similar to global education offers an opportunity to compare the results of this study to previous studies. This section outlines research in culturally relevant education as well as measures of teaching for global readiness and teacher global competence.

Culturally Relevant Education. Sleeter (2012) called for evidence-based research on culturally relevant education CRE, and Aronson and Laughter (2016) responded with a synthesis of research connecting CRE to student outcomes within one of four tenets: academic skills and concepts, critical reflection, cultural competence, and critique discourse of power. In practice, CRE incorporates critical reflection, cultural competence, valuing one's own and others' perspectives, engaging in critical dialogue, seeing content through multiple paradigms, and critiquing knowledge (Aronson and Laughter, 2016).

Aronson and Laughter (2016) identified a "sufficient body of research" in support of the effectiveness of CRE but acknowledged that most studies were small-scale. Of the 37 studies

identified by Aronson and Laughter, one was quasi-experimental, two were mixed-method, three
were quantitative, and the other thirty-one used a type of qualitative design. The authors
organized their findings by content area, breaking them down into thirteen English Language
Arts studies, five English as a Second Language and Science studies, eight Mathematics studies,
and six studies from History/Social Studies. Reviewing CRE practices across all disciplines, 97%
of the studies incorporated academic skills and concepts while 94% integrated cultural
competency. Critical reflection was included in 78% of the studies, while critiquing the discourse
of power was identified in 46% of the studies (Table 3). Although student outcomes varied by
discipline, the outcomes included: increased student engagement, motivation, and achievement;
the ability to recognize multiple perspectives; empowerment; connecting home and school
cultures; and critical discourse and agency (Aronson & Laughter, 2016).

Table 3

Number of Studies and Frequency of CRE Markers Identified

	Number of studies	Tenants of culturally relevant education			
		Academic skills and concepts	Critical reflection	Cultural competence	Critique discourse of power
English Language Arts	13	13	10	13	6
English as a Second Language	5	4	2	5	0
Mathematics	8	8	6	7	2
Science	5	5	5	4	4
Social Studies	6	6	6	6	5
Total	**37**	**36**	**29**	**35**	**17**

Aronson and Laughter (2016) reported that a significant part of CRE in English Language Arts involves connecting content to students' lives and empowering students. For example, Christianakis (2011) and Prier's (2012) research found that hip-hop and song lyrics have been used pedagogically to connect content while offering students an outlet for speaking about issues in their local-global community (Aronson & Laughter, 2015). Based on the positive outcomes of increased student creativity, academic literacy, and critical consciousness when engaged in hip-hop pedagogy, Aronson and Laughter suggested this as one method to close cultural gaps.

Aronson and Laughter (2016) reported that the research surrounding CRE's effectiveness with ELL and immigrants tended to be anecdotal or descriptive; however, despite a lack of empirical evidence, the authors reported the benefits CRE had on ELL and immigrant students. The authors identified language barriers and a misalignment of cultural expectations as two reasons for poor academic performance among ELL and immigrant students; studies where teachers incorporated the languages and cultures of their students into their pedagogy resulted in greater student success. Based on Lee's (2010) research, two additional factors were identified as increasing ELL and immigrant student success—teachers who held their students to high standards and teachers who believed in their students' academic abilities (Aronson & Laughter, 2016).

Criticisms of CRE's lack of applicability to mathematics have been challenged in the past decade, but Aronson and Laugher (2016) identified several studies making clear connections between CRE and Math instruction. For example, one study outlined how African American students were taught to gain agency by using math to help the poor or powerless. A second study demonstrated how connecting math with personal experiences helped pique urban students' interest. Another study with urban Latinx reported that after two years of learning math through

controversial issues affecting the Latinx community, students moved beyond cultural competence to sociopolitical consciousness (Aronson & Laughter, 2016).

Aronson and Laughter (2016) summarized five studies connecting CRE to science practices. In one of these studies, Atwater, Russell, and Butler (2014) discussed increased diversity in the U.S., finding that it is beneficial for Science educators because science and culture are intertwined—although teachers struggle to see the connection. Although student achievement in Science has increased, The National Assessment of Educational Progress (NAEP) reported that the achievement of 12th grade Black and Latinx students is comparable to the achievement of White and Asian students in 8th grade (Aronson & Laughter, 2016). Another finding reported by Aronson and Laughter was Snively and Corsiglia's (2001) research suggesting the achievement gap may be due to a misalignment between Western science's way of knowing and the beliefs, values and ideas of non-Western cultures. Developing teacher-student and student-student relationships and allowing individuals to construct their own knowledge were two CRE practices that Johnson (2011) and Milner (2011) felt contributed to their students' motivation to learn science (Aronson & Laughter, 2016).

Social Studies naturally lends itself to CRE practices, but Aronson and Laughter (2016) reported that teachers felt uncomfortable discussing sensitive topics such as racism. Reporting on the work of Epstein et al. (2011), Aronson and Laughter outlined how one history teacher addressed institutional racism and oppression while recognizing the contributions to society made by people of color; to accomplish this goal, the teacher organized his curriculum around his students' national identities, the role of racism, and political activism. Choi's (2013) case study of an 8th grade teacher in an alternate public school found student interest and academic achievement increased after the teacher took a global, multicultural citizenship approach to teaching ELL students (Aronson & Laughter, 2016).

In summary, Aronson and Laughter's (2016) review of literature found that CRE had positive impacts on five affective domains. Overall, students showed an increase in their: motivation, interest in content, ability to engage in content area discourses, perceptions of themselves as capable, and confidence when taking a standardized test.

Measures Used in Global Education Research

Instruments such as surveys or protocols related to global education are sparse. For example, Morais and Ogden (2011) cited the absence of a measure aligning with the operational definition of global citizenship found in the literature. Since 2011, most GE studies have been measurement-validation studies, have targeted students in higher education, and/or have used survey inventories to investigate global, cosmopolitan, or multicultural identity. There are several documented limitations of existing measures. For example, the Intercultural Development measure fails to include other areas of global citizenship (Morais and Ogden, 2011). The Global Perspectives Inventory's (GPI) holistic view of student development in cognitive, intrapersonal, and interpersonal learning domains (Braskamp, Braskamp, Engberg, 2014) and the Global Competence Aptitude Assessment failed to "address an individual's social responsibility and global civic engagement" (Morais & Ogden, 2011, p. 450).

Global Education Values and Attitudes Questionnaire. Available tools for measuring global citizenship are slowly emerging, but they often target one aspect of global education and are not used in replication studies. For example, in response to Australia's national global education policy, DeNobile, Kleeman, and Zarkos (2011) developed the Global Education Values and Attitudes Questionnaire (GEVAQ) to investigate the extent to which a global education program affected student attitudes and values. Using a pre-/post-test design, 521 7th- and 8th-grade students from 9 independent Australian schools participated in the research study. Exploratory factor analysis resulted in the identification of 10 constructs: social justice, personal

identity, respect for the rights of others, empathy for others, antipathy towards global issues, a sense of community-shared emotional connection, a sense of community-membership, environmental sustainability, cooperation and care, and tolerance of difference. The reliability coefficient for these factors ranged from .53 to .86. Statistically significant differences in pre-/post-test scores occurred in four of the ten values and attitudes. Effect sizes yielded a Cohen's d of .94 on changes in the personal identity score. The other effect sizes were below .20, suggesting that the global education programs had a weak effect on the values and attitudes of social justice, a sense of community-membership, and environmental sustainability (Tavakol & Dennick, 2011). Based on the available report, there appears to be an absence of rigorous validity testing for this measure, causing it to be dismissed as a viable tool.

Global Citizenship Scale. Morais and Ogden's (2011) Global Citizenship Scale (GCS) underwent an eight-step process, including two expert face validity trials and extensive exploratory and confirmatory factor analysis testing. The creation of the GCS began with generating a pool of items from 12 different measures that contained questions related to social responsibility, global competence, and global civic engagement (Morais & Ogden, 2011). After compiling questions and developing a five-point Likert scale to measure responses, the measure underwent an expert review (Su, 2007) of the pooled items. Based on the feedback, the measure was modified before being administered to a sample of students enrolled at five Penn State campuses. The total number of surveys collected was 126 from students enrolled in "embedded programs" or education abroad programs, and 222 from students enrolled in a matched course.

Structure reliability for each of the survey's dimensions was examined through component exploratory factor analysis, and a Promax rotation was used to clarify factor structures from the EFA. Using Cronbach's reliability analysis, items in each factor were investigated and sometimes omitted if the item reduced the overall reliability of the factors; in

the end, social responsibility had a Cronbach's alpha coefficient of .70, global competence was α=.60, and global civic engagement was α=.72. To investigate internal consistency, a Spearman-Brown split-half reliability test was employed—this yielded a coefficient of .91, suggesting the overall reliability of item inter-correlations (Morais & Ogden, 2011).

The authors established construct validity by conducting qualitative group interviews and using confirmatory factor analysis on data collected in a second survey administration. Group interviews served to further define and validate constructs of the global citizenship scale. Administering the scale a second time to the same students in those 22 courses 2.5 months later provided data for CFA. A total of 288 students (101 students in embedded courses, 187 in matched courses) completed the survey—CFA revealed that the 30-item, 10-factor Global Citizenship Scale had a desirable fit with the data, and parameter estimates were statistically significant with moderate to large effect sizes (Morais & Ogden, 2011). The statistical evidence provided by Morais and Ogden (2011) suggests that the GC is reliable and valid at present (Thorndike & Thorndike-Christ, 2010). Although valid, the measure was not selected for this study because this study's focus is on teacher practices rather than their global citizenship identity.

The Teaching for Global Readiness Scale (TfGRS). Vessa (2016) combined the concepts of multi-literacies and global citizenship to create the term "global readiness". Students ready for college, career and civic life must develop multiple new literacies needed "for digital texts and multimodal systems of communication", including multilingualism (Vessa, 2016, p.21). Vessa defined global citizenship using Morais and Ogden's (2011) validated framework, which is comprised of global competence, social responsibility, and global civic engagement.

For students to become globally ready, critical global citizenship education is needed, whereby teachers are transformative citizens teaching critical thinking and encouraging students

to seek multiple perspectives (Vessa, 2016). The validated TfGRS contains four factors—situated practice, integrated global learning, critical literacy, and transactional experiences.

- **Situated practice** includes taking inventory of students' cultures, cultivating a classroom environment that values diversity and promotes equality, attempting to break down stereotypes, and allowing students to take risks and have a voice.

- **Integrated global learning** includes the integration of global learning within the curriculum, building a library of resources related to global education, using inquiry-based learning, and assessing students' global learning.

- **Critical literacy** focused on asking students to engage in discussions about international events, analyzing the reliability of a source, considering multiple perspectives, analyzing the agendas behind media messages, and constructing claims based on primary sources.

- **Transactional experiences** include bringing in speakers from different backgrounds to provide alternate perspectives, and student use of synchronous and asynchronous technology for international collaboration and virtual interviews.

Participate[©] uses the TfGRS to measure educators' teaching for global readiness ahead of engaging in global education PD. Participate's[©] lead researcher, Julie Keen, provided further insight into some changes to survey wording; as part of those changes, however, they did not conduct any confirmatory factor analyses to further validate the TfGRS (personal correspondence, 2018).

TfGRS and Links to Pedagogy

There is little understanding of what "global education" entails in K-12 education. While the skills and abilities of globally competent students have been outlined, "less progress has been made in identifying what globally competent teachers should know and be able to do and what teacher education programs must do to prepare them" (West, 2012, p. 8). For this reason, there is

the need to investigate teacher global education and equity practices within the global education contact zone.

Literature on asset-based pedagogy (ABP), in which students' cultures are viewed as a strength and teacher-student relationships are forged, finds that teachers who are critically aware of the sociohistorical influences of marginalized students tend to build on students' prior knowledge and validate student experiences (Lopez, 2017). Lopez (2017) reported findings from case studies and ethnographies supporting the notion that teachers practicing ABP felt better equipped to help students develop identities and promote achievement outcomes. While qualitative studies on ABP are numerous, Lopez stated that there is a need for quantitative studies to triangulate and augment current findings. The situated practice and critical literacy sub-scales of the TfGRS (Vessa, 2016) demonstrate elements of ABP in that the former consists of building relationships with students while the latter emphasizes reflexive practice promoting introspection, encouraging question-forming, and reducing stereotypes.

Expectancy research investigating the relationship between teacher beliefs and student outcomes found teachers' pacing, pedagogy, and behaviors were associated with student achievement (Lopez, 2017). According to Lopez (2017), developing teachers' ABP behaviors, such as critical awareness, can promote student ethnic and academic identities while improving teacher pedagogical practices. Biography-driven instruction (BDI) is similar to ABP, as it takes into account student background knowledge, provides a space for students to demonstrate learning, and fosters a learning environment of growth (Perez et al., 2012) and risk-taking. The principles of BDI are embedded within the integrated global learning and transactional experiences factors of Vessa's (2016) teaching for global readiness construct.

TfGRS and Global Competencies

When considering the use of a measure to determine teacher perceptions of global readiness, it would be beneficial to ensure that the survey items reflect the knowledge, skills, and dispositions cited in the literature as relevant for students in the 21st century. Evaluating the survey holistically, it appears to align with the global education frameworks; however, individual survey items may need to be added or altered for closer alignment with the range of knowledge, skills and dispositions needed of teachers and students.

Global Competence Learning Continuum. The Global Competence Learning Continuum **(GCLC)** serves as a tool for teachers to reflect on their own learning and pedagogical practices and to advance along the continuum (Cain, Glazier, Parkhouse & Tichnor-Wagnor, 2014). The GCLC contains two dispositions, four knowledge areas, and six skills that teachers can develop.

- Teacher **dispositions** include empathy, valuing multiple perspectives and showing a commitment to promoting equity worldwide.

- **Knowledge areas** focused on understanding global conditions and events; understanding the ways the world is interconnected; experiential understanding of multiple cultures; and understanding intercultural communication.

- Relevant **skills** include the ability to: communicate in multiple languages; create a classroom environment valuing diversity and global engagement; integrate learning experiences for students that promote content-aligned explorations of the world; facilitate intercultural and international conversations that prompt active listening, critical thinking and perspective recognition; develop local, national, or international partnerships that provide authentic global learning opportunities; and develop appropriate methods of inquiry to assess students' global competence development.

Global Education Challenges

Challenges to global education (GE) include neoliberal reforms, nationalism, and the lack of a clear definition. In contrast to global education's focus on learning as a journey to adopt beliefs and values, Davies and Pike (2009) stated neoliberal principles in education focus on standardizing the curriculum, obtaining quantifiable outcomes, and achieving accountability through performance measures. According to Pike, global education is ill-prepared to compete with neoliberal thought because of a lack of research-based evidence supporting the teaching and learning strategies of global education. Cogan, Grossman, and Liu (2000) wrote that global education is not accepted within broader communities because it is contrasted with patriotism. Standish (2014) questioned whether students can become global citizens without an education "based on academic knowledge and an ethical framework that is culturally grounded" (p. 166). Looking within the GE framework, there are practices relevant to teachers as they prepare students for an increasingly interdependent global society (Zong & Batalova, 2016), but at this time there remains a gap between the skills and knowledge that students need to thrive in an interconnected society and what is being taught in schools (Standish, 2014).

Literature on globalization and education is starting to recognize the importance of thinking about local and global issues simultaneously, but it still fails to address peoples' experiences with global crises and the effect they have on education (Apple, 2011). The ability to compete in international markets requires a nation's workforce to develop new ideas, collaborate, effectively solve problems, communicate in more than one language, and adapt to new contexts and environments (Wang, Lin, Spaling, Odell, Klecka, 2011). Equipping the U.S.'s workforce with these qualities is "one of the primary responsibilities of teachers", yet many teachers do not have the knowledge, skills, and dispositions to meet this responsibility (Wang et al., 2011). Investigating teacher practices within global education contact zones and identifying their

perceived supports toward creating an equitable education is the start of developing relevant

professional development designed to alter pedagogical practices.

The diversification of societies due to migration, cultural changes, and increased

sensitivity to individual and group identities are three examples of the burdens threatening the

quality of education (Pigozzi, 2006). Ensuring that students have the competencies to succeed in

an international market is crucial; however, it is just as important to have high-quality teachers

who possess the same knowledge, skills, and dispositions required of graduates. Including global

education as a part of equitable education offers a framework for creating effective learning

spaces for culturally diverse classrooms. With appropriate teacher professional development

(Wang et al., 2011), there are opportunities to advance educational equity, as diverse students

bring the globe into the classroom. Presently, though, teachers are unprepared to work with

students of diverse backgrounds and multiple social identities (Hurtado & Guillermo-Wann,

2013).

Despite the multiple definitions of GC, the NEA (2010) recognized GC must be taught

from K-12 to higher education; however, Zhao, Lin and Hoge (2007) reported that teachers and

students in America lack a global education.

Identity Development in Global Education Contact Zones

Data from the United Nation's Population District reported that 3 million immigrants

entered the United States between 2010 and 2015, mostly from Mexico, China, and India (Table

4) (Metrocosm, 2016). The U.S. Census Bureau (2010) estimated 40 million people—12.9% of

the U.S. population—is foreign born, and the number of children under 18 years of age living

with foreign-born parents is 13 million, which amounts to 32.5% of the foreign-born population

(U.S. Census Bureau, 2010). Migration is the primary reason for increased diversity within

Western countries (Yang & Montgomery, 2013), with 80% of migrants coming from Latin

America or Asia. Approximately one out of every eight people in the U.S. are first-generation

American (U.S. Census Bureau, 2017), while one out of every four children is an immigrant,

refugee, or U.S.-born to immigrant parents (Suarez-Orozco, 2008). Crossing national borders is

only the beginning of immigration's long, complex process, which affects student learning and

necessitates teacher competencies in the religious, political, cultural, and historical complexities

of their students (Rubinstein-Avila, 2017).

Table 4

Immigration into Mainland U.S. 2010-2015 (U.N. Population District)

Country	Number of Immigrants
Total	**3,063, 340**
Mexico	781,463
China	344,359
India	341,059
Philippines	212,180
Puerto Rico	196,602
Vietnam	174,337
Cuba	158,388

Mass migration contributes to global contact zones where people of "different cultural

identities 'meet, clash, and grapple with each other, often in highly asymmetrical relations of

domination and subordination' (Pratt, 1992, p. 4)" (Scotland, 2014, p. 36). This concept

translates into the classroom as global educational contact zones, where "students and teachers

with disparate cultural backgrounds and identities meet and interact" and through pedagogical

interactions maintain these zones (Scotland 2014, p. 36). Scotland (2014) stated that pedagogical

practices often reflect the ideologies of the communities with which teachers identify. Identity

development begins with students clarifying their own cultural identity and then developing

national and global identities (Banks, 2004). Banks stated that if students do not value their own

cultural identity, then it may be difficult for them to embrace and accept others. For this reason,

it is relevant to examine the extent to which student individual identity development occurs during social interactions within the global education contact zone. As the wider world trickles into classrooms in the form of international students, it becomes relevant to investigate the global educational contact zone to determine equity practices and the extent to which educators are teaching for global readiness.

Banks's (2004) Cultural, National, and Global Identifications and the Cultural Identity Typology are two models of identity formation. The first model is a three-ring concentric circle, where culture identification sits at the core and is layered by national identification followed by global identification. The second model contains six ordered stages: cultural psychological captivity; cultural encapsulation; cultural identity clarification; biculturalism; multiculturalism and reflective nationalism (cultural national identity); and globalism and global competence. Using the *Stages of Cultural Typology*, Banks believes teachers can help students further explore their cultural, national, and global identifications; however, students must develop their personal attitudes and cultural identity before they embrace other cultural groups within the larger society. Both models include global aspects, further supporting the importance of integrating global education into learning experiences.

Educational Inequities and the Need for Quality Teachers

U.S. migration trends, rankings on the PISA, along with graduates unprepared for work in a global economy, create an urgency for evaluating U.S. education systems and practices in an increasingly diverse society. Future leaders will work across geographic borders with people of various backgrounds, beliefs and experiences, and "diversity and global citizenship are our common future" (ACTFL, 2015, p. 28). To achieve harmony with America's global neighbors, the National Education Association (NEA) supports the position that American children must learn about the world (NEA, ND); however, if the country is to "truly seek to teach diverse

student populations effectively, we need to invest in quality teachers prepared and equipped with necessary tools to promote student success and counter educational reforms that consider a students' education secondary to return on investment" (Susmuth, 2007, p. 199). Teachers are gatekeepers of instruction (Lucas, 2010, p. 211), and as the population becomes more diverse, there is a need to reevaluate the unintended consequences of pedagogies that contribute to educational inequities.

To achieve an equitable, high-achieving education system, Darling-Hammond (2011) stressed the need for well-prepared educators for all students in all communities, because teachers are the most important resource toward achieving that end. To close achievement gaps, Darling-Hammond argued the need for educational reform that focuses on inputs (or "investments") instead of outputs like standardized tests. Investments identified by Darling-Hammond included: equitably funded schools, high-quality educators and learning materials, a system ensuring teachers and leaders in all communities are extremely well-prepared and supported to be effective on the job, and in-depth student and teacher learning within schools (2011, para. 7).

Compared to earlier generations, today's youth experience greater diversity among their peers, yet the current approach to basic education does not make intercultural skills a priority (Susmuth, 2007). The diversification of societies due to migration, cultural changes, and increased sensitivity to individual and group identities are factors that necessitate educational changes (Pigozzi, 2006). Susmuth (2007) argued that to prepare students for the future, traditional teaching strategies must be extended to incorporate cognitive, emotional, digital, and social skills relevant to local and global contexts, while building student identity and reducing their fear of diversity. Darling-Hammond (2011) reported that high-achieving nations—like Singapore and many others in Asia and Europe—pour resources into their education system to

create high-quality education that reaches all students. According to Darling-Hammond, the inequality of education within the United States has an "enormous influence on U.S. performance, far more than most nations" (para. 5). To close the opportunity and equity gap, students deserve a curriculum and learning context that optimizes learning (Susmuth, 2007), and this requires teachers with upgraded skills and knowledge (Hugonnier, 2007).

Teacher Preparedness

The *economic imperative perspective* of globalization places importance on a student's ability to compete in a global workforce, requiring individuals to demonstrate the ability to develop new ideas, solve problems, collaborate and communicate with others effectively, and develop the flexibility to adapt to different contexts and environments (Wang et al. 2011). Wang et al. (2011) stated that according to this perspective, the primary responsibility of teachers is to equip students for joining the future workforce—yet many teachers are unable to meet that challenge. Asia Society (2010) challenged governments, educators, and business leaders to collaborate in creating internationally competitive education systems with world-class standards and benchmarks. The promotion of information and communication tools is one strategy for addressing educational quality, equity, and global competencies while offering students an international education experience that hones 21st century skills (Asia Society, 2010).

Under ESSA, all students deserve a quality education; however, Hollins and Guzeman (2009) stated that the most important challenge facing the nation is providing a high-quality education for all students, particularly marginalized students of color, low-income students, English language learners, and those in rural and urban areas. Hollins (2011) identified the unequal distribution of access to high-quality instruction as one example of the educational inequities present in the U.S..

One explanation for the lack of high-quality teaching may reside in preservice education programs, which have been criticized for weak pedagogy, poor field experiences, and the absence of clear goals (Hollins, 2011). Teacher-preparation programs must meet minimum standards set by the National Council for the Accreditation of Teacher Education (Hollins, 2011); however, Partelow, Spong, Brown, and Johnson, (2017) stated that the American teaching profession should be more selective and have higher standards. Furthermore, teachers do not receive relevant professional development geared towards working with diverse students.

Messiou and Ainscow (2015) argued that teachers must take greater responsibility for their own professional learning, which can be done through collaborative efforts. Avalos (2011) identified collaboration as a facilitator for teacher learning that reinforces teacher practice, while the Evidence-Informed Policy and Practice in Education (EPPI) concluded that collaboration between teachers, coupled with active experimentation, may be more effective in changing practice than reflection on and discussion of practice alone (Messiou & Ainscow, 2015). Despite the importance of teacher PD, Doran (2014) reported that there are few studies exploring how teachers perceive PD experiences related to culturally and linguistically diverse (CLD) students, and the authors argued that there is a growing need to identify professional learning experiences that equip teachers with the knowledge and skills to deliver appropriate, inclusive instruction.

When working with diverse students, Messiou and Ainscow (2015) stated that there is a need to challenge one's thinking—this can be accomplished through social learning, where teachers engage in practice through participation and reification. According to the authors, "participation" is defined as the shared experience and negotiation of social interactions within a community, while "reification" is the process of producing a concrete representation of practices, such as tools, symbols, rules and documents. Additionally, international research on teacher development emphasizes the importance of: teacher development activities within the classroom,

connecting and building on expertise within the school, providing time for teacher collaboration, developing a language of practice, and using evidence to stimulate reflection and experimentation (Messiou & Ainscow, 2015).

Teacher Diversity Training

To ensure that every student succeeds, teachers need diversity training—despite 25 years of attention, however, Hollins and Guzeman (2009) reported that there has been little change in pre-service teacher preparation, as diversity courses and seminars have not been integrated into the teacher preparation experience. According to Hollins and Guzeman, research investigating programs that prepare teachers for diversity tend to be inconsistent and inconclusive; this is because outcome measures are not well developed and/or there are few longitudinal or large scales studies. This lack of research reflects the state of teacher education and suggests that diversity training is not a priority for funding agencies and is not the focus of program research (Hollins & Guzeman, 2009).

Teacher Pre-Service Training

Teacher candidates report feeling inadequately prepared to teach in urban areas or to teach diverse students (Hollins & Guzeman, 2009), as a teacher's identity directly influences their attitudes and beliefs about those different from themselves (Scotland, 2009). Scotland (2009) confirmed research linking teachers' identities to pedagogical practices reflecting the philosophy of the majority group or culture in power. Discrepancies between teacher and student identities, coupled with traditional pedagogies used with marginalized group of students, may be the reason for the growing achievement gap in the U.S.. Like students, teacher identity formation is a process of socialization (Kreber, 2010), which is shaped by experiences and interactions with diverse peoples.

While some preservice teaching programs offer courses for CLD students, Hollins &

Guzeman (2009) stated that these programs failed to incorporate multicultural issues and that

often training in these courses do not translate to changes in school practice. To effectively

educate diverse populations, there is a need to address gaps in understanding about the process of

teaching diverse populations by restructuring teacher preparation programs or professional

development (Hollins & Guzeman, 2009). Teaching for social justice requires educators to adopt

instructional strategies, including: constructivist methods bridging student culture and content;

engaging students in critical reflection about their own lives and societies; facilitating students'

cultural competence; and critiquing the discourse of power.

Increased migration within and between countries has resulted in over 20% of U.S.

students being culturally and linguistically diverse (CLD). Doran (2011) reported these students

are often at-risk for "inappropriate referrals for special education placement, inappropriate

service delivery when identified, and access to content due to language barriers" (p. 62);

however, with effective programming and instruction, the author stated these gaps can be

remedied. As classrooms become more diverse, teachers are challenged to take into account the

different cultures, languages, faiths, lifestyles and other differences affecting learning

preferences and pace (Messiou & Ainscow, 2015).

To support CLD students, Avalos (2011) reported teachers must have an awareness of

diverse languages and development, be familiar with students' socio-emotional development,

and have a disposition toward equitable practice. Bustos-Flores (2007) and Reeves (2006)

reported that teachers tend to have positive beliefs about CLD learners and diversity in general,

but that they lack the knowledge and skills to successfully implement instructional practices

relevant to diverse learners (Avalos, 2011). In fact, Durgunoğlu and Hughes (2010) stated that

preservice teachers were not effective in implementing strategies to support CLD students, and

preservice teachers reported that their mentors gave little guidance. For these reasons, Messiou and Ainscow (2015) indicated that there is a need to identify strategies that support teachers in developing effective practices that meet the needs of diverse learners.

Millennial Teachers: An Opportunity for Achieving Equity

One advantage of increased diversity within the school community is that it creates an opportunity for students and teachers to socialize with people different from themselves and to further develop their personal and global identities. Millennials are the new generation of teachers, and they have unique characteristics that could foster educational equity. They are the most diverse generation yet approximately one in five millennials have an immigrant parent (Clark & Byrnes, 2015). Clark and Byrnes's (2015) research on millennial preservice teachers found that they: were often accepting of people with different backgrounds from their own; engage in community service; and are comfortable with equal-status relationships. When asked what they most wanted to learn during their pre-service education program, they identified: how to manage student behavior; how to differentiate the curriculum to meet the needs of individual students and groups; how to develop a respectful and caring classroom; use more effective teaching strategies and techniques to ensure student academic success; and understanding their professional, legal, and ethical responsibilities (Clark & Byrnes, 2015).

Increased Interest in Teacher Professional Development

There has been an increased emphasis on professional development in the U.S. and other nations because many teachers desire training aimed at helping them support diverse learners (Doran, 2011). Teacher professional development is a complex process requiring the cognitive and emotional involvement of teachers, both individually and collectively, along with a willingness to examine personal beliefs and identify appropriate alternatives for change (Avalos, 2011). Avalos (2011) stated that professional development is about teachers learning how to

learn and transforming their knowledge into practice for the benefit of their students' growth and achievement. The following sections describe several professional development models aimed to facilitate an equitable education.

Theory of Action

Teacher professional development is an integral component of achieving desired student outcomes. The Theory of Action involves an ongoing engagement in systematic and practical inquiry (McDonald, Domingo, Jeffery, Pietanza, & Pignatosi, 2013) that has a clear implication for "pedagogy, teaching strategies, and course design" (Argyris, 1997, p. 12). In terms of professional development, the Theory of Action provides a framework for understanding how teacher pedagogical actions affect student outcomes (Weisburd, Sniad, 2005/2006). A teacher's beliefs, values and practical considerations are influenced by their history, and for this reason the Theory of Action states that professional learning experiences assist teachers in identifying the routines that need to be changed (Timperley, Wilson, Barrar, and Fung, 2007). Exploring and challenging teachers' implementation of the theories of action has the potential for greater "buy-in" because of their increasingly developed understanding of new practices that are aligned to achieving student outcomes (Timperly et al., 2007). Collecting data on teacher perceptions of their global educational practices offers a starting point from which districts and local colleges/universities can begin to collaborate on courses and professional development aimed at developing teacher competencies.

Participate's© global education teacher training uses the Theory of Action to demonstrate teacher professional development on teacher learning, classroom practice, and student learning (Figure 7).
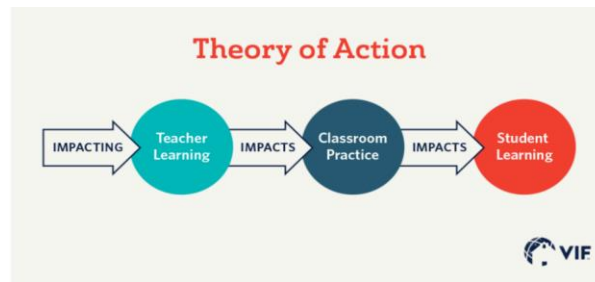
Figure 7. Theory of Action used by Participate© Theory of Action Double Loop

      According to Messiou and Ainscow (2015), professional development should be a continuous process whereby teachers engage in planned experiences and opportunities, within the context of their teaching activities that allow for growth and development. The authors stated the new paradigm of professional development focuses on growth and development opportunities. The success of this model depends on supportive interactions between teachers, as the term "development" refers to changes in teacher practices that lead to more effective student outcomes. The authors argued teacher development must occur within classrooms to address individual teacher concerns within the context of the workplace. Furthermore, Messiou and Ainscow (2015) and Avalos (2011) identified collaborative participation among teachers as essential for maximizing teacher learning, which may explain the recent emphasis on collaborative inquiry in the U.S., Canada, and other nations.

      Messiou and Ainscow (2015) conducted a three-year case study of ten teachers in England, Portugal, and Spain; from their findings, they created a model for supporting teachers in creating an inclusive classroom by incorporating student views. To foster a teacher's capacity to respond to the needs of diverse students, the authors stated that teachers must: incorporate student views to help teachers become more sensitive to issues of diversity and the way learning is organized in schools; engage with the views of others to stimulate professional discussion and experimentation among practitioners; collaborate with other teachers to support the introduction

of new ways of working; and learn from differences that challenge the status quo within the
school.

Using these four propositions, Messiou and Ainscow (2015) conceptualized a model for
professional development in respect to student diversity. The model consists of four interacting
processes (Figure 8). This model incorporates Argyris and Schon's (1996) *Theory of Action*,
which guides leaders and teachers through a learning process that closes the gap between their
theories of personal action and their theories in use. "Single-loop" and "double-loop" learning is
used to describe the process of the *Theory of Action* (Messiou and Ainscow, 2015; Argyris &
Schon, 1996). Argyris and Schon explained that single-loop learning describes situations in
which individuals "act on the world, receive feedback on the consequences of their actions, and
adapt their behavior to the feedback", while double-loop learning is the "process of single-loop
learning with the additional stage of reflection on the process by which we read and adapt to the
consequences of our actions and try to improve how we learn from our actions" (Argyris and
Schon, 1996, p. 82).
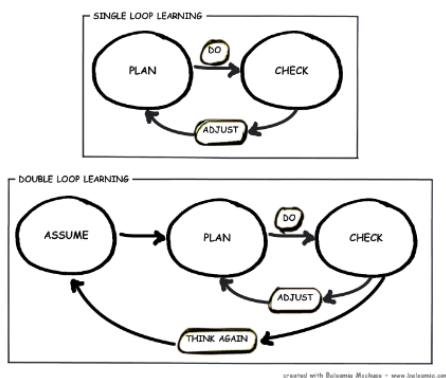
Figure 8. Argyris and Schon's (1996) Theory of Action Model

Learning from Differences

Responding to learner diversity requires engagement with student views (Messiou &
Aisncow, 2015). This central component to Messiou and Ainscow's (2015) *Learning from*

Differences model (Figure 9), challenges teachers to go beyond sharing their existing practices

and invent new possibilities for engaging students in lessons.
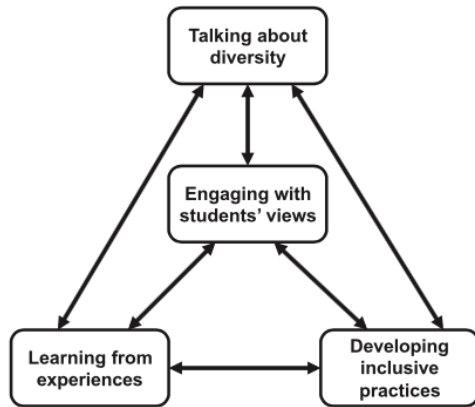
Figure 9. Learning from differences: the strategy (Messiou and Ainscow, 2015)

From their research, the authors documented how these processes led teachers to

"reconsider their ideas regarding learner diversity, particularly in respect to the ways in which

the differences are formulated and described" (p. 253). Messiou and Ainscow (2015) identified

three ways that teachers thought about student differences: adopting categories, creating

categories, or rethinking categories. The authors stated that when adopting categories, teachers

described their students by age, gender, ethnicity, language status, SES, attendance, and special

education needs. Creating categories of high, middle, and low ability to learn was a second type

of grouping, which was based on teacher perceptions, assumptions, and interpretations of certain

groups of learners (Messiou and Ainscow, 2015). As the project developed, the authors noted

that teachers were engaged in rethinking categories—this went beyond the first two ways of

thinking and included listening to the views and experiences of their students, which helped

teachers identify and address contextual barriers that made learning difficult for some students.

Building on the limited research on teacher PD for CLD learners, Doran's (2014) research aimed to investigate teachers' professional development learning experiences and the content they felt was most important when working with CLD learners. Framing the study in social constructivism, Doran interviewed 10 middle school teachers at a diverse U.S. school to learn how they constructed meaning from prior experiences and the extent to which they furthered social justice and equity through the teaching and learning process. Despite the growing need for improved skills to work with CLD learners, Doran's findings were similar to previous research in that teachers had little preparation or professional development in terms of working with diverse students. Teachers in the study reported a need for more PD on curriculum-related resources relevant to CLD learners (Doran, 2014). The author stated that more large-scale research is recommended to investigate teachers' perceptions of PD, as changing demographics and curricula place new demands on schools. For this reason, Doran expressed that teacher PD must evolve and provide teachers the skills to "master curriculum, modify language and materials for all learners, and support colleagues in accomplishing the same goals" (2014, p 73). Developing teachers' skills with regards to working with CLD students, Doran suggested differentiated formal PD and creating a climate of collaboration and mutual knowledge-sharing. Intensive PD with a focus on equity, critical pedagogy, and differentiated instruction for diverse learners were also identified as effective practices in changing teachers' pedagogical practices and perceptions of students (Doran, 2014).

According to Doran (2014), teachers value professional development that incorporates active learning, collaborative problem-solving, cross-disciplinary activities and communities of practice that are integrated with other school improvement initiatives; however, many teachers reported that their PD experiences incorporated "little active learning and few opportunities for practice" (p. 65). Teachers expressed their desire for "practical, informal assistance such as

advice from colleagues, collaboration, and assistance with planning" and "additional training in areas directly related to cultural responsiveness and effective instruction, including language accessibility for CLD learners" (Doran, 2014, p. 65).

In summary, there is a need for teacher professional development and additional research investigating teachers' preparedness to work with CLD students. Messiou and Ainscow's (2015) framework for professional development centers on the inclusion of student views. Additionally, both Messiou and Ainscow (2015) and Doran (2014) identified the importance of collaboration and social learning within contexts. To further develop teachers' skills in working with CLD students, Messiou and Ainscow (2014) identified the need for effective leadership, scheduled time for teachers to meet, and opportunities for teachers to observe other classrooms or lessons. According to Messiou and Ainscow, investing in teacher learning will pay off in terms of student learning, and this can be accomplished through the theory of learning and the *Learning from Differences* models.

Conceptual Framework: Equity and Global Education

The literature review informed the conceptual framework guiding the study's design. The framework draws on the key concepts of equity, global education, global educational contact zone, identity, and the Learning from Differences model. Through this conceptual model, it is possible to investigate the global educational contact zone and gauge educator's perceptions of teaching for global readiness. Additionally, the measure provides educators an opportunity to reflect on their own global competencies. Exploring educator practices within the global education contact zone offers insight to perceived supports needed to effectively incorporate GE and provide an equitable education for all students. Besides validation studies, there has been no other published report discussing the validity of the instruments, and thus the study provides additional information on the instruments' validity.

The equity filter represents international educational equity goals filtered down to nation-states and school's interpretation of these goals into policy directly affecting classroom practice. The Global Identity and Experience Pyramid is based on Banks' (2004) stages of cultural identity model, which considers individual identity and experiences at varying degrees and levels. The global education contact zone exists at the meeting points of the Equity Filter and the Global Identity and Experience Pyramid (Figure 10). Examining this zone allows for an exploration of equity goals and policy in practice, as well as the extent to which educators are teaching for global readiness. Teachers and students interact within this zone, as shown by the Learning from Differences model, which encourages the engagement of teacher and student views, learning from experiences, talking about diversity, and developing inclusive practices. It is within this zone the current study investigated: the extent teachers integrate global education experiences into classroom practice; perceptions of teachers' individual global competencies; perceived supports to achieve equity goals; and whether the TfGR scale (Vessa, 2016) and the GCLC (Cain et al., 2014) can assist school districts in measuring equity and global education practices and beliefs. Due to the complex nature of the study, the framework influenced the study's implementation into two phases.
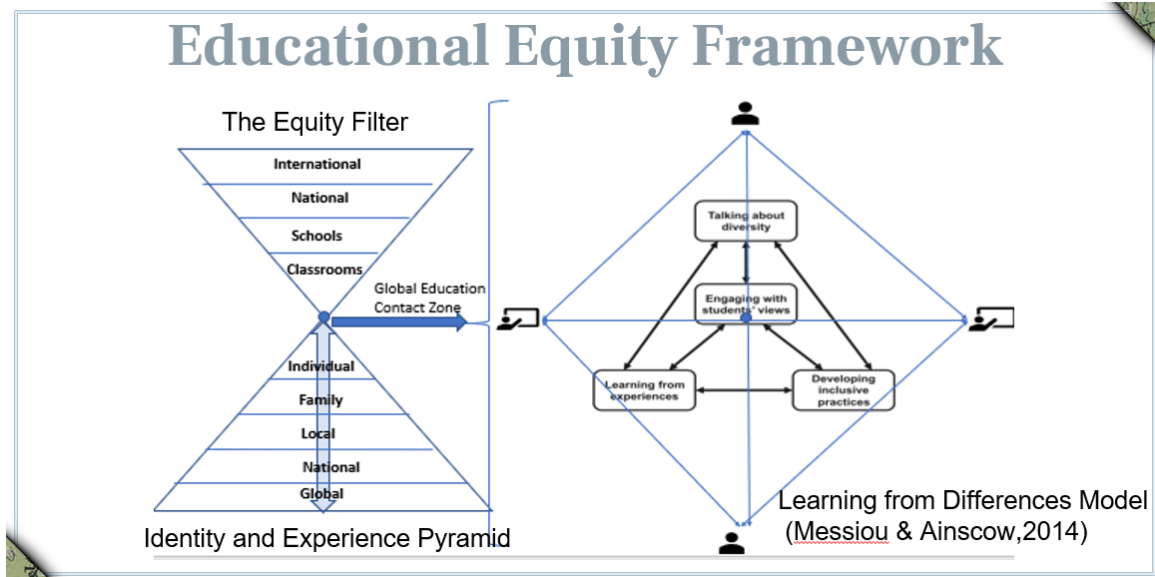
Figure 10. The Equity in Education Model: Researching the educational contact zone and student outcomes using the Learning from Differences model

Definition of Terms

The following key terms are used throughout the study.

1) *Cultural hybridization*: individuals' construction of their own cultural spaces from the

   interaction and negotiation between local cultural agent/actors and global cultural

   resources and forms.

2) *Educational equity:* recognizing differences and redistributing resources and

   opportunities accordingly (Mills & Ballanytne, 2016), accounting for the integration of a

   culturally relevant, culturally responsive, multicultural and global education—one with

   teachers possessing the knowledge, skills and competencies to teach diverse students in a

   globalized society—that achieves the OECD's 10 Steps to Equity in Education.

3) *Equity*: personal or social circumstances, like gender, ethnic origin, or family

   background, are not obstacles to achieving educational potential; all individuals reach a

   basic minimum level of skills (fairness and inclusion).

4) *Global competencies:* the knowledge, skills, and dispositions needed for living and working in a global society (Caine, Glazier, Parkhouse, & Tichnor-Wagnor, 2014). This includes knowledge of other world regions, cultures, economics, and global issues; the skills needed to communicate in languages other than English, to work in cross-cultural teams, and to assess information from different sources around the world; and value and respect for other cultures and of civic engagement (State Schools, ND).

5) *Global Education:* learning about problems and issues that cut across boundaries, and about the interconnectedness of ecological, cultural, economic, political and technological systems; perspective taking (seeing things through the eyes and minds of others); taking individual and collective action for social justice and the creation of a better world (Tye, 2014).

6) *Global Education Contact Zones:* zones where school personnel and students of diverse cultural backgrounds and identities meet; teachers and students maintain these zones through instructional practices.

7) *Social justice:* what is fair and just, and who is entitled to what from whom under what circumstance (Lerner, 1981; Mills & Ballantyne, 2016).

8) *Teaching for global readiness*: a teacher's situated practice, integrated global learning, critical literacy and transactional experiences (Vessa, 2016).

9) *Quality teachers*: teachers with the knowledge, skills, and dispositions to work with culturally and linguistically diverse students and achieve positive student outcomes.

Chapter 3: Methodology

The purpose of this study was to investigate the global educational contact zone to determine educators' teaching for global readiness, perceptions of their global competencies, and the supports needed to provide all students an equitable education. Information from the results will inform the school district's understanding of practices occurring within the global education contact zone. The following outline of the methodology used to conduct this mixed-methods study includes the philosophical assumptions that guided the quantitative and qualitative approaches and the analysis of data (Creswell & Plano Clark, 2011).

Research Questions

The following research questions guided the study design.

1. What are educators' perceptions of teaching for global readiness?

2. How do educators evaluate their own global competencies?

3. What types of supports do educators need in order to deliver an equitable education for all students?

4. To what extent does the Teaching for Global Readiness Scale serve as a screener for identifying professional development needs on the Globally Competent Learning Continuum?

Research Design

The typology of mixed methods research design selected was a fully mixed, concurrent triangulation, equal status design. This design enabled the collection of quantitative (phase 1) and qualitative data (phase 2) simultaneously, allowing survey results to drive the development of questions for the second stage of teacher interviews. This design also allowed for the validation of findings from both phases of research (Kroll & Neri, 2009) (Figure 10).

Fully mixed, concurrent triangulation, equal status design

QUAN + QUAL
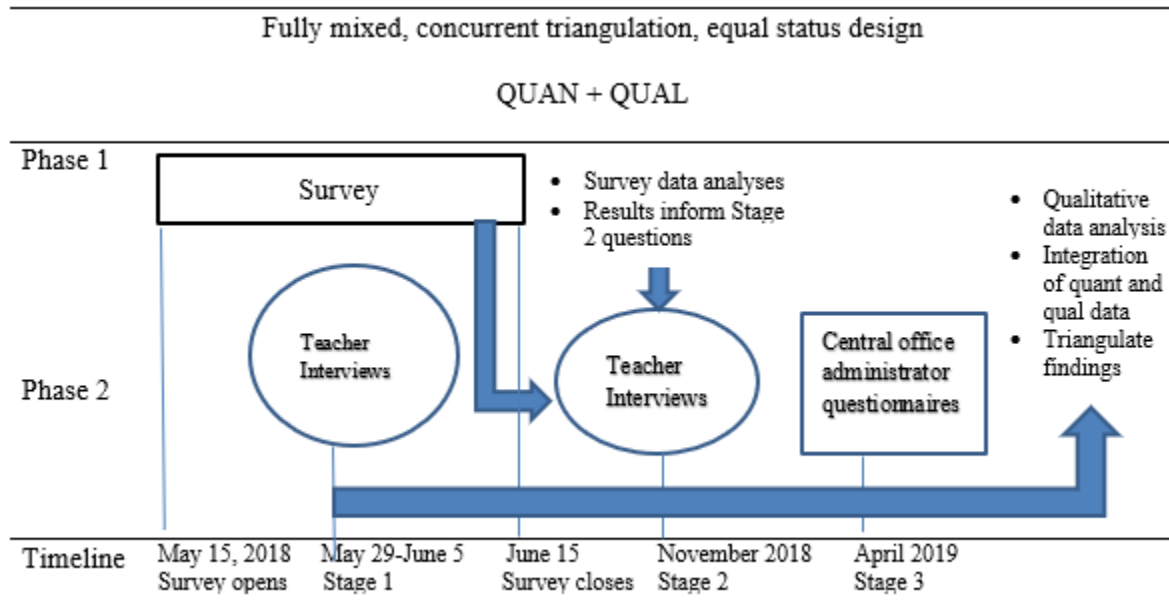
Figure 11. Fully mixed, concurrent triangulation, equal status mixed methods design (Leech & Onwuegbuzie, 2009).

The selection of a fully mixed, concurrent triangulation, equal status mixed methods design integrated the strengths of qualitative and quantitative research, enabling a broad range of research questions to be answered, while providing stronger evidence to the findings (Johnson & Onwuegubuzie, 2004). Additionally, the rationale for conducting mixed methods research included: the ability to triangulate findings from the quantitative and qualitative phases; the development of qualitative questions based on data from the quantitative phase; and the expansion of research by using different methods (Johnson & Onwuegubuzie, 2004).

The selection of the mixed-method's design considered Leech and Onwuegbuzie's (2009) three dimensions of level of mixing; time orientation; and emphasis of approaches. This design took a fully mixed, concurrent, equal status design, as the data from the two phases were mixed concurrently across at least one of the four components of the research study: the research objective; type of data and operations; type of analysis; and type of inference (Leech & Onwuegbuzie, 2009).

Study Context and Setting

The study took place in Madison County Public Schools (MCPS), a large public-school district in the Mid-Atlantic region of the United States. The school district enrolls a diverse community of learners, with 59,000 students within 38 elementary (K-5), 12 middle (6-8) and 11 high schools (9-12), and a technical center. Demographics of the MCPS teaching staff are 84% White, 13% Black, 1% Hispanic, and 2% identified as Other, with over 60% identifying as female. For the 2016-2017 school year, the district reported a 90% on-time graduation rate and 96% daily attendance rate, with all schools accredited. Additionally, the district had six National Blue-Ribbon schools and six National Title I Distinguished schools.

MCPS has programs, supports, and initiatives that promote equity. Some of these include: one-to-one Chromebooks for students in grades 4-12; elementary social and emotional learning programs like "Caring Community" and "Leader in Me"; a year-round elementary school; project-based and expeditionary learning initiatives; and the creation of an equity committee comprised of district employees, community partners, and other community members. This district has specialty centers for high-school students comprising two International Baccalaureate Programs, a Leadership and International Relations program, and a Spanish Immersion program, to name a few. Like most school districts in the U.S., it offers ELL programs and services, has gifted programs, and features alternative education programs.

In 2016 MCPS established an equity committee tasked with assessing district equity practices and in 2018 MCPS published a district equity report identifying goals and strategies for promoting equity. Based on this work, the district identified six areas of focus: access and opportunity; disciplinary practices; engaging stakeholders; policy and practice; professional development; and staffing. Each focal area has three to five goals related in some way to the OECD's equity categories of design, practice, and resourcing. Examples of initiatives included:

the need to identify clear, research-based criteria to equitably allocate finite resources to schools; investigating practices and actions in the district; and considering school locations related to the financial impact on families/students (for example, fees for Chromebooks or taking the PSAT).

Acknowledging the importance of a staff that reflects the diversity of the student population and community, MCPS created goals to: increase minority teacher representation; provide and support opportunities for developing a culture embracing a diverse workforce; and increase the hiring, support, and retention of diverse employees. Furthermore, the district is committed to establishing an Office of Equity and hiring additional employees to ensure equity goals are met.

District initiatives advancing equity and programs aligned to global education practices made MCPS an ideal setting to research. Exploring the global education contact zone through educators' perceptions of their teaching for global readiness; perceptions of their global competencies; and the supports needed to provide all students an equitable education offered insight into the success of district initiatives/programs and identified areas for further development. Furthermore, other school districts interested in educational equity and global education practices can also benefit from learning about this case.

Instrumentation

Measurement Selection

To investigate the global education contact zone, the Teaching for Global Readiness (TfGRS) (Vessa, 2016) and the Global Competence Learning Continuum (GCLC) (Cain et al., 2014) were selected because of their use by Participate© and ACGS, respectively. A crosswalk of the TfGRS and GCLC was developed to determine overlap within the two measures (Table 5). The TfGRS is a 19-item tool looking at a teacher's situated practice, integrated global learning, critical literacy, and transactional experiences. The GCLC is a detailed rubric considering two

teacher dispositions, three areas of teacher knowledge, and six skills. Both tools rely on self-

reflection. Together, they may offer promise for advancing global education and equity practices

(Table 5).

Table 5

Crosswalk of Items in the TfGRS and GCLC

TfGRS	GCLC
Situated practice - I take inventory of cultures represented by my students. (SP1) - I cultivate a classroom environment that values diversity. (SP2) - I cultivate a classroom environment that promotes equality. (SP3) - I provide a space that allows learners to take risks. (SP4) - I provide a space that allows students a voice. (SP5) - I attempt to break down students' stereotypes. (SP6)	- Commitment to promoting equity worldwide (D2) - Experiential understanding of multiple cultures (K5) - Understanding of intercultural communication (K6) - Create a classroom environment that values diversity and global engagement (K6) - Create a classroom environment that values diversity and global engagement (S8) - Experiential understanding of multiple cultures (K5)
Integrated global learning - I build a library of resources related to global education. (IGL1) - I integrate global learning with the curriculum. (IGL2) - I use inquiry-based lessons about the world. (IGL3) - I assess students' global learning. (IGL4)	- Understanding the ways the world is interconnected (K4) - Integrate learning experiences for students that promote content-aligned explorations of the world (S8) - Facilitate intercultural and international conversations that promote active listening, critical thinking, and perspective recognition (S10) - Develop and use appropriate methods of inquiry to assess student's global competence development (S12)
Critical literacy - I ask students to engage in discussions about international current events. (CL1)	- Empathy and valuing multiple perspectives (D1) - Understanding of global conditions and current events (K3)

- I ask students to analyze the reliability of a source. (CL2) - I ask students to analyze content from multiple perspectives. (CL3) - I ask students to analyze the agenda behind media messages. (CL4) - I ask students to construct claims based on primary sources. (CL5)	
Transactional experiences - I bring in speakers from different backgrounds so that students can listen to different perspectives. (TE1) - I ask students to utilize asynchronous technology for international collaboration. (TE2) - I ask students to utilize synchronous technology for international collaboration. (TE3) - I ask students to utilize technology for virtual interviews. (TE4)	- Develop local, national, or international partnerships that provide real world contexts for global learning opportunities (S11) - Facilitate intercultural and international conversations that promote active listening, critical thinking, and perspective recognition (S10)
Not in the measure	- Communicate in multiple languages (S7) - Understanding intercultural communication (K6)

The Perceptions of Teaching for Global Readiness Survey (PTGRS) (Appendix A) was an electronic survey with selected-response items. The PTGRS consisted of 19 questions from TfGRS (Vessa, 2016) and 12 questions from the GCLC (Cain et al., 2014). Demographic questions, years of teaching, and global education teaching experience were also included. One open-ended question was included to allow participants to share comments on global education. Finally, there was the option to opt-into a teacher interview or group discussion at the end of the survey. Data from the survey was analyzed and used to develop focus-group discussion questions aimed at further understanding the survey results and identifying supports teachers need to provide all students an equitable education.

Perceptions of educator's teaching for global readiness and their global competences was measured using a 38-item survey with 19 items from the Teaching for Global Readiness Scale (Vessa, 2016), 12 items from the Globally Competent Learning Continuum rubric (Cain et al., 2014), 5 demographic questions, 2 questions related to participation in a global education program, and a final question asking for volunteers to participate in a teacher interview or group discussion.

Survey Content Review

The TfGRS and GCLC rubric are validated tools used by Participate[©] and ACSC[©], respectively. Vessa (2015) was contacted to inquire about whether updates to the survey were made or advised. Vessa suggested adding a question about teachers' global education experience and the extent to which it affected their teaching. Participate[©] uses the TfGRS as part of its global education program and a member of the research team explained how two questions were rewritten (Julie Keane, personal communication May 14, 2018). Hillary Parkhouse, co-creator of the GCLC, was contacted for recommendations converting the rubric into a survey format (Parkhouse, Personal communication February 10, 2018).

Pilot Study

The GCLC was modified from its original use as a rubric for individual reflection, so a pilot study was conducted in three schools—one elementary, one middle, and one high school—in Madison County Public Schools (MCPS) prior to the full study in MCPS. The administration window for the pilot was one week, while the full study was four weeks in length with a reminder at the start of the third week.

Following a content review of the *Perceptions of Teaching for Global Readiness Survey* (PTGRS) (Appendix A), a pilot administration was conducted. While the *Teaching for Global Readiness Scale* (TfGRS) is a validated measure, the *Globally Competent Learning Continuum*

(GCLC) was converted from a personal reflection rubric and not intended to be administered as a survey; however, to determine the GCLC's alignment to the TfGRS, there was a need to convert the GCLC to a survey format. Altering the use of the GCLC measure warranted the need to pilot the PTGRS and ensure that the internal consistency of the measure met *a priori* of Cronbach's coefficient of $\alpha = .60$.

After IRB approval of the research plan and measure (HM20012714), the pilot survey was sent to school administrators in MCPS with instructions to distribute the survey to teaching staff in the school building (Appendix B). The email forwarded to teachers from building administrators included information about the purpose of the pilot, a link to access the survey and provide consent, and an explanation that participation was voluntary. One open-ended question was included to obtain participant feedback on the instrument itself. A total of 56 respondents started the survey, with 44 eligible to participate and 12 illegible. Of the 44 eligible respondents, 28 completed the entire survey and 5 partially completed the survey.

The demographics of the pilot study participants are summarized in Table 6. In summary, teachers with zero to 20 or more years of experience represented 42.42% of the participants, with 72.73% participants identifying as "female". Participants identifying as: "White/Caucasion" represented 60.61% of the sample while participants identifying as "Black" was 15.15%. Middle-school participants represented 57.57% of the sample while high school and elementary participation was 6.06% and 36.37%, respectively.

Table 6

Pilot Participant Demographic Information (N=33)

Source	Level	Frequency	Percentage
Years	0-4 years	8	23.53
Teaching	5-9 years	2	6.06
	10-14 years	5	15.15
	15-19 years	4	12.12
	20 or more years	14	42.42
Gender	Male	2	6.06
	Female	24	72.73
	Other	2	6.06
	Do not wish to answer	5	15.15
Race /	African American/Black	5	15.15
Ethnicity	Asian	2	6.06
	Hispanic	2	6.06
	Multiracial	2	6.06
	White/Caucasian	20	60.61
	Do not wish to disclose	2	6.06
School level	Elementary	12	36.37
	Middle	19	57.57
	High	2	6.06
Subject	English	11	33.33
	Math	3	9.09
	Science	4	12.12
	Social Studies	3	9.09
	World Languages	3	9.09
	Elementary (all levels)	9	26.47

Participants were asked if they had any global education experience. This included studying abroad or being trained in global education practices. The percentage of respondents that had participated in a global education experience made up only 19% of the participants (Table 7).

Table 7

Pilot Study Participants with Global Education Experience

Response	Frequency	Percentage of respondents
No	27	81.82
Yes	6	18.18
Total	33	100

Pilot Study Results

The item-means were calculated and then matched to the following conversion scales for analysis.

TfGRS—Likert Scale: Strongly Agree to Strongly Disagree (1-5)
Strongly Disagree: 1.0-1.49
Disagree: 1.50-2.49
Neither Agree/Disagree: 2.50-3.49
Agree: 3.50-4.49
Strongly Agree: 4.50-5.00

TfGRS—Likert Scale—Never to Daily (0-6)
Never: 1.0-1.49
Less than once a month: 1.50-2.49
Once a month: 2.50-3.49
2-3 times a month: 3.50 to 4.49
Once a week: 4.50 to 5.49
2-3 times per week: 5.50 to 6.49
Daily: 6.50-7.0

GCLC—Nascent to Advanced (1-5)
Nascent: 1.00-1.49
Beginning: 1.50-2.49
Progressing: 2.50-3.49
Proficient: 3.50-4.49
Advanced: 4.50-5.00

Item-mean scores were calculated for each item on the survey (Table 8). Mean responses for items within the situated practice construct equated to "strongly agree", and critical literacy practices equated to "approximately once a month". Transactional experiences were practiced "less than once a month" and integrated global learning occurred "less than once a month to once a month".

Table 8

Pilot Study Survey Item-Mean Analysis

Survey Item (Code)	N	Min	Max	M	SD	Equates
I take inventory of the cultures (languages, countries, etc.) represented by my students. (SP1)	33	1.0	5.0	4.0	.968	Agree
I cultivate a classroom environment that promotes equity. (SP2)	33	4.00	5.00	4.6667	.47871	Strongly Agree
I cultivate a classroom environment that values diversity. (SP3)	32	4.00	5.00	4.7500	.43994	Strongly Agree
I provide space that allows learners to take risks. (SP4)	32	4.00	5.00	4.5000	.50800	Strongly Agree
I provide a space that allows students a voice. (SP5)	31	4.00	5.00	4.6129	.49514	Strongly Agree
Attempt to break down students' stereotypes? (SP6)	31	1.0	6.00	3.9032	1.75793	2-3 Times a month
I build a library of resources related to global education. (IGL1)	24	1.00	5.00	3.5000	1.25109	Agree
Integrate global learning with the existing curriculum? (IGL2)	31	1.00	6.00	2.4516	1.56714	Less than Once a Month
I use inquiry-based lessons about the world (e.g., research projects, exploratory learning, discovery learning)? (IGL3)	31	1.00	6.00	2.1935	1.42406	Less than Once a Month
Assess students' global learning? (IGL4)	21	1.00	6.00	2.7143	1.48805	Once a Month
Engage in discussions about international "current" events? (CL1)	22	1.00	5.00	1.9545	1.09010	Less than Once a Month
Analyze the reliability of a source? (CL2)	22	1.00	6.00	2.5455	1.53459	Once a Month
Analyze the content from multiple perspectives? (CL3)	23	1.00	6.00	2.9565	1.55149	Once a Month
Analyze the agenda behind media messages? (CL4)	15	1.00	5.00	2.6000	1.35225	Once a Month
Construct claims based on primary sources? (CL5)	19	1.00	6.00	2.6316	1.49854	Once a Month
Bring in speakers from different backgrounds so that students can listen to different perspectives? (TE1)	14	1.00	4.00	1.4286	.85163	Never

Utilize asynchronous technology (e.g. email, blogs, etc.) for international collaboration? (TE2)	8	1.00	4.00	2.6250	1.30247	Once a Month
Utilize synchronous technology (e.g. Skype, Google Hangout, FaceTime) for international collaboration? (TE3)	8	1.00	3.00	2.0000	.92582	Less than Once a Month
Utilize technology for virtual interviews (with experts, community members)? (TE4)	7	1.00	4.00	2.2857	1.11270	Less than Once a Month

An item-mean analysis of items related to the *Global Competent Learning Continuum*

(Cain et al, 2014) found that many teachers perceived themselves as "beginning" or

"progressing" in their global competencies (Table 9).

Table 9

Pilot Study GCLC Item-Mean Analysis

GCLC Items (Code)	N	Min	Max	M	SD	Equates
Empathy and valuing multiple perspectives (D1)	28	1.00	5.00	3.64	1.39	Proficient
Commitment to promoting equity (D2)	28	1.00	5.00	3.46	1.29	Progressing
Understanding of global conditions and current events (K1)	28	1.00	5.00	3.32	1.28	Progressing
Understanding of the ways that the world is interconnected (K2)	28	1.00	5.00	3.04	.1.00	Progressing
Experiential understanding of multiple cultures (K3)	28	1.00	5.00	2.96	.92	Progressing
Understanding of intercultural communication (K4)	27	1.00	5.00	3.30	1.24	Progressing
Communicate in multiple languages (S1)	27	1.00	5.00	1.9630	1.37229	Beginning
Create a classroom environment that values diversity and global engagement (S2)	27	1.00	4.00	2.44	.85	Beginning

Integrate learning experiences for students that promote content-aligned exploration of the world (S3)	27	1.00	5.00	2.48	1.22	Beginning
Facilitate intercultural and international conversations that promote active listening, critical thinking, and perspective recognition (S4)	27	1.00	5.00	1.63	1.36	Beginning
Develop local, national, or international partnerships that provide real world contexts for global learning opportunities (S5)	27	1.00	5.00	1.67	1.24	Nascent
Develop and use appropriate methods of inquiry to assess students' global competence development (S6)	27	1.00	5.00	1.59	1.22	Beginning

Based on survey results and feedback, it was decided to leave an open-ended question allowing participants in the full study to provide feedback about their perceptions of the survey and/or global education. Additionally, a final question invited participants to volunteer to participate in an interview or group discussion. To ensure anonymity of individual responses, this link took the respondent to a separate form, collecting contact information for future interviews and group discussions. Despite the small pilot sample, a Cronbach alpha score of .821 was achieved, suggesting internal consistency of the measure. Conducting confirmatory factor analysis, items did not always align into the same constructs. Based on the measure's internal consistency and positive respondent feedback on the worthiness of the topic, the measure was used for the full study.

Full Study Phase 1: Quantitative Data Collection and Analysis

Participant Recruitment

Data on Madison County Public Schools' teacher response rates to surveys differ depending on whether the surveys are mandated by the district or voluntary. Teacher response

rates on other MCPS surveys tend to be about 30%; however, Nulty (2008) reported that average response rates for online surveys range from 20% to 47%.

The names and email addresses of each head of school from 36 elementary, 11 middle, and 12 high school administrators were obtained from the MCPS's website. Schools were categorized by elementary, middle, and high, and then placed in alphabetical order by school name. Using an Excel random number generator, each school received a random number and was subsequently ordered from smallest to largest. The first half of the list received version 1 of the survey and the second half received version 2. Having two versions of the survey allowed for counterbalancing, as version 1 ordered the items by TfGRS-GCLC and version 2 ordered items by GCLC-TfGRS.

Using mail merge, heads of schools received personalized emails on May 15, 2018. The email introduced the approved district study and asked administrators to forward teachers an invitation to participate in a survey investigating perceptions of teaching for global readiness. Included in the email was a memo informing participants of the chance to take part in scheduled interview or group discussion by school level (Appendix C). Educators were told the interview was to learn more about the supports they needed to provide all students with an equitable education. To maximize response rates, Dillman's tailored design model (2007) guided the survey recruitment process, and administrators received a second email asking them to forward teachers an invitation to participate in the study. The survey closed on June 15, 2018, at 11:59pm

Administration

The survey launched on May 15, 2018, during the last four weeks of school. The timing of the survey was selected because the instrument asked teachers about pedagogical practices from the last six months. Additionally, it was thought there may be more time for teachers to take the survey, as students were participating in mandated state testing.

The survey was created in VCU's RedCap and administered online because of its ability to reach a large group of people with relative ease and limited cost (Fan & Yan, 2010). Steps to decrease non-response rates included utilizing matrix responses, or only featuring a few multiple-choice questions per screen (Reips, 2002). To increase response rates, the survey was developed to take less than 13 minutes (Fan & Yan, 2010). Prior to the pilot, five individuals completed the measure and reported it took 8-15 minutes; this was consistent with the average time of 12.5 minutes needed to complete the pilot survey. Finally, as a method for reducing dropout, participants were informed of the importance of their responses, the seriousness of the study and need for high-quality data (Reips, 2002).

After opening the survey link, participants read a statement of informed consent and completed a pre-screening question to ensure that the participant taught at least one student 75% of the day. Participants meeting the inclusion criterion entered the full survey. No identifiable information was collected within the survey in order to ensure participant confidentiality. Additionally, teachers choosing to participate in an interview or group discussion were redirected to another window to ensure that individual responses were separated from teachers' contact information.

Respondent Characteristics

Due to the required administration process, it is not possible to determine an accurate response rate. However, 12 school administrators—4 each from elementary, middle, and high schools—confirmed that they forwarded teachers the survey. Public School Review (Public School Review, 2003-2020) was used to calculate the number of teachers employed by the participating schools. The total teaching population of the confirmed participating schools was 866, requiring 269 respondents needed for a 95% confidence level with a 5% confidence interval. A total of 154 participants responded to the survey, resulting in a margin of error of

7.07%, a 95% confidence level, and 60% population proportion.[2] The total teacher population in MCPS is approximately 4300, requiring a sample size of 353 for a 95% confidence level, with a 5% margin of error, and a 50% estimate of the population proportion. The estimated margin of error for a population size of 4300 and a sample size of 154 was 7.60% with a 95% confidence level and a 60% population proportion.

Administrators confirming teachers received an invitation to participate in the survey represented a range of school contexts in terms of location in the district, student demographics, and educational initiatives promoting equity. Administrators forwarding the survey and teachers completing the survey may have an interest in teaching for global readiness and thus the sample is biased to participants interested in this topic.

A total of 218 eligible participants started the survey, with 70% (N=154) completing the survey. The data was cleaned, labeled, and evaluated for normality, homogeneity of variances, and the absence of outliers and multicollinearity (Field, 2009. Next the data were investigated through descriptive statistics and histograms to determine violations of any statistical analysis assumptions.

MCPS teachers participating in the survey represented a range of teaching experience in terms of years, subjects taught, ages, and race/ethnicity (Table 10). Educators with over 20 years of experience represented 34.4% of the responses, while teachers with 5-9 years of experience consisted of 24% of the responses and teachers with 10-14 years of experience represented 16.9%. Gender demographics were consistent with MCPS, with approximately 82% of teachers identifying as females, 16% identifying as males, and 3% not disclosing their gender identity. Of the participants, approximately 89% identified as White, 13% as Hispanic, 7% as Black, and

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[2] This was determined using Creative Research Systems' Sample Size Calculator, available at https://www.surveysystem.com/sscalc.htm

1.3% as Multiracial. This is not an exact representation of MCPS as there is an

underrepresentation of participants identifying as Black and an overrepresentation of participants

identifying as Hispanic; however, similar to MCPS demographics, participants of this survey

identified as White and female.

The distribution of participants by school level consisted of 36.4% elementary, 24.7%

middle school, and 39% high school. Of the participants identifying as elementary teachers, the

subjects represented included 3.6% English, 5.4% Math, 15% other, and 76% all subjects. In

middle school, the subjects represented included 31.6% English and Math, 7.9% Science, 5.3%

Social Studies, 10.5% World Languages and 13.1% Other. Subjects represented at the high-

school level consisted of 26.7% English, 11.7% Math, 10% Science, 18.3% Social Studies, and

23.3% Other.

Table 10

Full Study Participant Demographics

Source	Level	Frequency	Percentage
Years Teaching	0-4 years	18	11.7
	5-9 years	37	24
	10-14 years	26	16.9
	15-19 years	20	13
	20 or more years	53	34.4
Gender	Male	24	15.6
	Female	128	83.1
	Other	0	0
	Do not wish to answer	2	1.3
Race/ Ethnicity	African American/Black	8	5.2
	Asian	0	0
	Hispanic	2	1.3
	Native American	0	0
	Pacific Islander	0	0
	White/Caucasian	137	89
	Multiracial	2	1.3
	Other racial identity	1	.6
	Do not wish to disclose	4	2.6
School level	Elementary	56	36.4
	Middle	38	24.7
	High	60	39.0

Subject	English	29	18.8
	Math	22	14.3
	Science	9	5.8
	Social Studies	13	8.4
	World Languages	10	6.5
	Other	28	18.2
	Elementary (all levels)	43	27.9

As with the pilot study, most respondents (86.4%) stated that they had not participated in a global education experience, while 13.6% of respondents had global education experience (Table 11).

Table 11

Participants' Global Education Experience

Global education experience	N	Percentage of respondents
No	133	86.4
Yes	21	13.6
Total	154	100

Comparing the percentage of respondents by grade and subject level provides insight into the subjects where global education may be easily integrated (Table 12). Approximately 32% of middle-school participants represented either English or Math, and 13.1% represented another role, such as ESL, World Languages, or resource teachers. At the high-school level, approximately 27% of participants represented English, 24% another subject like World Languages, and 18.4% represented Social Studies. At the elementary level, 76% of the respondents taught all subjects representing grades K-4.

Table 12

Percentage of Educators Representing Subjects by School Level

Subject	Elementary	Middle	High
English	3.6	31.6	26.7
Math	5.4	31.6	11.7
Science	0	7.9	10

Social Studies	0	5.3	18.3
World Languages	0	10.5	10
Other	15	13.1	23.3
Elementary	76	0	0
Total Percent	100	100	100

Preliminary Analysis: Instrumentation

Statistical analyses were conducted using SPSS version 24 statistical software. A missing-data analysis found a total of 18 cases with missing data. Of these cases, fifteen cases missed one item and three cases missed two items. Investigating missing data patterns revealed that four cases did not answer an item from the TfGRS on constructing claims based on evidence (critical literacy). Three cases did not answer two items on the GCLC. The first item related to teacher skills and the ability to communicate in multiple languages; the second item related to teacher knowledge of developing local, national, or international partnerships that provide real-world contexts for global learning opportunities. Additionally, two cases did not answer an item from the knowledge section of the GCLC related to experiential understanding of other cultures.

The remaining missing items were singletons within survey items. Missing data is not uncommon, thus pairwise deletion was used throughout the analysis in order to retain as much data as possible (Peugh & Enders, 2004). The overall reliability of the Perceptions of Teaching for Global Readiness Survey had a Cronbach $\alpha=0.88$; however, an $\alpha=.90$ was achieved when removing the TfGRS item "I build a library of resources related to global education". Two versions of the measure were created to counterbalance the questions and reduce error. Version 1 had the TfGRS items first, with an $\alpha=.89$, whereas Version 2 had the GCLC items first with an $\alpha=.88$. The reliability analysis suggested high internal consistency within and between measures. Furthermore, the internal consistency of items related to the TfGRS was $\alpha=.82$, and items related

to the GCLC rubric was α=.89. The high alpha for the GCLC is encouraging, especially since the measure was not used as designed.

Confirmatory Factor Analysis

Confirmatory factor analysis was conducted to validate the constructs within the TfGRS and GCLC. Although a sample size of 200 items is recommended when conducting CFA (Statistics Solutions, 2013), this sample consisted of 154 participants. The Kaiser-Meyer-Olkin measure of sampling adequacy was .85 for the TfGRS and .90 for the GCLC, which were above the suggested .6 minimum. Bartlett's test of sphericity was significant: (df171) =1393.47 for the TfGRS and (df66) =736.37 and for the GCLC, thus a confirmatory factor analysis was performed.

The TfGRS was validated with four constructs: critical literacy, integrated global learning, situated practice, and transactional experiences. The GCLC, validated as a rubric, contained three constructs: dispositions, knowledge, and skills. Confirmatory factor analysis aimed to determine whether the factor loadings were consistent with the TfGRS's and GCLC's previously validated constructs. Maximum likelihood was the method selected for confirmatory factor analysis because it finds the most likely population values (Kim & Mueller, 1978).

Selecting pairwise deletion minimized the loss of data in a listwise deletion and maximized all data available while increasing power of the analysis (Statistics Solutions, 2013). Extraction was fixed at four factors for the TfGRS (Table 13) and three factors for the GCLC (Table 15). Using the rotated Varimax factor matrix, the factor loadings for the current study differed from the constructs identified during the measurements' validation study (Table 14). Removing the item "I build a library of global education resources" increased Chronbach's alpha to α=.91 and removed a negative factor loading.

Factor loadings for critical literacy included four of the five items, while factor loadings for situated practice had five of the six items. The third factor loading consisted of items from integrated global learning, critical literacy, situated practice, and transactional experiences. Finally, the last factor loading included three of the four items within transactional experiences; however, TE4 loaded at .29, which is quite low.

Table 13

Summary of Factor Analysis for the Teaching for Global Readiness Scale—Using Principle Component Analysis

Item	Factor loadings			
	1	2	3	4
Critical literacy	0.842			
I ask students to analyze content from multiple perspectives. (CL3)				
I ask students to analyze the behind media messages. (CL4)	0.815			
I ask students to analyze the reliability of a source. (CL2)	0.803			
I ask students to construct claims based on primary sources. (CL5)	0.685			
Situated practice				
I cultivate a classroom valuing diversity. (SP3)		0.897		
I cultivate a classroom environment promoting equality. (SP2)		0.835		
I provide a space that allows students a voice. (SP5)		0.762		
I provide a space that allows learners to take risks. (SP4)		0.655		
I take inventory of the cultures (languages, countries, etc.) represented by my students (SP1)		0.411		
Integrated global learning				
I assess students' global learning. (IGL4)			0.699	
I integrate global learning with the existing curriculum. (IGL2)			0.678	
I build a library of resources related to global education. (IGL1)			-0.598^	
*I ask students to engage in discussions about international current events. (CL1)			0.565	
I use inquiry-based lessons about the world. (IGL3)			0.509	
*I attempt to break down students' stereotypes. (SP6)			0.462	
Transactional experiences				

I bring in speakers from different backgrounds so that students can listen to different perspectives. (TE1)				0.373
I ask students to utilize asynchronous technology for international collaboration. (TE2)				0.887
I ask students to utilize synchronous technology for international collaboration. (TE3)				0.599
I ask students to utilize technology for virtual interviews. (TE4)				0.293
Eigenvalue	33.14	15.00	8.36	6.42
Percent of total variance explained	16.65	15.10	14.40	8.22
Cumulative percent of variance	16.65	31.75	46.15	54.36

^ Removing IGL1 from the analysis increased the Cronbach alpha score.

* Items loading on a different construct than when validated.

The TfGRS did not align with the original measure's construct loadings (Table 14). In Vessa's (2016) validation study, the construct critical literacy obtained a subscale reliability of α = .88 with factor loading ranging from .84 to .90. In this study, factor loadings ranged from .69 to .84, but meeting the apriori level of .30. The subscale reliability for the Situated Practice construct was α = .85 with factor loadings ranging from .41 to .90; however, the situated practice item "I attempt to break down students' stereotypes" loaded with integrated global learning items. The next construct, integrated global learning, had a subscale reliability of .75 during the validation study and had factor loadings ranging from -.60 to .70. Additionally, one SP and CL item loaded with IGL items. Finally, transactional experiences had a subscale reliability of α = .77 during the validation study, with items ranging from .53 to .85. In this study, all TE items loaded together with factor loadings ranging from .29 to .90.

Table 14

Comparison of Factor Loadings from Validated Measure and Current Study

Original construct	Current student factor	Original factor loading	Current study

Critical literacy (subscale reliability .88)	I ask students to analyse content from multiple perspectives. (CL3)	.90	.84
	I ask students to analyse the behind media messages. (CL4)	.90	.82
	I ask students to analyse the reliability of a source. (CL2)	.90	.80
	I ask students to construct claims based on primary sources. (CL5)	.84	.69
Situated practice (subscale reliability .85)	I cultivate a classroom valuing diversity. (SP3)	.80	.90
	I cultivate a classroom environment promoting equality. (SP2)	.80	.84
	I provide a space that allows students a voice. (SP5)	.73	.76
	I provide a space that allows learners to take risks. (SP4)	.69	.66
	I take inventory of the cultures (languages, countries, etc.) represented by my students. (SP1)	.72	.41
Integrated global learning (subscale reliability .75)	I assess students' global learning. (IGL4)	.70	.70
	I integrate global learning with the	.72	.68

	existing curriculum. (IGL2)		
	I build a library of resources related to global education. (IGL1)	.66	-.60*
** Non-construct item	I ask students to engage in discussion about international current events. (CL1)	.70	.57
	I use inquiry-based lessons about the world. (IGL3)	.65	.51
** Non-construct item	I attempt to break down students' stereotypes. (SP6)	.61	.46
Transactional experiences (subscale reliability .77)	I bring in speakers from different backgrounds so that students can listen to different perspectives. (TE1)	.53	.37
	I ask students to utilize asynchronous technology for international collaboration. (TE2)	.71	.89
	I ask students to utilize synchronous technology for international collaboration. (TE3)	.85	.60
	I ask students to utilize technology for virtual interviews. (TE4)	.76	.29

The GCLC rubric contained knowledge, skills, and dispositions as categories for

reflection. Confirmatory factor analysis extracted three factors; however, factor loadings were

not consistent with the rubric constructs, and items loading on factors may give further insight to

the rubric's constructs (Table 15). The first factor loading included four knowledge items, one

disposition and one skill. The second construct consisted of three items, all related to skills.

Finally, the last construct contained two other skills.

Table 15

Item level Analysis for the Factors in the Perceptions of Teaching for Global Readiness Survey

Item	Factor Loadings		
	1	2	3
Experiential understanding of multiple cultures (k3)	0.666		
Understanding of intercultural communication (k4)	0.636		
Commitment to promoting equity worldwide (d2)	0.629		
Understanding of the ways that the world is interconnected (k2)	0.610		
Understanding of global conditions and current events (k1)	0.539		
Empathy and valuing multiple perspectives (d1)	0.499		
Communicate in multiple languages (s1)	0.297		
Develop local, national, or international partnerships that provide real world contexts for global learning opportunities (s5)		0.751	
Use methods of inquiry to assess students' global competence development (s6)		0.666	
Facilitate intercultural and international conversations that promote active listening, critical thinking, and perspective recognition (s4)		0.598	
Integrate learning experiences for students that promote content-aligned explorations of the world (s3)			0.770
Create a classroom environment that values diversity and global engagement (s2)			0.652
Eigenvalue	45.26	10.25	8.12
Percent of total variance explained	22.05	15.99	13.09
Cumulative percent of variance	22.05	38.08	51.12

Exploratory Factor Analysis

Based on the results of the CFA, and high correlation among many of the items in the

measure, there were several reasons for conducting EFA and creating factors. First, results of the

Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's test of Sphericity

were both suitable for EFA. Second, many items in CFA demonstrated stability within its original construct. Third, the majority of item loadings were above .40 with at least two or three variables loading on a factor, which allows for a meaningful interpretation (Williams, Onsman, & Brown 2010). Finally, since the original measures were developed and used with educators participating in a global education program, it was decided to further explore factor loadings with a population not directly involved in a global education program.

The instrument used to collect data, was a combination of two measures, one previously validated as the Teaching for Global Readiness survey and the other validated as the Global Competence Learning Continuum and used as a self-reflection rubric. Due to the negative factor loading and higher Cronbach Alpha when removing the item, *I build a library of resources related to global education (IGL1),* this item was not included in EFA. Principle components method, with an Eigenvalues greater than 1 and correlation matrix was selected for all analyses. The factor analysis rotation used was a Varimax with Kaiser Normalization. This process was performed for all EFAs.

EFA of Instrument. The internal consistency for all survey items was alpha=.90 with 30 items. The Kaiser-Meyer-Olkin measure of sampling adequacy was .86 for the instrument, above the suggested .6 minimum and Bartlett's test of sphericity was significant: (df435) =2298.16. The cumulative Eigenvalue for the six factors resulted in a cumulative variance of 63.54% with many of the items loading consistent in CFA, with one situated practice item from the TfGR scale factoring with items from the GCLC (Table 16).

Table 16

EFA of Instrument

Items	Component						
	1	2	3	4	5	6	7
Experiential understanding of multiple cultures (k3)	0.751	0.04	-0.06	0.12	0.104	0.03	0.33

Understanding of the ways that the world is interconnected (k2)	0.724	0.11	-0.11	0.139	0.126	0.02	0.07
Commitment to promoting equity worldwide (d2)	0.717	0.19	-0.15	0.239	-0.05	-0.00	0.08
Understanding of global conditions and current events (k1)	0.683	0.16	-0.2.0	0.087	0.26	-0.00	-0.13
Understanding of intercultural communication (k4)	0.663	0.22	-0.03	0.17	0.09	0.01	0.27
Empathy and valuing multiple perspectives (d1)	0.64	0.10	-0.15	-0.09	-0.05	0.24	-0.18
Integrate learning experiences for students that promote content-aligned explorations of the world (s3)	0.567	0.23	-0.11	0.21	0.41	0.17	0.25
Create a classroom environment that values diversity and global engagement (s2)	0.53	0.21	-0.22	0.23	0.39	0.07	0.18
I attempt to break down students' stereotypes. (SP6)	0.39	0.35	-0.20	0.03	0.28	0.24	0.09
I ask students to analyze content from multiple perspectives. (CL3	0.15	0.87	-0.02	0.06	0.12	0.105	-0.09
I ask students to analyze the behind media messages. (CL4)	0.16	0.86	-0.06	0.08	0.14	0.17	0.06
I ask students to analyze the reliability of a source. (CL2)	0.16	0.85	-0.07	0.15	0.14	0	-0.01
I ask students to construct claims based on primary sources. (CL5)	0.20	0.79	-0.09	0.11	0.04	0.05	0.07
I use inquiry-based lessons about the world. (IGL3)	0.04	0.48	-0.12	0.23	0.20	0.13	0.21
I cultivate a classroom valuing diversity. (SP3)	-0.13	-0.09	0.89	-0.01	.00	-0.03	-0.12
I cultivate a classroom environment promoting equality. (SP2)	-0.10	0.03	0.86	-0.05	-0.04	-0.02	-0.04
I provide a space that allows students a voice. (SP5)	-0.09	-0.17	0.84	-0.02	-0.05	0.07	0.1
I provide a space that allows learners to take risks. (SP4)	-0.18	-0.1	0.75	0.04	-0.16	0.06	0.22
I take inventory of the cultures (languages, countries, etc.) represented by my students (SP1)	-0.17	0.00	0.52	-0.2	0.02	-0.15	-0.25
Develop local, national, or international partnerships that provide real world contexts for global learning opportunities (s5)	0.22	0.12	0.00	0.74	0.28	0.09	0.13

I bring in speakers from different backgrounds so that students can listen to different perspectives. (TE1)	0.02	0.19	-0.12	0.72	0.12	-0.04	-0.08
Facilitate intercultural and international conversations that promote active listening, critical thinking, and perspective recognition (s4)	0.36	0.00	-0.03	0.63	0.07	0.23	0.10
Use methods of inquiry to assess students' global competence development (s6)	0.24	0.22	0.01	0.54	0.42	0.26	-0.03
I ask students to utilize technology for virtual interviews. (TE4)	0.10	0.23	-0.04	0.53	-0.29	0.39	0.12
I assess students' global learning. (IGL4)	0.15	0.25	0.03	0.32	0.69	0.28	-0.05
I integrate global learning with the existing curriculum. (IGL2)	0.20	0.31	-0.22	0.09	0.65	0.07	0.30
I ask students to engage in discussions about international current events. (CL1)	0.30	0.50	-0.09	0.16	0.51	0.05	0.02
I ask students to utilize synchronous technology for international collaboration. (TE3)	0.05	0.09	-0.05	0.12	0.11	0.90	0.07
I ask students to utilize asynchronous technology for international collaboration. (TE2)	0.15	0.26	0.08	0.24	0.25	0.77	-0.01
Communicate in multiple languages (s1)	0.262	0.07	-0.06	0.03	0.11	0.05	0.86
Eigenvalue	9.53	3.12	2.28	1.80	1.20	1.14	1.07
Percent of total variance explained	31.77	10.41	7.60	6.00	3.98	3.79	3.57
Cumulative percent of variance	31.77	42.18	49.78	55.77	59.75	63.54	67.10

Teaching for Global Readiness Scale

The Kaiser-Meyer-Olkin measure of sampling adequacy was .84 for the TfGRS, above the

suggested .6 minimum and Bartlett's test of sphericity was significant: (df153) =1365.65. The

cumulative Eigenvalue for the four factors resulted in a cumulative variance of 65 and the

original construct names were maintained, despite the inclusion of an item from another

construct (Table 17).

Table 17

*Summary of Factor Analysis for the Teaching for Global Readiness Scale—Using Principle
Component Analysis*

Item	Factor loadings			
	1	2	3	4
Critical literacy				
I ask students to analyze the behind media messages. (CL4)	.85			
I ask students to analyze content from multiple perspectives. (CL3)	.85			
I ask students to analyze the reliability of a source. (CL2)	.82			
I ask students to construct claims based on primary sources. (CL5)	.79			
Situated practice				
I cultivate a classroom valuing diversity. (SP3)		.90		
I cultivate a classroom environment promoting equality. (SP2)		.88		
I provide a space that allows students a voice. (SP5)		.83		
I provide a space that allows learners to take risks. (SP4)		.77		
I take inventory of the cultures (languages, countries, etc.) represented by my students (SP1)		.49		
Integrated learning				
I assess students' global learning. (IGL4)			.77	
I integrate global learning with the existing curriculum. (IGL2)			.73	
I use inquiry-based lessons about the world. (IGL3)			.70	
I ask students to engage in discussions about international current events. (CL1)			.62	
*I attempt to break down students' stereotypes. (SP6)			.51	
Transactional experiences				
*I bring in speakers from different backgrounds so that students can listen to different perspectives. (TE1)			.50	
I ask students to utilize asynchronous technology for international collaboration. (TE2)				.71
I ask students to utilize synchronous technology for international collaboration. (TE3)				.85
I ask students to utilize technology for virtual interviews. (TE4)				.68

Eigenvalue	6.1	2.9	1.5	1.2
Percent of total variance explained	33.9	16.1	8.5	6.4
Cumulative percent of variance	33.9	50.1	58.5	65

Global Competence Learning Continuum

Next, the items from the Global Competence Learning Continuum underwent EFA using the same steps described above. The Kaiser-Meyer-Olkin measure of sampling adequacy was .90 above the suggested .6 minimum and Bartlett's test of sphericity was significant $p < .05$: (df66) =736.37. The cumulative Eigenvalue for the four factors resulted in a cumulative variance of 63 and the original construct names were maintained, despite the inclusion of an item from another construct. In the rubric format, the instrument was validated with three constructs: dispositions, knowledge, and skills. In EFA two factors loadings explained 55.5% of the cumulative variance and were thus renamed to Equity and Global Education (GE) practices (Table 18).

Table 18

EFA of GCLC

Item	Factor Loadings	
	Equity	GE
Experiential understanding of multiple cultures (k3)	.76	
Understanding of intercultural communication (k4)	.70	
Commitment to promoting equity worldwide (d2)	.72	
Understanding of the ways that the world is interconnected (k2)	.70	
Empathy and valuing multiple perspectives (d1)	.67	
Understanding of global conditions and current events (k1)	.64	
Integrate learning experiences for students that promote content-aligned explorations of the world (s3)	.62	
Create a classroom environment that values diversity and global engagement (s2)	.61	
Communicate in multiple languages (s1)	.41	
Develop local, national, or international partnerships that provide real world contexts for global learning opportunities (s5)		.81
Use methods of inquiry to assess students' global competence development (s6)		.77

Facilitate intercultural and international conversations that promote active listening, critical thinking, and perspective recognition (s4)		.76
Eigenvalue	5.4	1.2
Percent of total variance explained	45.3	10.2
Cumulative percent of variance	45.3	55.5

Descriptive Statistics for Constructs

Descriptive statistics and a correlational analysis were conducted using the constructs

identified in EFA. When responding to items in the survey, participants self-reported on their

perceptions of what occurred in the classroom six months prior to the survey. To interpret the

mean scores, the following were used:

TfGRS—Likert Scale—Strongly Agree to Strongly Disagree (1-5)
Strongly Disagree: 1.00-1.49
Disagree: 1.50-2.49
Neither Agree/Disagree: 2.50-3.49
Agree: 3.50-4.49
Strongly Agree: 4.50-5.00

TfGRS—Likert Scale—Never to Daily (1-7)
Never: 1.0-1.49
Less than once a month: 1.50-2.49
Once a month: 2.50-3.49
2-3 times a month: 3.50 to 4.49
Once a week: 4.50 to 5.49
2-3 times per week: 5.50 to 6.49
Daily: 6.50-7.0

GCLC—Nascent to Advanced (1-5)
Nascent: 1.00-1.49
Beginning: 1.50-2.49
Progressing: 2.50-3.49
Proficient: 3.50-4.49
Advanced: 4.50-5.00

Construct names from the TfGR scale remained after EFA. Participants' mean score for

critical literacy was 3.12 (SD=1.6) equating to a practice of once a month. The mean score for

situated practices was 1.55 (SD=.51) equating to neither agree nor disagree. Integrated global

learning was practiced approximately once a month (M=2.93, SD=1.05) Finally, transactional

experiences had a mean score of 1.48 (SD=.85) equating to a practice that never or rarely

happened in the past six months. The constructs Equity and Global Education Practices were the

result of items on the GCLC. Participants' mean Equity score was 3.33, equating to

"progressing", while the Global Ed mean score was 1.61 (SD=.82), equating to "beginning"

stages (Table 19).

Table 19

Construct Mean Scores

Construct	N	Min	Max	Mean	SD	Equivalent
Critical Literacy	154	1.00	7.00	3.12	1.6	Once a month
Situated Practice	154	1.00	4.80	1.55	.51	Neither Agree nor Disagree
Integrate Global Learning	154	1.00	6.33	2.93	1.05	Once a month
Transactional Experiences	154	1.00	5.00	1.48	.85	Never
Equity	154	1.33	5.00	3.33	.74	Progressing
Global Ed.	154	1.00	4.67	1.61	.82	Beginning

Item-level Analyses

The inability to confirm constructs from the TfGRS and the GCLC, coupled with an item

analysis revealing skewed data led to the reporting of descriptive statistics and correlation

analyses of survey items. These scores were used when answering the research questions

investigating teaching for global readiness and educator global competencies.

Survey item variables were renamed and recoded to fit the five- and seven-point Likert

scale in the TfGRS. Responses for the first six questions on the TfGRS were transformed using a

1 to 5 Likert scale, with "strongly disagree" equating to a 1, "strongly agree" equating to a 5, and

a 3 acting as a neutral response. Remaining TfGRS survey items were transformed using a seven-point Likert scale where zero equates to "none" and seven equates to "daily. Response choices on the GCLC correspond to the level of teacher development, ranging from "nascent" to "advanced" on the continuum, with scores ranging from 1 to 5 respectively. Survey items from the TfGRS and GCLC underwent descriptive and correlational analyses. Additionally, a comparison of item-mean scores by school level (elementary, middle, high) and subject were included to further inform differences in school and subject levels.

The item-means were calculated (Table 20) and then matched to the following conversion scales for analysis.

TfGRS—Likert Scale—Strongly Agree to Strongly Disagree (1-5)
Strongly Disagree: 1.00-1.49
Disagree: 1.50-2.49
Neither Agree/Disagree: 2.50-3.49
Agree: 3.50-4.49
Strongly Agree: 4.50-5.00

TfGRS—Likert Scale—Never to Daily (1-7)
Never: 1.0-1.49
Less than once a month: 1.50-2.49
Once a month: 2.50-3.49
2-3 times a month: 3.50 to 4.49
Once a week: 4.50 to 5.49
2-3 times per week: 5.50 to 6.49
Daily: 6.50-7.0

GCLC—Nascent to Advanced (1-5)
Nascent: 1.00-1.49
Beginning: 1.50-2.49
Progressing: 2.50-3.49
Proficient: 3.50-4.49
Advanced: 4.50-5.00

Table 20

Item-Level Descriptive Results for the Factors in the Perceptions of the Teaching for Global Readiness Survey

Construct	Item	N	Min	Max	M	SD	Likert Conversion
Disposition	Empathy and valuing multiple perspectives	153	1	5	4.01	0.86	Proficient
	Commitment to promoting equity worldwide	153	1	5	3.34	1.05	Progressing
Knowledge	Understanding of global conditions and current events	153	1	5	3.45	1.14	Progressing
	Understanding of the ways that the world is interconnected	153	1	5	3.47	1.04	Progressing
	Experiential understanding of multiple cultures	152	1	5	3.30	0.96	Progressing
	Understanding of intercultural communication	154	2	5	3.27	1.14	Progressing
Skills	Communicate in multiple languages	154	1	5	2.34	1.14	Beginning
	Create a classroom environment that values diversity and global engagement	153	1	5	2.96	1.25	Progressing
	Integrate learning experiences for students that promote content-aligned explorations of the world	153	1	5	2.63	1.28	Progressing

	Facilitate intercultural and international conversations that promote active listening, critical thinking, and perspective recognition	153	1	5	1.77	1.05	Beginning
	Develop local, national, or international partnerships that provide real world contexts for global learning opportunities	151	1	5	1.53	0.95	Beginning
	Develop and use appropriate methods of inquiry to assess students' global competence development	153	1	5	1.52	0.95	Beginning
Situated practice	I take inventory of the cultures (languages, countries, etc.) represented by my students.	154	1	5	1.97	0.87	Neither agree nor disagree
	I cultivate a classroom environment promoting equality.	154	1	5	1.36	0.58	Disagree
	I cultivate a classroom valuing diversity.	154	1	5	1.38	0.61	Disagree
	I provide a space that allows learners to take risks.	154	1	4	1.58	0.67	Neither agree nor disagree
	I provide a space that allows students a voice.	154	1	5	1.47	0.60	Disagree

	I attempt to break down students' stereotypes. (SP6)	154	1	7	4.43	1.87	2-3 times per month
Integrated global learning	Integrate global learning with the existing curriculum	154	1	5	2.90	1.12	Once a month
	I build a library of resources related to global education.	153	1	7	3.26	1.59	2-3 times per month
	Use inquiry-based lessons about the world	153	1	7	2.94	1.37	Once a month
	Assess students' global learning	154	1	7	2.27	1.54	Less than once a month
Critical literacy	Engage in discussion about international current events	154	1	7	3.24	1.61	Once a month
	Analyze the reliability of a source	154	1	7	3.40	1.84	Once a month
	Analyze content from multiple perspectives	154	1	7	3.45	1.78	Once a month
	Analyze the agenda behind media messages	154	1	7	2.79	1.82	Once a month
	Construct claims based on primary sources	150	1	7	2.84	1.78	Once a month
Transactional experiences	Bring in speakers from different backgrounds so	153	1	6	1.42	0.70	Never

that students can listen to different perspectives						
Utilize asynchronous technology for international collaboration	154	1	7	1.64	1.35	Less than once a month
Utilize synchronous technology for international collaboration	153	1	7	1.43	1.02	Never
Utilize technology for virtual interviews	154	1	6	1.36	0.82	Never

Open-ended Item Analysis

Two open-ended survey items were included. The first invited teachers to share the ways that global education experiences affected their teaching, and the second gave them the opportunity to provide feedback on their survey experience. These comments were reviewed, downloaded, and included in the qualitative data analysis.

Full Study Phase 2: Qualitative Data Collection and Analysis

The purpose of a fully mixed, concurrent triangulation, equal status design was to explain quantitative results through qualitative data (Creswell & Plano Clark, 2011) and triangulate findings (Leech & Onwuegbuzie, 2009). The selection of questions was based on survey data, knowledge of district policies and resources, and to identify perceived teacher supports. Data selected for the qualitative explanation was based on the percentage of respondents who "disagreed" with their situated practices and "never" or "less than once a month" integrated global learning. For both the constructs and item analysis, descriptive statistics and correlations were examined and considered for teacher discussions and interviews.

Through a semi-structured interview protocol, educators were asked general and structured questions related to the research question. For example, teachers were asked to reflect on pre-service training and the extent it prepared them for teaching. Additionally, a question probed at perceptions of how classroom teaching and the students were the same and different over the years. Structured questions invited educators to define and give examples of equity and global education definitions and practices. Additionally, educators were asked about the supports needed to provide all students an equitable education and/or a global education.

The second round of interviews and discussions included questions based on the results of the survey data. Educators were invited to review item mean scores and their equivalent to the Likert Scale for that item. Next, a question invited discussion on the extent the skills, dispositions, and knowledge were relevant. Follow up questions included inquiry into mean scores for the synchronous and asynchronous technology items, as this division has a one-to-one computer program for students in grades 5-12. Individuals participating in this phase of interviews and group discussions were also given the survey to review and provide feedback on the strengths and limitations of the measure.

Recruitment and Participants

There were three stages to collecting qualitative data through teacher discussions, interviews, and central office administration questionnaires. The first stage occurred in May 2018, half-way through the survey administration. The purpose for holding teacher interviews and discussions at this time was due to survey closure on June 15th, at which time the researcher was moving abroad. The second stage was a series of teacher interviews and discussions occurring in November 2018, after survey closure. This second discussion allowed for deeper insight into survey questions and results. The third stage consisted of two central-office

administrator questionnaires sent and returned in April 2019 were added to the data collection, supplementing teacher interviews and group discussions.

The 24 participants completing the teacher interview or group discussion interest form were invited via email (Appendix D) to participate. Inviting all interested educators increased the potential number of participants and allowed for in-depth understanding and multiple interpretations of equity and teaching for global readiness, while also allowing the researcher to examine how these understandings differ by social groups (age, gender, ethnicity, school level, etc.) (Liamputtong, 2011). A second reason for inviting all contacts was to explore the gap between survey results and actual practice, as shared in the discussion, while giving a voice to marginalized groups (Liamputtong, 2011). Survey participants self-selecting to participate in a teacher interview or group discussion makes this a convenience sample. A total of eight interviews and teacher discussions were scheduled; however, due to cancellations teachers were interviewed individually in groups of two. A total of eight teachers participated in the qualitative portion of the study. Participants identified as female, with seven identifying as White and one identifying as Black. Subjects represented at the high school level were Social Studies, English, and Spanish, while subjects at the middle school level were Math and ELL. One elementary teacher was an ELL teacher and the other taught grade 4. The two central office administrators completing the questionnaires were female, with one identifying as Black and the other White.

Teacher Group and Individual Interviews

The fully mixed, concurrent triangulation, equal status design model allowed the investigation and mixing of quantitative and qualitative data. This offered an opportunity to discuss survey results and themes emerging from the teacher group and individual interviews. The institutional review board approved the semi-structured interview protocol developed by the researcher prior to data collection (Appendix E). The flexibility of the protocol allowed for

follow-up questions and probes based on emerging information (Merriam, 2009). Questions pertaining to equity, global education, and global competence were broad in nature and based on the overarching themes of the research study: equity and global education.

Prior to starting teacher interviews, the researcher thanked participants for their time and summarized the research project. After reviewing the informed consent document with participants (Appendix F), they were reminded of their right to withdraw from the discussion or not answer a question. With signed consent, the sessions were audio-recorded and then transcribed. Participants were reminded the audio-recording would be destroyed after transcribing the interview. Upon completion of the interview participants were thanked and provided a debriefing form (Appendix G) with the researcher's contact information.

Stage 1: During Survey Administration

Participants who completed the interview interest questionnaire were contacted via email within 24 hours of completing the survey. Teachers were emailed a short description of the teacher interview and discussion topics, a consent form, and the dates, times and locations of the interviews and group discussions. Two days before the interview participants were sent an email reminder. Upon arrival at the discussion, participants were provided a hard copy of the consent form, given time to review the form, and asked whether they had any questions prior to starting. Using a semi-structured interview protocol, participants shared definitions, perceptions, and experiences of global educational practices, as well as identifying supports needed to provide an equitable education. During stage 1, there was one group discussion with two elementary teachers (grade 3 and ELL). Due to last minute cancellations, there was one interview with an elementary school teacher (grade 1) and two separate interviews with high school teachers (English and Social Studies). The survey experience for these individuals occurred within two-weeks of taking the survey.

Group interviews with a small number of teachers allowed participants to interact and build upon each other's experiences and opinions (Liamputtong, 2011). Participants engaging in an interview appreciated the opportunity to be given a voice and stated their disappointment in their inability to interact with others to share experiences and alternate perspectives (Liamputtong, 2011).

Stage 2: Following Survey Administration

Approximately five months after completing the survey administration, individuals from the teacher interviews and group discussion interest list were invited to a primary or secondary discussion on November 10th; this invitation excluded participants from earlier discussions. During stage 2, the protocol was modified to include specific questions related to survey results. For example, teachers were able to review survey data and comment on their perceptions of the results. One participant, with several years' experience in an elementary setting and a recent middle school ELL role, engaged in an interview. Participants in the secondary teacher group interviews consisted of a middle school Math teacher and high school Spanish teacher, who also taught in middle school. This phase of the research design included questions asked of the participants in Stage 1 and included questions about teacher perceptions of survey results (Appendix H).

Stage 3: Administrator Questionnaires

Stage 3 of data collection occurred in April 2019 with two central office administrators. The focus of these questions was to learn about equity goals, strategies, and practices within the school district (Appendix I). Administrators were invited to participate in an interview; however, due to scheduling conflicts they agreed to complete a questionnaire. Information from the central office administration added another level of understanding of MCPS' equity initiatives.

Respondent Validation

Each participant received a transcription of the teacher individual and group interviews for review. Transcripts were sent via a secure password-protected file, accessible only to the researcher and participant, with the password sent in another email. During the member-check, participants were able to retract comments, make corrections or add to their contribution (Merriam, 2009). Two individuals provided the same clarification, which consisted of a transcription error of the individual who made the statement. Both individuals stated that they enjoyed the opportunity and that it was interesting to learn more about global education. The failure to receive member-checks served as implied consent for the other six participants.

Qualitative Data Analysis

Audio files were professionally transcribed. To ensure accuracy, the researcher listened to the audio while reading the transcription, making edits where necessary. In addition to the audio transcriptions, participant responses to open-ended items on the survey were included.

Using a line-by-line approach, data was coded using the deductive code list connected to items on the Perceptions of Teaching for Global Readiness Survey and the OECD's Steps to Equity in Education framework (Appendix J). While applying deductive codes, data also underwent initial and focused coding as appropriate for the grounded-theory coding approach (Charmaz, 2006b). As suggested by Charmaz (2006b), initial codes were created with words reflecting action and were later put in categories. Each code received a definition to help define parameters of use, and multiple codes were used to describe the data when appropriate.

Deductive codes were developed for each item in the survey instrument, for each equity category (design, practice, resourcing), and one for global education. Inductive codes were created while reading the transcripts using open coding (Table 21).

Table 21

Deductive and Inductive Codes, Definitions, and Examples

Type of code	Code	Definition	Example
Deductive	CL_Analyze content_multiple perspectives	TfGRS - Critical Literacy Construct - Item: Analyze content from multiple perspectives.	We read a book earlier this year called *Chains*. It's amazing, it's set during the American revolution, and it's told from the perspective of a slave. In certain ways some of them are very competent. But they're also still limited to their own experience, so I think it's our job as elementary school teachers to broaden their perspectives.
	GCLC_TS_Communicate Multiple Languages	GCLC: Teacher Skills: Item: Communicate in multiple languages.	When we are bilingual, and we can think in two languages; we think differently, and we are just curious about how words work.
	Equity Resourcing: Direct resources to students with the greatest needs	Examples of resources helping teachers and or students to reach their potential.	I would love my co-labs to be under 25. It's really hard when you have that many different kids on so many different levels; I can't function.
Inductive	Teacher: ESL_Teacher	Experiences or perceptions of ESL teachers.	I ended up staying a little bit later and completing my ESL endorsement. When they're put in ESL clusters, then I can get my hands on them and I can really work with them and

			purposefully collaborate with their classroom teachers.
Student Identities	Examples of student identity and identity formation.		I had a kid the other day say, "Yeah, I don't like his girlfriend. She's black. I was taught to keep to my own." They're saying this to an adult.
			Some kids need to identify with their own cultures by seeing someone like them.
School district: Divisional Cultural Change	Examples of cultural changes occurring within the school district.		In the last two years it's been very different for me, the socio-economic status has changed, the community has changed, the parent support has changed.

After reading each transcript, codes were reviewed to improve their fit and were merged with other codes when necessary (Charmaz, 2006). Once the initial coding was performed, each transcript was reviewed again to determine if any coding of data was missed or needed updating. Throughout the data analysis, codes were explored using NVivo exploration tools, such as hierarchy charts and code matrix analysis. The first phase of qualitative data analysis used graphic visualizations to determine code relationships and to further refine categories. Two visuals were created to analyze the data; this included the items clustered by coding similarity and a color code of hierarchies (Appendix K).

Based on the first analysis, codes related to items on the TfGRS and GCLC were grouped into categories based on constructs within the TfGRS or GCLC. Reviewing the item clusters, new categories emerged to support the updated codes. For example, the category "teacher" was

created to hold data related to teacher beliefs, experiences, pre-teacher training, and whether they were an ESL teacher. The "student" category combined codes related to student diversity, identity, and whether or not they were ELL or an immigrant. The categories "teacher" and "teaching" were left as two separate categories, because "teacher" focused on the teacher and their beliefs while "teaching" focused on the delivery of content or directly working with students.

Reviewing the data within the newly created categories, aligning to the conceptual framework, aided in further reducing the number of categories. For example, codes related to "bias" were placed into the "equity" category; pre-service training and assessment codes were placed in the "teacher" and "teaching" categories, respectively; and the "parents" code changed to "family/culture influencing students" and was placed within the "student" category. This further refined the codes into manageable categories.

Once the categories were established, a coding matrix query in NVivo was performed. The purpose of this analysis was to investigate the frequency of data with two or more codes. Based on the matrix results, relationships between categories emerged. For example, data coded as "equity" were also coded as "teacher" 44 times, "student" 31 times, and "school division" 22 times. The creation of a coding matrix enabled a quick visual display of the frequency data that was coded between two or more established categories (Table 22); it could then be used in establishing relationships or themes.

Table 22

Coding Query Matrix

	A : Equity	B : GCLC	C : Global education	D : Hear student perspective	E : School division	F : Student	G : Symbolic language	H : Teacher	I : Teaching	J : TfGR Scale
1 : Equity	98									
2 : GCLC	6	29								
3 : Global education	7	3	83							
4 : Hear student perspective	1	0	0	3						
5 : School division	22	3	6	1	56					
6 : Student	31	5	21	2	13	161				
7 : Symbolic language	0	0	1	0	0	0	2			
8 : Teacher	44	12	39	1	30	70	0	216		
9 : Teaching	13	6	5	2	10	37	0	40	89	
10 : TfGR Scale	8	9	20	1	9	17	0	40	14	87

After the codes and categories were finalized, NVivo's auto code function was performed as a method of comparing the researcher's codes to an analytical software program's code (Charmaz, 2006). Using the NVivo auto code feature, 17 codes emerged; these were then compared to the codes developed by the researcher. Codes such as "teachers", "students", and "schools" reaffirmed the creation of the categories "students", "teachers", "teaching", and "school districts". The other codes generated by NVivo were either not important, such as the word "thing", or were accounted for in another code. For example, the NVIVO code "world" aligned with "global education", while data within the "integrate student culture" code was placed in the "global education", "student", and "teacher" categories as appropriate.

When interacting with the data and codes, 10 categories emerged (Charmaz, 2006). These categories included: "equity", "GCLC", "global education", "school districts", "students", "teachers", "teaching", and "TfGRS" (figure). Data in each category was reviewed for accuracy and was recoded when data did not align with the code definition. Through this process, two pieces of data were extracted as unique. One code included "hearing student perspectives" and the second was "use of symbolic language".

Analyzing data from these categories aided in the identification of emerging and/or common themes, as well as furthering understanding the TfGRS and GCLC. Reviewing data in each category allowed for an alternate case analysis that offered different perspectives, guiding the reader to draw their own conclusions (Maxwell, 2013). Using a constant comparison method, data from each category was evaluated to ensure the most relevant codes were applied. Within the categories, specific themes emerged, including "equity talk and action", "equity and diversity training", "equity and administrative leadership", "equity and assessments", "identities in global educational contact zones" (including teacher identity, student identity, parental influences on student identity, and hidden identity messages), "student global exposure", and "unique data" (such as communication with emojis, hearing student perspectives).

Trustworthiness: An External Auditor

To increase trustworthiness, a sample of transcripts were sent for external auditing and intercoder reliability. The code book and sample transcripts were shared with an auditor who was experienced in qualitative research. The data was sent electronically in a password-protected file with the password in a separate email. The auditor applied the deductive codes and created new codes through open-coding. After sharing those codes with the researcher, they engaged in a discussion of emerging themes.

Negative-case analysis and member-checks were two methods used to strengthen the credibility of the study (Shenton, 2004). Transferability was aided by the inclusion of information about: the types of people who contributed data; the number of participants involved in the teacher group and individual interviews; an explanation of the data collection methods; the number and length of the data collection sessions; and the time period over which the data was collected (Shenton, 2004). To achieve confirmability, the researcher used Shenton's (2004) strategies of triangulating findings to reduce the effect of researcher bias; recognition of the researcher's beliefs and assumptions; an in-depth methodological description; and an external reviewer of the "audit trail". Evidence of these practices include memos regarding the coding of data, recognizing themes, the research participants, and recognizing personal bias. Cognizant of coding fatigue and error, breaks were taken regularly, which aided in coding accuracy.

Connected Mixed Methods Data Analysis

Merging the quantitative and qualitative data is an important phase, as this is where the qualitative explains, clarifies, or complements the quantitative data (Creswell & Plano Clark, 2011). Additionally, there was an analysis of how the survey data converged and diverged with data from the group and individual teacher interviews.

Ethical Considerations

Approval from the IRB ensured the ethical implications of the research study; however, the researcher knew some of the individuals participating in the study, and this made it relevant to be aware of biases and subjectivity. Recognizing researcher subjectivity and biases toward educational equity and global education was important when interviewing participants and interpreting the data. To reduce bias, leading questions were not included in the interview protocol, and during the interview the researcher refrained from actions influencing participant bias in the form of responses aligned to what they think the researcher wanted to hear. Keeping a

reflexive journal to support critical reflection on thoughts and feelings before, during, and after the interview, as well as when coding, aided in the identification of explicit biases.

Confidentiality and anonymity were a priority. For this reason, names were not collected on the survey and pseudonyms were given to participants. There was no physical harm or risk and only minimal psychological or professional harm or risk (if the participant was sensitive to the topic). Survey data was saved in VCU's RedCAP and consent forms and participant demographic forms were stored in a locked, secure file, accessible only by the researcher.

Contact information provided by survey participants on the teacher interview interest form was used only to invite participants to an interview and for member-checking. Discussions were recorded using an audio device, and the recordings were saved in a secure, password-protected drive and deleted after the member-check. Additionally, the researcher asked individuals to keep interview and teacher discussions confidential by not using names of schools, teachers, or administrators. Transcripts were labeled by the school level of the participants and the month of the discussion. Transcripts were saved in a password-protected file that only the researcher had access too.

Positionality Statement

The researcher worked as a secondary teacher for eleven years with her career starting in Wisconsin before moving to Virginia. Currently employed by the International Baccalaureate Organization, the researchers has extensive experience consulting and teaching within the International education sector. For this reason, the researcher took steps to reduce bias through reflexive journaling, constant-comparison of data, and the use of an external auditor.

Chapter 4: Results

The following chapter provides results of the study and is organized by research question and includes emerging themes from teacher individual and group interviews and central office administration questionnaires. Information from teacher interviews were woven within the reporting, as it provided a deeper understanding of equity and teaching for global readiness perceptions and practices. Mixing the quantitative and qualitative data, the chapter answers each question based on the construct and concepts underlying the research question. The first two questions investigate educator mean scores on the TfGR scale (Vessa, 2016) and the GCLC (Cain et al., 2014). The third research question investigated teachers perceived supports to provide students an equitable education. The final research question evaluated the extent the TfGR scale can be used as a screener for the GCLC.

Research Question 1: What are educators' perceptions of teaching for global readiness?

Vessa's (2016) Teaching for Global Readiness Scale was used to answer the first research question, "What are educators' perceptions of teaching for global readiness?" The TfGRS included 19 items within four constructs: critical literacy, transactional experiences, integrating global learning, and situational practices. Although factor-loading did not define clear constructs, the data is organized by construct for the ease of data analysis. Of the 19 items, 13 required teachers to estimate the frequency with which they engaged in various practices in the last six months (or in this case, the second semester of the school year).

Critical Literacy

Surveys. The critical literacy factor had a mean score of 3.12 (SD=1.6) equating to a practice of once a month. When looking at each item within the critical literacy framework, there

were two items where approximately 50% of the respondents stated they "never" or "less than once a month" engage in these practices (Table 20). Responses to the item "analyze the agenda behind media messages" revealed that 31.2% of the respondents "never" engaged in this practice, while 26.6% did so "less than once a month". Responses to the item "construct claims based on primary sources" revealed that 29.9% of respondents "never" engaged in this practice, while 20.1% did so "less than once a month". Item-means for five of the six items within critical literacy were identified as having possible differences between school and subject levels: this is something worth investigating further (Table 23).

Table 23

Percentage of Teacher Responses to Frequency of Critical Literacy Practices in the Last Six Months (Scale 1)

Construct	Items on the TfGR Survey	Never	Less than once a month	Once a month	2-3 times a month	Once a week	2-3 times a week	Daily
Critical Literacy	I ask students to engage in discussion about international current events.	15.6	21.4	21.4	20.1	10.4	8.4	2.6
	I ask students to analyze the reliability of a source.	17.5	21.4	15.6	17.5	11.7	9.1	7.1
	I ask students to analyze content from multiple perspectives.	16.2	18.2	18.8	19.5	11.7	9.1	6.5
	I ask students to analyze the agenda behind media messages.	31.2	26.6	9.1	14.3	7.8	5.8	5.2
	I ask students to construct claims based on primary sources.	29.9	20.1	16.9	11.7	8.4	5.8	4.5

Teacher Group and Individual Interviews. The qualitative phase provided additional understanding of critical literacy practices within the classroom. During the teacher group interviews, elementary school teachers often spoke of the ability to integrate other perspectives in their teaching. For example, one elementary teacher discussed conversations with her students about equality and racism. Studying a book containing racist and inappropriate language provided the teacher an opportunity to engage students in a conversation. This led her to ask questions like "...let's think about when this was written, who was talking?" Engaging students in knowing why a term is bad while providing context to the times.

When thinking about how to integrate critical literacy into instruction, an ELL elementary teacher shared an example. After reading an article on Syria, she asked students if they could relate to anything from the article because 'Maybe some of your families moved to the United States because you had violence' or 'there is violence in their home countries." Next, she engaged students into inquiring into the socio-political-religious aspects in Syria and the reasons for the fighting. Through this discussion the teacher felt she was "...making them (students) aware that there are other parts of the world that are dealing with similar things...".

Teacher group and individual interviews also revealed barriers to supporting critical literacy practices, such as school culture and the current state content standards. For example, a high school teacher felt the school's culture prevented her from using texts that may contain sensitive topics. For instance, she said, "… there's a poem I do by Hughes Cross and … he talks about being biracial. I'm not touching that at that school". Some students may identify as biracial, and not using a text is a lost opportunity to learn about biracial perspectives. With that said, the same teacher felt when talking about diverse perspectives, students would turn and "…look at the Black, Asian, or immigrant" students, which could make them feel uncomfortable.

A former elementary and current ELL middle school teacher felt there was not enough

discussion about international current events. She felt teachers were not incorporating enough

local and/or global current events into their instructional practices. Based on the personal reading

of the elementary ELL teacher, she inquired whether the Common Core integrated more critical

literacy than the State assessment, as "Common Core seems to be more focused on analytical

writing and discussing diverse perspectives."

Transactional Experiences

Survey. The transactional experience construct had a mean score of 1.48 (SD=.85),

equating to a practice of "never", consistent with the mean-item responses. Looking at the

construct, based on its validation study, over 64% of the responses for items within the

transactional experience construct revealed that respondents did not engage in this practice

(Table 24). For example, 64.3% of respondents never brought in speakers from different

backgrounds, 72.7% of the respondents did not use asynchronous technology, 77.3% never used

synchronous technology and 77.9% never used technology for virtual interviews. These results

were further investigated in the qualitative analysis, especially since MCPS is a one-to-one

district providing students in grades 4-12 with Chromebooks for personal use.

Table 24

Percentage of Teacher Responses to Frequency of Transactional Experiences in the Last Six Months (Scale 1)

Construct	Items on the TfGR Survey	Never	Less than once a month	Once a month	2-3 times a month	Once a week	2-3 times a week	Daily
Transactional experiences	I bring in speakers from different backgrounds so that students can listen to different perspectives.	64.3	31.2	1.9	1.3	0	0.6	0
	I ask students to utilize asynchronous technology	72.7	13	3.2	5.2	1.9	1.9	1.9

for international collaboration.							
I ask students to utilize synchronous technology for international collaboration.	77.3	11	6.5	1.9	0.6	1.3	0.6
I ask students to utilize technology for virtual interviews.	77.9	13	5.8	1.9	0.6	0.6	0

Teacher Discussion Group and Individual Interviews. Transactional experiences were related to bringing in diverse speakers and using asynchronous and synchronous technology. Based on an item-mean analysis, there did not appear to be a difference between subject- and school-level use; however, as a one-to-one district there was a need to further inquire about technology use during teacher group and individual interviews.

Participants discussed how they used Chromebooks in their classroom, consisting mainly of editing papers, using Google Docs for anonymous peer editing, accessing *Newsela*, and sometimes for interviews and videos of students in other classes. A high school teacher was surprised that some teachers responded to using computers "less than once a week", as she used it every day: "We just turned them in today and I was already helpless by fourth period …. It was a hard half a day with and without them."

Discussing asynchronous or synchronous computer usage among students, a high school teacher said "sometimes MCPS feels a bit limiting … because of what's blocked. I get it, it should be, in light of recent events". Another teacher felt that the teacher technology training was not useful, and her colleague could "tell me in five minutes what an hour training would have done". When asked whether Chromebooks could connect ELL students throughout the district, a middle school teacher questioned whether they had help or support for such an initiative. The logistics for connecting individuals through technology would be "overwhelming when there

was so much else going on," said one high school teacher. Teacher comfort with technology was also a factor, as explained by one a high school teacher:

> You're going to have the teachers who are technology averse, number one, and number two, you're going to have—how can you incorporate these types of things into regular instruction? I can see how this could be interpreted as well: when would I have time to do that, and get through my curriculum?

Using technology, another teacher shared how her ELL students kept in touch with a student who moved back to Mexico. Using WhatsApp, students in the class would send their friend a video and she would send one back. Sometimes the student living in Mexico would send the class pictures of her visits to Aztec ruins.

After reviewing the survey results, a teacher said, "it would be great training, to have a pacing or a guide on ideas on how to incorporate virtual interviews and collaboration of different students in different schools".

Integrated Global Learning

Survey. The Integrated learning construct had a mean score of 2.93 (SD=1.05), equating to a practice of "one a month", which is consistent with the mean-item responses. Responses to items within the integrated global learning construct revealed practices occurring on a more regular basis (Tables 25 and 26). For example, approximately 50% of the respondents stated that at least "once a month" to "once a week" they integrated global learning into the curriculum and used inquiry-based lessons about the world. In terms of assessing students' global learning, 45.5% of respondents "never" engaged in this practice and 20.1% did do "less than once a month". One item on the integrated global learning construct asked teachers to rate the level at which they agree/disagree with building a library of resources related to global education.

Combining responses from "strongly disagree" and "disagree" revealed that 42.2% of the

responses did not build a library, whereas 30.5% of the responses agreed that they had built a

library of global education resources.

Table 25

Percentage of Teacher Responses to Frequency of Integrated Global Learning Practices in the Last Six Months (Scale 1)

Construct	Items on the TfGR Survey	Never	Less than once a month	Once a month	2-3 times a month	Once a week	2-3 times a week	Daily
Integrated global learning	I integrate global learning with the existing curriculum.	10.4	27.3	22.7	20.8	6.5	6.5	5.2
	I use inquiry-based lessons about the world.	13	29.2	26	20.1	5.8	3.2	1.9
	I assess students' global learning.	45.5	20.1	12.3	13	5.2	1.3	2.6

Table 26

Percentage of Teacher Responses to Integrated Global Learning Practices in the Last Six Months (Scale 2)

Construct	Survey Items on TfGR	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
Integrated global learning	I build a library of resources related to global education.	7.8	34.4	27.3	20.8	9.7

Teacher Group and Individual Interviews. The *i*ntegrated global learning items related to the integration of global learning, assessment, and inquiry-based lessons. When speaking with teachers, three respondents mentioned project-based learning as a way of integrating global issues within the curriculum while developing global competencies. One teacher said that "when we do PBL at our school we do rubrics and we talk about can you have a healthy discourse with somebody else? Can you work collaboratively with our students? Can you use multiple students to inform your perspective? And those are all global skills in my opinion." Another teacher stated that by engaging in PBL "we're developing some global competency by having the students learn how to work together, find their own information, look at what actually is a problem and what solutions can we find for that?"

An elementary school teacher discussed how integrating global learning with the existing curriculum helped one student share their culture with the class. She said "they [students] don't really know much about Chinese culture. So today we were doing a video about smog, and it tied into a graph we were doing in Math. And it was about China, and this was the first time where this little kid in our class was like 'I know what he's saying in that video! He's speaking Chinese and I know what he was saying!' And everyone was like 'Oh my god, she knows Chinese!'". Additionally, the same teacher integrated global learning with her students when a colleague's home island was destroyed during a hurricane and the class did a book and supply drive for the school in Barbuda. The class led the project, created announcements, researched the country, and made posters. Students then went to classrooms to promote the drive where they collected supplies from rooms. These items were boxed and taken to D.C. and shipped to the community.

In conclusion, when asking teachers about integrating global learning into the curriculum, the response was that they didn't need a lot of equipment, but instead needed reminders or training.

Situated Practice

Survey. Like integrated global learning, items within situated practice sat between two measurement scales (Tables 27 and 28). The situated practice construct had a mean score of 1.55 (SD=.51), equating to a "neither agree nor disagree" response, which was consistent with item-level analysis for the validated construct.

The item "attempt to break down students' stereotypes" used a frequency scale ranging from "never" to "daily", with over 50% of respondents stating that they attempted to break down stereotypes approximately "once a week" to "daily". The remaining items within situated practice resulted in over 80% of respondents selecting a response of "strongly disagree" or "disagree". Within the situated practice construct, it was interesting that over 50% of respondents stated that they attempted to break down constructs, yet respondents disagreed in response to the situated practices of "taking inventory of other cultures/languages of their students" (79.9%), "cultivating a classroom promoting equality" (97.5%), "cultivating a classroom valuing diversity" (96.8%); "providing a space allowing learners to take risks" (90.0%) and "providing space allowing students a voice" (98%). Responses on this construct demonstrated that situational practices may not be in place and that there is a need to further investigate the results during the qualitative phase.

Correlational analysis (Appendix L) revealed that items within the situated practice construct were negatively correlated with items from the other constructs on both measures. Reviewing item-mean scores within situated practice, participants tended to disagree or reply

neutrally. For this reason, teacher situated practices were further investigated during the

qualitative analysis, as these relate to interactions within a global education contact zone.

Table 27

Percentage of Teacher Responses to Frequency of Teaching for Global Readiness in the Last Six Months (Scale 1)

Construct	Items on the TfGR Survey	Never	Less than once a month	Once a month	2-3 times a month	Once a week	2-3 times a week	Daily
Situated practice	Attempt to break down students' stereotypes.	7.1	10.4	14.9	20.1	14.9	12.3	20.1

Table 28

Percentage of Teacher Responses to Situated Practices in the Last Six Months (Scale 2)

Construct	Survey Items on TfGR	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
Situated practice	I take inventory of the cultures (languages, countries, etc.) represented by my students.	30.5	49.4	14.3	4.5	1.3
	I cultivate a classroom environment promoting equality.	67.5	30.5	1.3	0	0.6
	I cultivate a classroom valuing diversity.	66.9	29.9	2.6	0	0.6
	I provide a space that allows learners to take risks.	51.9	39	8.4	0.6	0
	I provide a space that allows students a voice.	55.8	42.2	1.3	0	0.6

Teacher Group and Individual Interviews. Situated practices include taking inventory of other cultures, promoting a classroom of equality, cultivating diversity, providing space for learners to take risks, providing a space for students to have a voice, and reducing stereotypes. Overall, teachers stated they usually knew a little about their students' backgrounds, but not always, as some were second generation students who already spoke English.

Some teachers were uncomfortable handling sensitive topics and cultivating a classroom valuing diversity. One high school English teacher stated that she was uncomfortable with discussing diverse cultures because "… if you bring it up every white head turns to the brown kid in the class ... but I'm not going to single that kid out any more than those kids are going to single him out". She followed up with a story about a boy with an accent who brought a cultural dish to share and how a fellow classmate said, "I'm sitting by you because I need to learn Spanish". The teacher reported being alarmed at the comment but, didn't know how to handle the situation and said nothing. She questioned what she could "say that would make him feel any better?" She followed up with a similar situation with bullying in the halls. When she sees it happen and stops it, she wonders if "I just made that situation worse for that kid? That is what I'm always concerned about. Because have I attracted more attention to it? Have I forced that kid to say, 'Oh, we were just joking' in defence?" To this note, she perceived a limited amount of secondary training on handling difficult situations.

Another teacher shared an example of situational practices among her colleagues. When visiting classrooms, she would notice all the black students were in the back of the room. When she asked her colleague if she realized this, the teacher said they had not. A second example given was coaches cutting the only black girl from the team. To explain her colleagues' actions,

this teacher explained that it comes from implicit bias and "the lens we've always had of whatever ethnicity that I am and I'm going to see the things the way that I've always seen."

Secondary teachers shared the complexity of school and community culture when talking about sensitive topics, while elementary school teachers shared how they embraced student diversity and how it added to learning. One elementary school teacher shared an activity where kids were encouraged to bring a bag of items representing them or their culture. This activity engaged the class in a discussion after learning about fellow Japanese students. The student told a story to the class about him living on a hill in the country, having to walk to schools, and sometimes jumping from roof to roof along the way. After hearing the story, individual students shared how they lived in the city and took a bus to school. Other students asked about walking to school every day. One student even brought up the Samurais and asked if they were from Japan. Through the sharing of experiences, the student felt included and motivated to participate in class.

Interestingly, after reviewing the results of situated practices, one high school language teacher tied the results back to virtual interviews within the transactional experiences construct. She understood why individuals would not use technology if teachers are not "allowing students a voice, because if you're doing interviews … then you are taking risks in a conversation with someone else. You could make a mistake, you could insult someone, you might have a problem with a mistake and valuing diversity."

Synthesizing the results, respondents demonstrated evidence of critical literacy and aspects of integrating global learning; however, transactional experiences were not practiced, and respondents "disagreed" to situated practices. These results provide insight to educators'

perceptions of teaching for global readiness and practices within the global educational zones at MCPS.

Research Question 2: How Do Educators Evaluate their Own Global Competencies?

Cain et al.'s (2014) Global Competent Learning Continuum was used to answer the second research question, "How do educators evaluate their own global competencies?" The GCLC includes 12 items within three constructs: dispositions; knowledge; and skills. Factor loadings did not align with the rubric's constructs, and results will be discussed based on new and originally validated constructs. All items on the GCLC required respondents to select a response that best describes their practice or belief; responses ranged from "nascent" to "advanced".

The GCLC was originally developed as a self-reflection rubric and had not been put into survey form. For this reason, the data underwent exploratory factor analysis. Results indicated two factors, instead of three, suggesting items are related to areas not three as validated by Cain et al. (2014). The first factor (N=9 items) contained one skill item and all the knowledge and disposition. Many of these items were related to equity practices and named as such. The second factor contained three of the four skills items and named global education practices. Educator mean scores for the equity construct was 3.33 (SD=3.33) equating to "progressing" in their practices. Mean scores for global education practices was 1.61 (SD=.82) equating to "beginning" in their practices.

The remaining section provides the results of item mean scores based on Cain et al.'s (2014) three constructs: disposition, knowledge, and skills.

Dispositions

Survey. There were two items categorized as dispositions (Table 29). The first disposition, "empathy and valuing multiple perspectives" had 77% of respondents identifying as either

"proficient" or "advanced". The item "commitment to promoting equity worldwide", had 90% of respondents identifying as "beginning", "progressing", or "proficient". Item-means for this construct suggest a possible difference between school-level practices of "empathy" and "valuing multiple perspectives", as well as potential subject-level differences with regard to "commitment to promoting equity worldwide".

Teacher Group and Individual Interviews. Much of the coded data for dispositions was double-coded for items within the TfGRS, and there were few stand-alone codes. Demonstrating a disposition to empathy and valuing multiple perspectives, one teacher stated that "my job is to give you (students) the perspective, to prepare you for someone's perspective, way of living, life, religion, calendar, practices, traditions, way of dressing, music that is completely different than yours".

Table 29

Percentage of Teacher Responses of their Perceived Global Dispositions

Construct	Item	Nascent	Beginning	Progressing	Proficient	Advanced
Dispositions	Empathy and valuing multiple perspectives.	0.6	4.5	18.2	46.1	29.9
	Commitment to promoting equity worldwide.	0.6	24.7	30.5	27.3	16.2

Knowledge

Survey. There were four items within the knowledge construct (Table 31). Overall, there was an even distribution of "beginning" to "advanced" responses on the item "understanding of global conditions and current events". Approximately 80% of respondents to the item "understanding of the ways the world is interconnected" perceived themselves as "progressing"

to "advanced" in this area. Almost half (45.5%) of respondents selected "progressing" in terms of "experiential understanding of multiple cultures", with 21.4% responding "proficient" and 13.6% responding "advanced". The last item, "understanding of intercultural communication", had 36.4% of respondents identify themselves as "beginning", 18.2% as "progressing", 27.3% as "proficient", and 18.2% as "advanced".

Teacher Group and Individual Interviews. ELL and World Language teachers saw the most cultural diversity within their classrooms and appeared to be the most well-prepared to work with diverse students. One teacher said "we have so many Mexican students that I've started learning the different parts of Mexico. Because if you are from Acapulco, that's very different than if you're from Mexico City". Another teacher noted that as a Spanish teacher, the class studies 21 Spanish-speaking countries, which made it easy to integrate global knowledge. An ESL teacher, she felt she received more preparation working with students from different cultures, backgrounds, and languages.

Table 30

Percentage of Teacher Responses of their Perceived Global Knowledge

Construct	Item	Nascent	Beginning	Progressing	Proficient	Advanced
Knowledge	Understanding of global conditions and current events.	0.6	25.3	26.6	22.1	24.7
	Understanding of the ways that the world is interconnected.	1.3	18.2	31.2	29.9	18.8
	Experiential understanding of multiple cultures.	1.3	16.9	45.5	21.4	13.6
	Understanding of intercultural communication.	0	36.4	18.2	27.3	18.2

Skills

Survey. Skills is the final construct on the GCLC, with six items (Table 31). The item "communicate in multiple languages" had a response distribution of 24% "nascent", 40.9% "beginning", 18.8% "progressing", 9.7% "proficient", and 6.5% "advanced". The distribution for the item "…create a classroom environment that values diversity and global engagement" was 12.3% "nascent", 27.3% "beginning", 26% "progressing", 19.5% "proficient", and 14.3% "advanced". In terms of "integrating learning experiences for students that promote content-aligned explorations of the world", the distribution of responses was 12.3% "nascent", 27.3 "beginning", 26% "progressing", 19.5% "proficient", and 14.3% "advanced". Over 70% of respondents identified as "novice" (56.5%) or "beginning" (20.1%) with regards to their ability to "facilitate intercultural conversations promoting active listening, critical thinking, and perspective recognition". Over 80% of the respondents identified as "novice" (67.5%) or "beginning" (16.9%) on the item "develop local, national, or international partnerships that provide real world contexts for global learning opportunities". For the item "develop and use appropriate methods of inquiry to assess students' global competence development", 70.8% of respondents identified as "novice", 13.6% as "beginning", 8.4% as "progressing", 5.2% as "proficient", and 1.3% as "advanced".

In summary, the largest percentage of responses for global dispositions fall between "progressing" to "advanced". The largest percentage of responses for knowledge items fell between "beginning" to "proficient", while knowledge skills fell between "nascent" to "progressing". These results are relative to understanding teacher perceptions of their global

competence and the supports that are needed to ensure students have high-quality teachers

providing an equitable education.

Teacher Group Discussions and Interviews. Some items are similar to the TfGR scale

and thus covered in the previous section. Specific to the item on communicating in

multiple languages, a middle school Math teacher felt that "what we need to look at is

definitely replacing the assumption that everybody is going to speak English".

Table 31

Percentage of Teacher Responses of their Perceived Global Competence Skills

Construct	Item	Nascent	Beginning	Progressing	Proficient	Advanced
Skills	Communicate in multiple languages.	24	40.9	18.8	9.7	6.5
	Create a classroom environment that values diversity and global engagement.	12.3	27.3	26	19.5	14.3
	Integrate learning experiences for students that promote content-aligned explorations of the world.	26	20.1	26.6	18.2	8.4
	Facilitate intercultural and international conversations that promote active listening, critical thinking, and perspective recognition.	56.5	20.1	12.3	9.7	0.6
	Develop local, national, or international partnerships that provide real world contexts for global	67.5	16.9	8.4	2.6	2.6

learning opportunities. Develop and use appropriate methods of inquiry to assess students' global competence development.	70.8	13.6	8.4	5.2	1.3

Research Question 3: What Types of Supports do Educators Need in Order to Deliver an Equitable Education for All Students?

Teacher group discussions and interviews with K-12 educators and district administrators provided insight into the supports needed to deliver an equitable education. The section begins with educator perceptions of equity and then discusses teacher perceived supports Specifically, aiding educators in addressing sensitive topics; working with culturally and linguistically diverse school communities; and helping students develop their identity. The section concludes with the importance of support from central and school administration when creating an equitable education.

K-12 Educators' Perceptions of Equity

Participants were asked to define "equity", furthering an understanding of current equity perceptions and practices. An emerging theme of equity was the idea of access to appropriate resources ensuring individual academic success. Participants shared how they tried to understand the difference between equity and equality. An ELL elementary teacher explained that "equity meant removing barriers from the students who are struggling, so all students have an equal opportunity to learn the materials." She continued by explaining that sometimes a teacher may have to devote more attention to certain students or things, "so that they're (students) held accountable for their true potential; and they are not limited by what our perceptions of what they

can perform, based on certain difficulties they're going through." The high school Spanish teacher shared her recent presentation on Equity and Equality, from which she read from her PowerPoint. "Equity therefore is the process and outcome of giving every student what they need and when they need it."

Examples were often used to make sense of equity and equality. The ESL elementary teacher explained that "my special needs students have different accommodations to make the curriculum accessible to them. So just making sure that when they're trying their best, they can access the curriculum just like the other kids do. Equal opportunities." The high school English teacher defined it as "treat(ing) everybody fair, but fair isn't equal. I teach co-lab, so fair is not equal. What I do for this child is not what I do for the other child because they need something different."

Resourcing Needs

This section outlines the various supports identified by educators needed to ensure an equitable education. Examples included human resources, time, materials and targeted professional development.

An emerging theme in the teacher interviews and group discussions was the need for additional teacher support, particularly with ESL, collaborative, and large classes of CLD students. An elementary teacher felt additional people power would be helpful. An ESL teacher shared how she watched "classroom teachers scramble and take work home every single day", thus additional human resources would take some of the workload off teachers. Raising teacher pay was identified as important in the country, as well as for equity initiatives "because if we're not valuing the people who are in front of our students enough ... especially in our public schools

in low income areas…What are we saying?" She concluded by saying that valuing teachers will result in teachers valuing their students.

Another high school teacher identified the need for more people power or human capacity, so that her "… co-labs [would] be under 25 [people]" as "it's really hard when you have that many different kids on so many different levels, I can't function." A high school teacher expressed how "language classes are completely overwhelmed. PE classes, Math, and History." She explained she understood it was a money aspect and questioned whether funding should come from consolidating central office positions and hiring more teachers with the money.

When thinking about her ESL students, another teacher questioned whether human resources, such as a traveling teacher, could aid mainstreamed newcomers who speak very minimal English. When discussing current resources to support ESL students, a high school teacher commented "… well every test is a reading test. But there are three literacy coaches for the whole district. Why can't that be a point four position of these in-house literacy and language people. Even if you only have nine kids in your building that need level three or level four ELS services. Or level 1, 2, and 3 ESL language service. That's indicating you need somebody in that building. Who cares if they declined those services, they still need the support? What are we doing for those kids?"

Having time to reflect and plan was identified by teachers as a need. An elementary teacher commented on how she felt like she was flying by the seat of her pants. Although she has many lesson ideas, the time to create, plan and implement is just not there. Additionally, inclement weather or other factors sometimes cut into professional development days, which may be the time needed to collaborate on a large project. In conclusion, teachers felt that one of the hardest things was to attend PD and not have the time to digest and apply what was learned.

Finally, teachers in some schools felt they lacked the resources to effectively teach their students. For example, one middle school teacher felt a step towards equity was to "… direct resources to the students with the greatest needs". Two high school teachers shared their frustration with getting secondhand books from other schools. Educators questioned where they could get different resources within the greater community, as the perception shared was resourcing was inequitable between schools in MCPS.

Professional Development Needs

Several themes emerged where teachers needed additional professional development to ensure equitable classroom practices. Examples of targeted PD included equity and diversity training, identity development, and trauma informed care.

Equity and Diversity Training. MCPS offered equity and diversity training to school administrators and some teachers. According to one educator, "these were not mandatory trainings, and individuals who most need the training do not go or are not invited." Another educator stated the training may be effective to help struggling teachers with equitable classroom practices. Due to district initiatives, one teacher stated, "I think that there is increased awareness now. I don't think that it is even coming close to being where it needs to be, but at the same time at least there's an acknowledgement that, 'Hey, we need to be talking to teachers about this, not just students….So that exists in our building, at least on the surface."

Additional training to handle different situations was identified as a needed support. One former elementary teacher felt teachers were "… more open to it"; however, she also questioned "how do I get more support? What do I do? How can I be intentional in reaching students of different backgrounds and cultures? They [teachers] want to know how."

A high school English teacher expressed her discomfort in addressing sensitive topics and

singling out any student. She explained that she needed to hear from teenagers about how they feel teachers should handle various situations because she felt "many teachers find teenagers are in a position where we don't really know what they want us to do…in secondary school it is mean, harsh and intentionally psychologically hurtful."

Identities in Global Educational Contact Zones. Global education contact zones are where students and teachers of diverse cultural backgrounds and identities interact. In this study, identity was an emerging theme with educators providing examples of how identity affected equity practices and teaching for global readiness.

Educators participating in the interviews and group discussions identified supports promoting teachers to reflect on their own identities and how it affects pedagogical practices. A middle school teacher stressed the importance of identity, especially for students and faculty of color. She said that "as a faculty [member], me being black myself, walking in and seeing three other African Americans out of a faculty of 100 was a red flag for me. Some kids need to identify with their own cultures by seeing someone like them."

Another high school teacher discussed the role bias plays in identity and actions. When talking about identity (gender, ethnic, sexual, etc.), she said, "… sometimes just having a safe place to have the dialogue is a starting point, but unfortunately, when you have things like racism that has been institutionalized in education and so many other parts of our government and way of life. How do you not only teach the students, but how do you work with your colleagues to address, 'I have this bias, I need to see outside of it and then create a classroom that's conducive for my students'?". Asking a secondary teacher whether MCPS offers an equitable education, she said,

No, because we're staying away from their (student) identity and what are they bringing to the table. Even as adults, because we live in an adult world and our adult world is full of diversity. From having conversations, to problem solving, to collaborating, in schools we're not intentionally doing that, we're shying away from... we're not shying, but we're not pushing it either, including their cultural background.

One participant shared a story demonstrating the importance of student cultural identity. Her South African student brought a statue to school and explained she was a princess of a village and spoke of her descendants and culture. At five, this girl knew "…her background, the importance of who she was, her identity." An elementary teacher spoke of EL students trying to negotiate their identities as a Latinx and American.

… kids will get kind of defensive if you say that they're from Guatemala, but really their family is from there. They say 'I'm from here! My parents were born in Guatemala.' Yeah, but then if you say something about Guatemala, they'll be very quick to tell you their parents are from Guatemala. So, they're very quick to claim their parent's nationality, but they're also defensive about their own. You know, where they're from and you knowing that they're US citizens… it takes a while for them to open up about papers and issues about papers, but they do sometimes eventually come around to talking about that. And it's interesting who they judge as safe or not safe for those conversations.

A second example she gave regarded a student's language, which was associated with her identity. She shared how a level-one EL student "… eventually started telling people to stop speaking Spanish to her. Because they were trying to help her—you know? She was like 'I'm speaking English now, and I want to learn more English so stop speaking Spanish to me!'"

Race/ethnicity and gender identity trainings were identified by another teacher, who asked, "How do we have those conversations and saying, if I am Black, we can go ahead and teach

about the Caucasian, or if you're Caucasian, how are you incorporating Black history? Even having conversations of identity this year of a boy who didn't know what he was feeling. I wasn't equipped about talking about the gay community, or how it is to be gay or lesbian, it was hard to have those conversations because I don't know, what do I say, how do I say it? Will I get in trouble for this? I'm just not equipped."

The teacher continued by stating that trainings should show teachers how to "incorporate culture without being biased or without being offensive" and doing that "in a positive way as teachers". Another teacher stated she would "… love some training on how to incorporate some different stuff or even a cultural studies survey class" so that students could learn "how to talk to somebody from India… having those resources in front of us."

Parental influences on student identity-development was an emerging theme in the qualitative data, and teachers often gave examples of times they could "hear their parents speaking through them". One example of parental and cultural influences on student identity is depicted through the words of a high school teacher, who said, "I had a kid the other day say, 'Yeah, I don't like his girlfriend. She's black. I was taught to keep to my own.' They're saying this to an adult." She continued to explain community identity by stating that "if you look at some of these rural areas, with some of them, we're just going to stick within our own subsets. It's comfortable and a lot of it is based on race. It's socioeconomic, but it's also race." An elementary school teacher also acknowledged peer and family influences on identity formation, stating that she liked the elementary curriculum "… in terms of what they're learning, but I think you could have so much more fun with it and it's easier at that age because they're not so shaped by peers and parents." A second example was shared by an elementary teacher who said, "lot of the kids, especially elementary school kids' thoughts are a lot of their parents' ideas... A lot of

them are their parents' ideas or things that they've heard at home." She continued with an

example of a student who refused to watch Obama's inauguration and kept his back turned to the

screen. As a small child acting this way, the teacher felt it was a display of the parent's values.

A final example comes in the form of one participant's story of an EL student, retained in

grade 6. When his teacher asked his plans after middle school, the child replied with the response

"what is the point? I don't care." A student sitting next to him replied, 'It's so important, you

have to get a good education to get a job?" The teacher questioned how to work with students

and parents with strong roots of tradition and generation. For example, a female high school

student said she didn't care about going to school because she was "just going to be at home

taking care of the kid." The teacher was concerned about "how beliefs are passed down to their

children and they're set in this mindset and they believe it; they feel like it's their sort of

destiny." She continued to explain that "until you educate the parents, but even if you can

educate them and say, 'You can be anything you want, you can do this. It might be hard, but if

you want to.' Some of them [students] will break free and eventually you hope that the cycle will

end." She went on to say:

> … another thing though about even recognizing or doing things to combat the negative
>
> tendencies that we have, we're only the school system and you can't recover the
>
> influences of family life. … sometimes for students to succeed and rise to another
>
> higher socioeconomic status, to go to college …takes breaking those family or social
>
> ties because otherwise, that's too strong of an influence. Some people can overcome
>
> obstacles or barriers to be able to do things that their family and friends haven't ever
>
> done before, but research shows that it takes breaking some of those…

During a secondary teacher discussion, two participants commented on how language used in textbooks or math problems have underlying messages about student identity. One high school teacher questioned whether word choice in our examples or word problems in Math are highlighting positive attributes or are they specific to a culture, gender, or job.

Reflecting on the survey, one individual mentioned the item related to a library of resources. She felt this was interesting because the majority of textbooks portray images and families of a certain ethnicity or gender. A middle school teacher followed by sharing an example of the rewriting of story problems; "everything stayed intact except for the names. And then we started seeing instead of John and Julie, there was this intentional change to Shaniqua and Min." Changing the names within word problems was not considered an inclusive practice.

Student Global Exposure. Teachers discussed the similarities and differences between students' local and global exposure. As one teacher explained how students in rural areas have not been to the beach, so it takes a lot of visuals and explaining. In terms of global exposure, a secondary high school teacher explained that one skill is the ability to make connections, because a student who is globally aware is more able. She also felt students with global exposure make stronger connections and have more to say than those unaware of local and international events. The elementary ESL teacher had similar perceptions, stating that "immigrant kids have a lot of knowledge about how to navigate, how to get their needs met in new situations, how to get by when they don't understand a language. They have a lot of problem-solving skills, and they can apply that in very foreign situations. They know how to try to get by in academic situations and get good grades without understanding a lot of things." She also acknowledged how "… their experiences give them struggles too, that the other students don't have."

Classrooms contain students with diverse experiences and knowledge. Developing professional development focused on the *Learning from Differences Model* (2014) is one method for achieving equity, as students learn from other experiences. Technological advances make it possible to engage students in virtual field trips and offer opportunities not otherwise available to students.

Trauma Informed Care. Trauma informed care training was another area an ESL teacher felt was important because many of her ELL students experienced trauma in their life. When asked if she was equipped to work with students who had suffered trauma, she said, "I didn't know anything about trauma informed care when I was coming in, and I was faced with a lot of students who were dealing with trauma. I did the best intuitively that I knew how to do. But now I'm learning what behaviors come from that, and then how to address them based on the root cause." With ELL students mainstreamed into classrooms, this type of training may need to be scaled up to ensure that all teachers are equipped to give trauma informed care.

Teacher professional development has been considered by MCPS, and a central office administrators provided an outline of equity initiatives rolling out over the next three years. During the first year, MCPS is devising new teacher trainings that infuse diversity and equity checks into instructional practices and community relations. The goal is to implement a process where all MCPS staff members are trained on topics related to equity. By the second year, the district hopes to partner with local colleges/universities to develop equity courses and professional learning opportunities. Finally, during the third year, MCPS plans on developing an equity accountability measure related to professional performance indicators for all staff categories.

Equity and Administrative Leadership

Teachers were the focus of the research; however, administrative leadership emerged as a theme in the qualitative data analysis. Considering efforts to create an equitable education, central administration is a major support in terms of the types of initiatives and resourcing they provide schools and students. A middle school teacher said,

> we're always addressing what we can do to better teachers, but we're rarely addressing what we can do to better administrators who may have all the power, who have all the ability to make plans and force teachers to do things that we know are not- research-based or best practice. But there's been very minimal focus, in education reform, on what we are doing with administrators. The administrator builds the schedule… that schedules testing… that finagles who is going to test and who is not…. We have to pay more attention to who (administrators) can plan and think systematically versus who puts on a good show in an interview.

During the small group discussions and interviews, educators questioned the school district's equity initiatives stating it "may be more lip service than actual action or practice." For example, a middle school teacher spoke of county leadership and equity initiatives, as described below.

> County leadership falls into that same trap where it sounds like it's the right thing to talk about. It sounds like it's the right thing to have a committee on and how deep down does that desire to go to identify what equity is, and who was being adversely affected in any given situation. Sometimes it is very difficult to believe that there is a genuine interest in true equity versus lip service.

For example, the school calendar aligns with Christian holidays, and a high school Spanish teacher questioned this, asking "what are we going to do to help out not only the students that observe other holidays, what are we going do to make the calendar more equitable, and what are we going to do for our employees who do not celebrate or observe Christian holidays and they have to take personal days off to observe their holidays?" A middle school Math teacher replied, "I'm one of those people that would be like, 'Okay, let's do it. Let's go to year-round school.' But in the back of my mind… that's never going to happen. Because, how do you make those changes occur when you have people who say, 'Yes, I know that this is the right thing to do, but....What a huge blast of communication that is to the entire universe, that, yes, we have these committees…we are going to celebrate diversity… and we are going to be an inclusive school… and yet here's the calendar."

School and central office leadership are important factors in divisional equity practices. MCPS has equity initiatives and professional development planned with partner organizations. Professional development focused on equity, diversity, identity development, and trauma informed care are specific areas educators identified as relevant. Ensuring all students receive an equitable education requires all teachers engage in professional development and a strong leadership team committed to making change (Darling-Hammond, 2011).

Research Question 4: To What Extent Does the Teaching for Global Readiness Scale Serve as a Screener for Identifying Professional Development Needs on the Globally Competent Learning Continuum?

A correlational analysis was conducted to determine relationships between the measures' items. When evaluating correlations, Polit and Beck (2006) identified a correlation coefficient of 0.7 or higher as demonstrating a strong correlation in social research. Correlations between .50-

.70 are considered moderate, those between .30-.50 are low, and those below .30 are negligible. Using Polit and Beck's (2006) standards, a summary of correlations between EFA constructs (Table 32) as well as a correlational table (Appendix L) of 31 items.

Confirmatory factor analysis revealed items from the TfGRS did not factor into constructs aligned with the validated measure and the CGLC factored into two constructs. To act as a screener, constructs and items from the TfGRS and GCLC would need to converge. From EFA, constructs were created based on the factor loadings for both measures. A correlation analysis assisted in understanding the relationship of constructs between and within the two measures. Overall, results of the correlation reported a weak to moderate relationship between constructs, with only one item not correlating at $p < .001$ or $p < .05$. Interestingly, the construct Situated Practice had a weak negative correlation, which was statistically significant for all constructs except for Transactional Experiences. A moderate correlation existed between IGL and: Equity (r=.54), Global Ed (r=.54), Critical Literacy (r=.62), and transactional experiences (.48).

Table 32

EFA Constructs Correlation Table

	Equity	Global Ed.	Critical Literacy	Situated Practice	Integrated Global Learning	Transactional Experience
Equity	1					
Global Ed	.53**	1				
Critical Literacy	.37**	.35**	1			
Situated Practice	-.35**	-.19*	-.20*	1		
Integrated Global Learning	.54**	.54**	.62**	-.28**	1	
Transactional Experience	.31**	.53**	.42**	-.13	.48**	1

*Note: correlating at $p < .001$** or $p < .05$*

Item-Mean Correlations

Using the item means, a correlation table was created to determine the relationship between items. Below is a summary highlighting some relevant correlations; however, the full table can be found in the Appendix L.

TfGRS Situated Practice

Correlating items from SP resulted in correlation coefficients ranging from $r = -.18$ to $r = .77$. A moderate to high correlation existed between SP2 and SP3 ($r = .77$), SP4 ($r = .51$), and SP5 ($r = .62$); SP3 and SP4 ($r = .60$), and SP5 ($r = .68$); and finally, SP4 and SP5 ($r = .65$). Interestingly, SP6 had a low negative correlation with the other five SP items, ranging from $r = -.18$ to $r = .28$.

TfGRS Critical Literacy

Correlating items from CL resulted in low to high correlations ranging from $r = .48$ to $r = .77$. Low correlation existed between CL1 and CL3 ($r = .49$); CL5 ($r = .48$). Moderate correlations existed with CL2 ($r = .59$) and CL4 ($r = .56$). A strong to moderate correlation existed between CL2 and CL3 ($r = .77$), CL4 ($r = .75$) and CL5 ($r = .62$). Item CL3 strongly correlated with CL4 ($r = .77$) and moderately correlated with CL5 ($r = .64$). Finally, CL4 was highly correlated with CL7 ($r = .72$).

TfGRS Integrated Global Learning

Correlating items from the IGL construct resulted in low to moderate correlations ranging from $r=.32$ to $r=.54$. There was a low correlation between IGL1 and IGL2 ($r =.50$), IGL3 ($r =.32$), IGL 4($r =.50$). A low to moderate correlation existed between IGL2 and IGL3 ($r =.42$) and IGL4 ($r =.54$). Finally, a low correlation existed between IGL3 and IGL4 ($r =.49$).

TfGRS Transactional Experiences

Correlating items from the TE construct resulted in negligible to low correlations. There was a low correlation between TE1 and TE2 ($r = .32$), TE3 ($r = .17$), and TE4 ($r = .23$). Moderate to low correlations existed between TE2 and TE3 ($r = .62$) and TE4 ($r = .34$). Finally, there was a weak correlation between TE3 and TE4 ($r = .34$).

GCLC Dispositions

The two items within the disposition had a low correlation ($r = .40$), at $p < .01$ with each other. There was a moderate correlation between D2 and S3 ($r = .50$); however, item D2 had moderate correlation coefficients, ranging from $r = .50$–$.52$, with all four knowledge items on the GCLC. The correlation coefficients for the two disposition items with other construct items had low correlations while still being statistically significant at $p < .01$ and $p < .05$.

GCLC Knowledge

Correlating the items in the knowledge construct resulted in low to moderate correlations, ranging from $r = .44$ to $r = .61$. The correlation of knowledge items with skills resulted in a range of negligible to moderate ($r = .16$–$.55$). The items with a moderate correlation consisted of K1 and S3 ($r = .50$); K2 and S3 ($r = .52$); and finally K3 and S2 ($r = .55$).

GCLC Skills

Correlating items in the skills construct resulted in low to high correlations, ranging from $r = .17$ to $r = .73$. Item S2 and S3's high correlation of $r = .73$ may suggest similarity in the question item and encourages further investigation.

TfGRS and GCLC

Reviewing the correlation table for moderate to high correlations between items on the TfGR Scale and GCLC offered further insight to areas where the two measures may have

similarities. There were only two instances where the correlation was moderate. Item S2 from the GCLC and item IGL2 from the TfGR scale showing a moderate, but positive, correlation ($r = .53$; $p < .001$). Item S2 also had a moderate positive correlation, with CL1 ($r = .55$, $p < .05$). Item S3 from the GCLC had a positive, moderate correlation with item IGL2 ($r = .54$, $p < .001$).

Conclusion

Three data sources used to collect information on the study included a survey, teacher individual interviews and discussions, and central office administration questionnaires. The survey included items from the Teaching for Global Readiness Scale (Vessa, 2016) and the Global Competent Learning Continuum (Cain et al., 2014). Data from K-12 educator discussions and interviews served as a second source of data, while administrator questionnaires as a third source. Having three unique data sets allowed for deeper exploration into questions emerging from the survey and educator interviews. Based on the data, there is potential to triangulate the findings while answering the research questions.

The TfGRS and GCLC were used to investigate educator perceptions of teaching for global readiness and their global competencies, respectively. Overall, teacher survey results suggested that educators did not agree that they engaged students in certain practices, and if they did it was quite infrequent. In terms of global competence, teacher survey results suggested they were "beginning" to "proficient" in their competencies. The two measures did not converge concluding the TfGR scale is not an appropriate screener for the GCLC. The use of these measures provides additional information on their usefulness and validity. Converting the GCLC to a survey made it possible to quickly gather information about teacher perceptions, and this measure could be useful to MCPS and other districts looking to advance equity initiatives.

Emerging themes from the qualitative analysis supported how global educational contact zones present opportunities to further develop student and teacher identities using Messiou and Ainscow's (2015) *Learning from Differences* model. This model challenges teachers to engage students in their lessons by talking about diversity, developing inclusive practices, and learning from experiences. Teacher examples of students learning from diverse classmates demonstrate how individuals learn from each other and begin a dialogue linking to other content and knowledge sources. These experiences have the potential to shape student and teacher identities; however, familial, and cultural identities remain strong pressures in student identity development. Furthermore, strong central and school administration were seen as needed to support teachers in providing an equitable education.

Chapter 5: Discussion

This chapter is organized around the conceptual framework and the need for global education to achieve educational equity. The discussion examines the study findings within the context of the literature on equity and global education followed by a discussion of the instrumentation. Next, the chapter includes a summary of how the study findings can inform educational policy, and concludes with limitations, areas for future research, contribution of findings, and recommendations.

Equity

Teachers in MCPS perceived classrooms were becoming more diverse; consistent with IES data and findings from the literature review. Messiou and Ainscow (2015) challenged teachers to account for the diversity in their classes; however, in this study the mean score for teacher situated practice of taking inventory of student cultures equated to "neither agree nor disagree". This may be a sensitive question yielding a neutral answer, yet through interviews and discussions, it was perceived there was a lack of equity practices among colleagues. The following sections provide an overview of MCPS equity practices described by teachers using existing frameworks.

Dover's Dimensions of Teaching for Social Justice

Dover's (2013) Dimensions of Teaching for Social Justice served as a tool to compare equity practices, particularly within the curriculum, pedagogical practices, and social action.

Curriculum. Elementary school teachers and history teachers easily integrated personal and cultural identities within the curriculum. An elementary school teacher shared a story about how during a video on pollution in China, one student spoke out stating they understood what they were saying in the video—this led to students asking questions about life in China. Another

child from Japan told classmates how he walked or jumped from roof to roof when going to

school, leading to a conversation about Japanese Samaria and Ninjas. These examples are in-line

with the OECD's equity practices of "responding to diversity" and "providing for the successful

inclusion of migrants and minorities within mainstream education". Additionally, the findings

are consistent with Lopez (2017) who reported that teachers building on students' prior

knowledge and validate student responses strengthen student-teacher relationships and helped

develop student identities promoting achievement outcomes. Teachers incorporating student

identities also created space for cultural flows where students learn knowledge, skills, and

dispositions for living in a global society (Ryoo, 2009). Finally, results of the study found

teachers integrating student culture and different perspectives into a lesson promoted complex

discussions among peers while developing student global competence (OECD, 2018).

Pedagogy. Pedagogical practices outlined by Dover included: supporting classrooms by

embracing multiple perspectives; emphasizing critical thinking and inquiry-based instruction;

and promoting student's academic and personal growth. This study found mean scores of

teachers analyzing content from multiple perspectives and engaging students in inquiry-based

instruction as a practice equating to "once a month".

Teachers participating in group discussions and interviews noted an interest working with

diverse students and shared the importance of classrooms supporting multiple perspectives. For

example, elementary school teachers integrated multiple perspectives when discussing texts from

the perspective of an American slave. On the other hand, a secondary English teacher did not feel

comfortable teaching a Langston Hughes poem focusing on bi-racial identity.

Through district-level project-based learning and one-to-one initiatives, educators

perceived students engaged in critical thinking and inquiry-based instruction. In terms of

promoting students' academic, civic, and personal growth, a secondary ESL teacher felt that the state test dictated what the student could write and did not allow for the integration of the student's culture and personal growth; this is consistent with neo-liberal reforms focused on assessments (Pike, 2009).

Social Action. Social action is the final dimension and includes teachers: considering themselves activists; raising student awareness of injustice and inequity; and promoting students' social actions. Again, there appeared to be differences in the comfort level of elementary and secondary teachers when addressing topics of injustice and inequity, which is similar to Aronson and Laughter's (2016) findings. For example, when witnessing bullying in the high school hall, one secondary teacher spoke of her discomfort in handling the situation, and questioned whether her intervention would make things worse. A high school language teacher stated that it was her job as an educator to teach students and be a social activist, by bringing students' attention to inequities and inequalities, and when possible promote students' social actions.

Evaluating data through an equity lens enabled a better understanding of the global educational contact zones in MCPS. Teachers discussed types of socio-economic and cultural diversity within their classrooms and acknowledged a growing Hispanic population in the district. Consistent with Doran's (2014) findings, teachers in MCPS felt they were unprepared to work with diverse students, as they felt they had limited knowledge and experience working with culturally and linguistically diverse (CLD) students (Hurtado & Guillermo-Wann, 2013; Avalos, 2011; Daniel & Friedman, 2005).

The Global Education Contact Zone

Global Competencies

Like global education, global competence (GC) does not have an agreed-upon definition; however, Asia Society and the Council of Chief State School Officers (ND) identified specific knowledge, skills, and values are associated with global education. The Global Competence Learning Continuum (Cain et al., 2014), a self-reflective measure turned into a survey for this study, included knowledge, skills, and dispositions aligning with Asia Society's global competencies. Little research on teacher perceptions of teaching for global readiness and their own personal global competencies exists (Siczek and Engel, 2019) and measuring teacher-perceived global competencies provided additional insight on how teacher competencies influence pedagogical practices.

Cogen et al. (2000) identified several practices identified in globally minded teachers, many aligning to survey items. For example, the practice of emphasizing student critical thinking of media, occurred approximately once a month in MCPS, as did activities analyzing agendas behind media messages. Increased attention to global issues was another practice identified by Cogen and survey items related to engaging discussions about current events or integrating global learning within the curriculum were reported as occurring once a month in MCPS. This may be due to teachers reporting they were "progressing" in understanding how the world is interconnected.

Asia Society and the Council of Chief State School Officers (ND) identified several characteristics of a global education. Knowledge of other regions, cultures, and global issues was the first characteristic. In this study, teachers reported "progressing" in understanding global conditions and current events and "beginning" with their ability to communicate in a second

language; a second characteristic of global competencies. This finding was consistent with Wang et al. (2011) reporting teachers lacked the knowledge, skills, and dispositions to prepare students for a global workforce. Language barriers between teachers and students was one explanation for poor academic achievement among ELL and immigrant students (Doran, 2011). Hiring more multi-lingual teachers is one strategy to decrease language barriers; however, advancing policy to ensure fluency of a second language may increase future candidates who are multi-lingual.

Another characteristic of GE is value and respect for other cultures, which link to survey items: creating a classroom environment valuing diversity and global engagement; and facilitate intercultural and international conversations. Teachers reported their skill development was progressing and beginning respectively on these two items, with world language and elementary teachers engaging in this practice most. During interviews and group discussions, teachers shared how student personal experiences enhanced class discussions, which enabled students to connect their lives to content while empowering them (Aronson & Laughter, 2016).

Teachers with diverse students may have an opportunity to facilitate intercultural and international conversations; however, data from this study suggests there is a missed opportunity in some grade levels. For example, secondary teachers acknowledged some discomfort speaking about sensitive subjects like equity and diversity, which may unintentionally exclude marginalized or ELL students from the lesson and be a missed learning from differences opportunity.

Results of the study provide MCPS with baseline data on teacher global competencies and additional information on this tool as a survey measure. Many of the items on the GCLC may need to be redeveloped into new survey questions if it is to be used in this format again. For

instance, the disposition of "empathy and valuing multiple perspectives" could be separated into two items as it is a double-barreled question.

Survey Instrumentation

Items within the TfGRS and GCLC did not align to the original constructs and thus did not meet the criteria for measure conversion. Personal correspondence with Julie Keane at Participate[©], the researcher learned items on the TfGRS were modified slightly and a validation study was not conducted (Personal correspondence, May 2018).This study contributes to further understanding the TfGR Scale's reliability and offers additional data for comparing future research using the measure.

The small non-representative sample was a limitation and may have affected the factor loadings; however, statistical tests found the responses were enough to conduct factor analysis. Based on the factor loadings, it may be worth rewording questions to align with district initiatives that are not explicitly linked to a global education program. For example, MCPS is a one-to-one district, and questions about technology use may want to be modified to represent students connecting within and between schools for research projects. With PBL initiatives, students could use technology to connect with experts, which may be more specific than virtual interviews. Students communicating with technology are gaining global skills by speaking online to students in other parts of the school or district.

Item correlation analysis offered insight into the relationships between the two measures' items. An interesting finding was many of the situated practice items were statistically significant but negatively correlated with items on the GCLC, except the item "reduce stereotypes", which was statistically significant and positively correlated with the GCLC items. Items within the critical literacy construct were also positively correlated to the GCLC.

Results of CFA and EFA added to the literature by reporting the reliability of the TfGR scale and the GCLC, a rubric in true form. Additionally, teacher feedback from interviews and group discussions informed the need to reword questions with terms used within MCPS. Further discussion of updates to the instrument is found within the future research section.

Findings and Educational Policy

National and State education policy have not always valued world language education, as demonstrated in House Bill 2125, proposing that students can earn an advanced diploma by reducing world language courses and enrolling in advanced coursework in career and technical education (HB2125). Encouraging early language learning will increase the number of bilingual graduates who may return to the classroom as teachers.

Global education is sometimes seen in contrast to patriotism (Cogan, Grossman, and Liu, 2000) and it is relevant for policy makers to assess how to balance global education with patriotism in effort to accommodate a growing diverse K-12 student population.

 Creating national or state global education standards, offers opportunities for developing or honing reliable and valid measures of teaching for global readiness. Setting specific standards offers a common language among stakeholder and further helps define teaching for global readiness and measuring global education student outcomes. Through continued interest in measurement tools investigating teacher equity and global education practices, is one way to demonstrate interest and importance in developing high-quality teachers prepared to work in a diverse, and since 2020, virtual classrooms.

Study Limitations

Madison County Public Schools was selected for this study because of the district's focus on equity and the initiatives it has that are aligned to global education practices. There were

several limitations to the study that should be considered in future research. First, the survey

used language representing one way of conceptualizing global education with terminology that

may be unfamiliar to participants or differ by culture or experience. Conducting the study during

the last month of school when teachers were either preparing students for the state exam,

administering the state exam, or attending school functions such as graduation, may not have

been the best time The TfGRS asked teachers to estimate their practices in the last six months,

which made the May/June timeframe appealing, as they could reflect on the last semester of

school. In the future, it may be worthwhile to conduct the survey in December, after the first

semester of school, as the data could guide second-semester goals or practices.

School administrators acted as gatekeepers, forwarding the survey to teachers in their

building. Some school principals confirmed that they sent the survey, while others did not send

confirmation, making population and sample estimates difficult. Factoring in the population of

participating schools, a sample size of at least 265 was needed; however, the sample size of this

study had 154 survey respondents. Furthermore, out of the 24 interested participants, only 8

individuals attended an interview or small group discussion. One teacher mentioned her

disappointment in her inability to discuss global education and equity with other teachers;

however, she said those individuals probably didn't even take the survey. Another teacher

wished there were participants with opposing views.

Sampling bias served as a limitation to the survey, as school administrators decided

whether to forward the survey on to teachers and those receiving the survey self-selected to

participate. Participants who completed the survey and participated in the interviews may have

an interest in teaching for global readiness, despite a high percentage of educators reporting no

global education experience on the survey. Educators participating in the survey somewhat represented MCPS in that the majority of participants identified as White and female.

Future Research

Global education, global competencies, and equity were the overarching themes of this study. Presently, there is no agreed-upon definition of global education and there are few tools available to measure educators teaching for global readiness or perceptions of their global competencies. Future research can use this study to further investigate survey constructs and items with other populations and modify the existing instruments to align with State or district educational goals. Furthermore, the Equity in Education conceptual framework may be used to guide future studies.

Survey Instrument

One survey modification would be to reorder the response choices with positive responses first, to align with survey theory. A second modification would be to identify misleading or unclear words with the potential to alter survey results and reword appropriately. For example, the item "Utilize technology for virtual interviews (with experts, community members)" may affect results because of the use of "interview" instead of "meeting". Teachers utilizing project-based lessons may use technology to connect with an authentic audience but, see it more as a meeting than an interview.

The GCLC constructs of knowledge, skills, and dispositions factored into two constructs, named equity practices and global education. Further investigation of equity and global education practices can facilitate further development of this measure. If redeveloping the GCLC, it may be worthwhile to integrate situated practice, as items from the TfGR scale related

to this construct was not found in the GLCL. Adding this construct may aid teachers in developing their situated practices making a more equitable learning environment.

Finally, investigating factor loadings and item means would provide additional information on originally validated constructs on the TfGR scale (Vessa, 2016) or the GCLC (Cain et al., 2014). Future research could also examine the mean score of teachers' situated practices and whether a negative correlation exists between situated practice and other constructs. Another area to investigate are item-means for five of the six items within critical literacy, as they were identified as having possible differences between school and subject levels. Additionally, teacher interviews and group discussions revealed potential differences in global education and equity practices between elementary and secondary teachers. Future research investigating subject and school level differences would provide additional insight into equity and GE practices in various classroom contexts. Furthermore, results of the study could inform policy or resources to advance teacher competencies and practice.

Political Climate and Teaching for Global Readiness

Tension between global education and nationalism exists in the U.S. and further investigation is needed to learn more about teacher perceptions of community/school politics and the decision to teach specific content or discuss sensitive topics. Findings of the current study suggest a potential difference between elementary and secondary teachers' comfort in addressing sensitive topics. Investigating differences between school levels may provide insight to programs like social-emotional learning that may teach skills to handle sensitive topics. Further exploration of how teachers perceive the impact of school/community politics on how and what they teach, would further aid in the identification of barriers advancing global education practices.

Contributions of findings

This study contributed to the limited body of research on global education measures, particularly the TfGRS and GCLC. Participate© uses the TfGRS as a pre-post measure of teacher global practices. Presently, this is the only study investigating the reliability of the TfGR scale with teachers not participating in a global education program like Participate©; however, some participants taught an IB course. Future research investigating educators' teaching for global readiness should conduct a confirmatory factor analysis on the TfGRS to determine the alignment of items within the originally validated constructs. Depending on district goals and initiatives, some items on the TfGRS may need to be updated to reflect transactional experiences; not necessarily using technology to connect with someone internationally, but rather within the school district. Modification of the measure would require tests of validation; however, school districts may find the measure more aligned to their goals/initiatives.

This is the first known study to convert the GCLC into a survey format. Participants acknowledged that the items on the GCLC were wordy. To reduce the wordiness of the items, future studies may want to consider creating new questions for double-barreled items on the GCLC. Through confirmatory factor analysis, future research can also investigate the extent to which the items load into the constructs of dispositions, knowledge, and skills or remain as two constructs. Finally, it may be worthwhile to include items of situated practice on the GCLC to help teachers reflect on situated practices.

Replicating this study with a larger and more representative population would provide additional information advancing equity and global education. Furthermore, it would inform other school divisions on their teachers' perceptions of teaching for global readiness, their global competencies, and supports needed to provide an equitable education.

Recommendations

Findings from this study can provide MCPS, higher education, and policy makers with relevant information to achieve district initiatives, prepare teacher graduates, and enact policies aimed at global education. This study reported: teacher perceptions of teaching for global readiness; teacher's perceived global competencies; identified supports needed to provide an equitable education; and the reliability of two global education measures. The following section includes recommendations for schools and policymakers based on results of this study.

Professional Development

According to Messiou and Ainscow (2015), professional development should be a continuous process whereby teachers engage in planned experiences and opportunities, within the context of their teaching activities that allow for growth and development. The authors stated the new paradigm for professional development is to focus on growth and development opportunities. To maximize teacher learning, Messiou and Ainscow (2014) and Avalos (2011) identified collaborative participation as a strategy. Within the global education contact zone teachers and students have an opportunity to collaborate and hone global competencies through the Learning from Differences Model (Messiou & Ainscow, 2015). Reimaging teacher professional development, districts may want to create more collaborative PD where teachers engage in the LfDM with students and school community. Making PD meaningful to teachers by offering differentiated trainings or online platforms for collaboration may encourage active teacher participation.

University Teacher Preparation Programs

As universities work with millennial students and existing teachers, they should consider courses and curricula including trauma-informed care, social and emotional learning, working

with English Language Learners, and integrating global education in diverse school contexts. In addition to university classes expanding educators' global education and equity practices by offering teachers PD targeting an equitable education where students and teachers learn from each other. Diverse student bodies and access to technology enable teachers to connect global issues with local ones by capitalizing on opportunities within the global education contact zones.

State Recognition of Global Competencies

Student global competencies are emphasized in U.S. educational policy, yet there is little research on global education practices and outcomes within K-12 contexts or the extent students are receiving opportunities to develop said competencies. North Carolina and Wisconsin promote students graduating as "global" citizens and offer global education programs (P21, 2014). Organizations like the OECD or States offering global education programs may serve as models for creating national or state standards. Specific global education standards would aid in the creation of policies aimed to develop global citizens and hone tools measuring teaching for global readiness and assessing student outcomes. States and school districts interested in furthering their global education initiatives can turn to programs like Participate©, P21©, or the International Baccalaureate©.

As second language acquisition continues to be important when interacting with diverse people, states and districts should consider the benefits of second language acquisition. Instead of reducing the number of required credits to obtain an advanced diploma, policymakers should investigate ways to incorporate more language learning during a student's K-12 experience, including dual immersion courses starting in the primary years.

Conclusion

Life in the new global or knowledge economy requires students to develop specific learning as well as the social and emotional skills needed for employment in a changing workforce (Standish, 2014). Examining global education contact zones offers a framework to investigate equity practices; student identity development; the extent global education experiences are infused into instructional practices; and strategies for engaging in the Learning from Differences Model (Messiou & Ainscow, 2014). Changing demographics offer an opportunity for teachers and students to learn from each other and further develop their personal and global identities (Banks, 2004). As teacher demographics remain stable, with the majority identifying as White women, there is a need for diversity training and guidance on handling sensitive topics.

MCPS has many initiatives and goals in place supporting equity and global education practices, and data from this study can assist with further developing teacher competencies and practices to ensure all students receive an equitable education.

Afternote: Post COVID

During the winter/spring of 2020 COVID-19 forced many schools to close and offer virtual courses. Almost overnight, teachers had to adjust their practices and it would be interesting to further investigate equity practices and global education in a virtual classroom. Additionally, there is a need to determine teacher ability to use technology effectively to connect with students and the global community. While the global pandemic is tragic, there is an opportunity to further investigate practices advancing educational equity and integrate student experiences in the learning process, while further honing teachers' and students' global competencies.

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Appendix A: Perceptions of Teaching for Global Readiness Survey (Version A and B)

Survey Measure: Version A

Screening Question

Do you hold a teaching license AND teach at least one student 75% of the day?

Yes – enter survey

No – Thank you for your willingness to participate; however, you do not meet the criteria to

participate.

Part A:

Teaching for Global Readiness Scale (Matrix Style).

The following questions contain a number of statements with which some people agree and

others disagree. Please rate how much you personally agree or disagree with these statements

about what you do as a teacher within a typical semester.

During a typical semester…

    a) Strongly Disagree
    b) Disagree
    c) Neither
    d) Agree
    e) Strongly Agree

    1. I build a library of resources related to global education.

2. I take inventory of the cultures (languages, countries, etc.) represented by my students.
3. I cultivate a classroom environment that promotes equity.
4. I cultivate a classroom environment that values diversity.
5. I provide space that allows learners to take risks.
6. I provide a space that allows students a voice.

In a typical semester, how often do you …

   a) Never
   b) Less than once a month
   c) Once a month
   d) 2-3 times a month
   e) Once a week
   f) 2-3 times per week
   g) Daily

7. Integrate global learning with the existing curriculum?
8. Use inquiry-based lessons about the world (e.g., research projects, exploratory learning, discovery learning)?
9. Bring in speakers from different backgrounds so that students can listen to different perspectives?
10. Attempt to break down students' stereotypes?
11. Assess students' global learning?

In a typical semester, how often do you ask students to…

   a) Never
   b) Less than once a month
   c) Once a month
   d) 2-3 times a month
   e) Once a week
   f) 2-3 times per week
   g) Daily

12. Engage in discussions about international current events?
13. Analyze the reliability of a source?
14. Analyze the content from multiple perspectives?
15. Analyze the agenda behind media messages?
16. Construct claims based on primary sources?
17. Utilize asynchronous technology (e.g. email, blogs, etc.) for international collaboration?

18. Utilize synchronous technology (e.g. Skype, Google Hangout, FaceTime) for international collaboration?

19. Utilize technology for virtual interviews (with experts, community members)?

Part B:

Global Competence Learning Continuum (Multiple Choice)

Read each statement and select the response that best describes your practice.

Teacher Dispositions

20. Empathy and valuing multiple perspectives.
    a. I have not yet explored how my personal beliefs have shaped by worldview.
    b. I can identify my personal beliefs and experiences and recognize how they shape my view of the world. I recognize that I might hold stereotypes.
    c. I understand that my beliefs and experiences are not universally shared. I can identify the influences that shape how others and I view the world. I am willing to explore the experiences and perspectives of people who challenge my beliefs.
    d. I recognize biases and limitations of my own perspective and those of others' perspectives. I recognize how my personal beliefs influence my decisions as a teacher. I empathize by seeking to understand the perspectives of others.
    e. I challenge my personal assumptions to understand viewpoints that differ from my own. I value diverse perspectives, including those that challenge my own.

21. Commitment to promoting equity.
    a. I have not yet considered local and global inequities.
    b. I care about the well-being of others. I recognize that inequities exist locally and globally (e.g., poverty and discrimination).
    c. I understand that there are barriers to equity locally and globally. I seek opportunities to contribute to efforts to address inequities.
    d. I engage in opportunities that address particular issues of local and/or global inequity (e.g., poverty and discrimination). I take responsibility for helping my students and others in my school to recognize inequities.

e. I actively seek to understand why inequities exist and challenge those underlying causes. I lead students and others in my school to take on issues of equity locally and globally.

Teacher Knowledge

22. Understanding of global conditions and current events.
    a. I do not yet have knowledge of world conditions and current events
    b. I have a basic understanding of world geography. I have a basic understanding of current local and/or global events.
    c. I can articulate geographical, historical, political, economic, social, and/or cultural influences on current events. I can access multiple resources that portray current events.
    d. I seek out multiple sources to understand contrasting perspectives on an issue. I stay informed on current local and global issues.
    e. I regularly seek resources from varied perspectives and opportunities to stay informed on local and global issues. I think critically about the potential impact of current events on future conditions, both locally and globally.

23. Understanding of the ways that the world is interconnected.
    a. I have not yet considered the ways the world is interconnected.
    b. I recognize that our world is interconnected and interdependent (e.g., economically, socially, culturally, and environmentally). I recognize that the ways in which the world is interconnected are constantly changing.
    c. I understand ways that a global issue impacts my local context (including myself, my students, and my local community). I understand ways that a global issue impacts cultures or nations aside from my own.
    d. I can explain ways that global issues impact my local context and individuals in other nations. I can explain global influences on local issues and local influences on global issues.
    e. I can critically analyze ways that global interconnections contribute to inequities within and between nations. I can explain how actions I take at the local, national, or international level address inequities related to our interconnected world.

24. Experiential understanding of multiple cultures.
    a. I have not yet reflected on my own cultural values and norms. I have not yet considered experiencing other cultures.
    b. I am aware of my own cultural practices, values, and norms in relation to other cultures. I am interested in experiencing other cultures.
    c. I understand differences in practices, values and norms across cultures. I understand that multiple perspectives exist within and across cultures. I seek opportunities to experience other cultures.

d. I demonstrate knowledge of various cultures through cultural immersion experiences (e.g., study abroad and local immersion). I reflect upon the immersion experience in relation to my own cultural constructs, perspectives, and educational practices.

e. I critically relate multiple cultural immersion experiences to each other and to my own perspectives and practices. I modify my educational practices and/or advocate for changing educational policies and practices based upon immersion experiences and understanding of multiple perspectives.

25. Understanding of intercultural communication.
   a. I am not yet familiar with cultural differences in communication.
   b. I am aware that different cultures may have different ways of communication (e.g., differences in language, gestures, and norms for communicating).
   c. I can identify strategies that enhance intercultural communication. I can explain the relationship between language, communication, and identity.
   d. I can use strategies to effectively navigate intercultural interactions. I understand that learning languages has social, emotional, and cognitive aspects.
   e. I critically reflect on how particular languages and modes of communication are valued more than others and the effect that this has on identity. I can help others navigate the social, emotional, and cognitive aspects of intercultural communication.

Teacher Skills

26. Communicate in multiple languages.
   a. I speak one language and have not yet pursued another.
   b. I am pursuing or have pursued a language other than my own.
   c. I can have basic conversation in two languages (including my own).
   d. I am proficient in at least two languages (including my own). I can effectively communicate with students and families in at least two languages.
   e. I am fluent in at least two languages and seek opportunities to use them in schools and communities.

27. Create a classroom environment that values diversity and global engagement.
   a. I do not yet consider global issues or diverse perspectives and cultures in my classroom.
   b. I discuss global engagement and valuing of diverse perspectives and cultures in my classroom.
   c. I engage students in learning about other cultures by emphasizing the relevance of global issues to students' lives. I teach my students to respect diverse perspectives

and cultures. My classroom contains resources that represent multiple global perspectives.

d. I teach my students to respect and learn from diverse perspectives and cultures. I provide opportunities for students to collaboratively discuss global issues. I consistently encourage students to use resources in my classroom for global learning.

e. I help my students develop a concern for global issues, an interest in learning more about diverse cultures, and a desire to take action.

28. Integrate learning experiences for students that promote content-aligned exploration of the world.
    a. I do not yet include global learning experiences aligned with content standards.
    b. I can identify global learning experiences that align with content standards.
    c. I integrate into my instruction global learning experiences aligned with my students' interests and content standards.
    d. I regularly integrate real-world and challenging global learning experiences aligned with my students' interests and content standards.
    e. I reflect on my students' global learning experiences and revise my teaching accordingly. I support the school community in integrating global learning experiences.

29. Facilitate intercultural and international conversations that promote active listening, critical thinking, and perspective recognition.
    a. I do not yet provide opportunities during the school year for students to converse with individuals from other cultures or nations.
    b. I provided opportunities for students to converse with individuals from other cultures or nations.
    c. I provide opportunities for student to converse with individuals from other cultures or nations in which students demonstrate active listening, critical thinking, and/or perspective recognition.
    d. I provide ongoing opportunities for students to converse with individuals from other cultures or nations in which students demonstrate active listening, critical thinking, and/or perspective recognition.
    e. My students initiate communication with individuals from across cultures and nations in which they demonstrate active listening, critical thinking, and perspective recognition.

30. Develop local, national, or international partnerships that provide real world contexts for global learning opportunities.
    a. I do not yet create opportunities for my students to communicate with local, national, or international organizations.
    b. I present students with an opportunity to participate in a global learning experience with local, national, or international organizations.

       c.   I present students with opportunities for short-term collaboration with local, national, or international organizations to learn about the world.

       d.   I develop local, national, and/or international long-term partnerships that allow my students to learn about the work with diverse communities.

       e.   I guide my students to develop local, national, and international partnerships, direct their own communication with these partners, and develop their own global learning opportunities.

31. Develop and use appropriate methods of inquiry to assess students' global competence development.

       a.   I am not yet familiar with how to assess students' global competence development.

       b.   I am familiar with resources to assess students' global competence development.

       c.   I develop and use appropriate assessments of students' global competence development. I can provide students feedback and analyze students' global competence development.

       d.   I develop and use frequent, authentic, and differentiated assessments of students' global competence development. I can provide students with constructive feedback and analyze students' performance to inform subsequent instruction.

       e.   I guide students to evaluate their own global competence development.

Part C:

Demographics

32. Number of Years Teaching Experience

       a.   0-4

       b.   5-9

       c.   10-14

       d.   15-19

       e.   20 or more

33. School Level

       a.   K-5 (By pass to 35)

       b.   6-8

       c.   9-12

34. Subject

       a.   English

       b.   Math

c. Science
d. Social Studies
e. World Languages
f. Other (space for entry)

35. Gender
a. Male
b. Female
c. Other gender identity
d. Do not wish to disclose

36. Race/Ethnicity
a. African American/Black
b. Asian
c. Hispanic
d. Native American
e. Pacific Islander
f. White/Caucasian
g. Multiracial
h. Other racial identity

37. Have you taught or participated in a global education program (e.g. International Baccalaureate, A-Level, other)? YES/NO

If YES: How many years? Empty Spot

Comment box prompt: To what extent did this experience affect your perceptions global

competencies?

38: Research study: Would you be willing to participate in a (focus group

discussion/interview) and share your experiences and perceptions of teaching? YES/NO

If YES: Thank you for your willingness to participate in an interview or group

discussion. You will now be redirected to a new survey.

SUBMIT SURVEY AND REDIRECT TO A NEW SURVEY

If NO: Thank you for participating in the survey and sharing your perceptions.

SUBMIT SURVEY –

Survey Version B

Part A:

Global Competence Learning Continuum (Multiple Choice)

Teacher Dispositions

Directions: For each element, select the statement that best describes you.

Element 1: **Empathy and valuing multiple perspectives.**

    a. I have not yet explored how my personal beliefs have shaped by worldview.
    b. I can identify my personal beliefs and experiences and recognize how they shape my view of the world. I recognize that I might hold stereotypes.
    c. I understand that my beliefs and experiences are not universally shared. I can identify the influences that shape how others and I view the world. I am willing to explore the experiences and perspectives of people who challenge my beliefs.
    d. I recognize biases and limitations of my own perspective and those of others' perspectives. I recognize how my personal beliefs influence my decisions as a teacher. I empathize by seeking to understand the perspectives of others.
    e. I challenge my personal assumptions to understand viewpoints that differ from my own. I value diverse perspectives, including those that challenge my own.

Element 2: **Commitment to promoting equity.**

a. I have not yet considered local and global inequities.
b. I care about the well-being of others. I recognize that inequities exist locally and globally (e.g., poverty and discrimination).
c. I understand that there are barriers to equity locally and globally. I seek opportunities to contribute to efforts to address inequities.
d. I engage in opportunities that address particular issues of local and/or global inequity (e.g., poverty and discrimination). I take responsibility for helping my students and others in my school to recognize inequities.
e. I actively seek to understand why inequities exist and challenge those underlying causes. I lead students and others in my school to take on issues of equity locally and globally.

Teacher Knowledge

Directions: For each element, select the statement that best describes you.

Element 1: **Understanding of global conditions and current events**.

a. I do not yet have knowledge of world conditions and current events
b. I have a basic understanding of world geography. I have a basic understanding of current local and/or global events.
c. I can articulate geographical, historical, political, economic, social, and/or cultural influences on current events. I can access multiple resources that portray current events.
d. I seek out multiple sources to understand contrasting perspectives on an issue. I stay informed on current local and global issues.
e. I regularly seek resources from varied perspectives and opportunities to stay informed on local and global issues. I think critically about the potential impact of current events on future conditions, both locally and globally.

Element 2: **Understanding of the ways that the world is interconnected.**

a. I have not yet considered the ways the world is interconnected.
b. I recognize that our world is interconnected and interdependent (e.g., economically, socially, culturally, and environmentally). I recognize that the ways in which the world is interconnected are constantly changing.
c. I understand ways that a global issue impacts my local context (including myself, my students, and my local community). I understand ways that a global issue impacts cultures or nations aside from my own.

   d. I can explain ways that global issues impact my local context and individuals in
       other nations. I can explain global influences on local issues and local influences
       on global issues.
   e. I can critically analyze ways that global interconnections contribute to inequities
       within and between nations. I can explain how actions I take at the local, national,
       or international level address inequities related to our interconnected world.

Element 3: **Experiential understanding of multiple cultures.**

   a. I have not yet reflected on my own cultural values and norms. I have not yet
       considered experiencing other cultures.
   b. I am aware of my own cultural practices, values, and norms in relation to other
       cultures. I am interested in experiencing other cultures.
   c. I understand differences in practices, values and norms across cultures. I
       understand that multiple perspectives exist within and across cultures. I seek
       opportunities to experience other cultures.
   d. I demonstrate knowledge of various cultures through cultural immersion
       experiences (e.g., study abroad and local immersion). I reflect upon the
       immersion experience in relation to my own cultural constructs, perspectives, and
       educational practices.
   e. I critically relate multiple cultural immersion experiences to each other and to my
       own perspectives and practices. I modify my educational practices and/or
       advocate for changing educational policies and practices based upon immersion
       experiences and understanding of multiple perspectives.

Element 4: **Understanding of intercultural communication**.

   a. I am not yet familiar with cultural differences in communication.
   b. I am aware that different cultures may have different ways of communication
       (e.g., differences in language, gestures, and norms for communicating).
   c. I can identify strategies that enhance intercultural communication. I can explain
       the relationship between language, communication, and identity.
   d. I can use strategies to effectively navigate intercultural interactions. I understand
       that learning languages has social, emotional, and cognitive aspects.
   e. I critically reflect on how particular languages and modes of communication are
       valued more than others and the effect that this has on identity. I can help others
       navigate the social, emotional, and cognitive aspects of intercultural
       communication.

Teacher Skills

Directions: For each element, select the statement that best describes you.

Communicate in multiple languages.

    a. I speak one language and have not yet pursued another.
    b. I am pursuing or have pursued a language other than my own.
    c. I can have basic conversation in two languages (including my own).
    d. I am proficient in at least two languages (including my own). I can effectively communicate with students and families in at least two languages.
    e. I am fluent in at least two languages and seek opportunities to use them in schools and communities.

Create a classroom environment that values diversity and global engagement.

    a. I do not yet consider global issues or diverse perspectives and cultures in my classroom.
    b. I discuss global engagement and valuing of diverse perspectives and cultures in my classroom.
    c. I engage students in learning about other cultures by emphasizing the relevance of global issues to students' lives. I teach my students to respect diverse perspectives and cultures. My classroom contains resources that represent multiple global perspectives.
    d. I teach my students to respect and learn from diverse perspectives and cultures. I provide opportunities for students to collaboratively discuss global issues. I consistently encourage students to use resources in my classroom for global learning.
    e. I help my students develop a concern for global issues, an interest in learning more about diverse cultures, and a desire to take action.

Integrate learning experiences for students that promote content-aligned exploration of the world.

    a. I do not yet include global learning experiences aligned with content standards.
    b. I can identify global learning experiences that align with content standards.
    c. I integrate into my instruction global learning experiences aligned with my students' interests and content standards.
    d. I regularly integrate real-world and challenging global learning experiences aligned with my students' interests and content standards.
    e. I reflect on my students' global learning experiences and revise my teaching accordingly. I support the school community in integrating global learning experiences.

Facilitate intercultural and international conversations that promote active listening, critical

thinking, and perspective recognition.

    a. I do not yet provide opportunities during the school year for students to converse with individuals from other cultures or nations.
    b. I provided opportunities for students to converse with individuals from other cultures or nations.
    c. I provide opportunities for student to converse with individuals from other cultures or nations in which students demonstrate active listening, critical thinking, and/or perspective recognition.
    d. I provide ongoing opportunities for students to converse with individuals from other cultures or nations in which students demonstrate active listening, critical thinking, and/or perspective recognition.
    e. My students initiate communication with individuals from across cultures and nations in which they demonstrate active listening, critical thinking, and perspective recognition.

Develop local, national, or international partnerships that provide real world contexts for global

learning opportunities.

    a. I do not yet create opportunities for my students to communicate with local, national, or international organizations.
    b. I present students with an opportunity to participate in a global learning experience with local, national, or international organizations.
    c. I present students with opportunities for short-term collaboration with local, national, or international organizations to learn about the world.
    d. I develop local, national, and/or international long-term partnerships that allow my students to learn about the work with diverse communities.
    e. I guide my students to develop local, national, and international partnerships, direct their own communication with these partners, and develop their own global learning opportunities.

Develop and use appropriate methods of inquiry to assess students' global competence

development.

    a. I am not yet familiar with how to assess students' global competence development.
    b. I am familiar with resources to assess students' global competence development.
    c. I develop and use appropriate assessments of students' global competence development. I can provide students feedback and analyze students' global competence development.

       d. I develop and use frequent, authentic, and differentiated assessments of students' global competence development. I can provide students with constructive feedback and analyze students' performance to inform subsequent instruction.

       e. I guide students to evaluate their own global competence development.

Part B:

Teaching for Global Readiness Scale (Matrix Style).

The following questions contain a number of statements with which some people agree and

others disagree. Please rate how much you personally agree or disagree with these statements

about what you do as a teacher within a typical semester.

During a typical semester…

    f) Strongly Disagree
    g) Disagree
    h) Neither
    i) Agree
    j) Strongly Agree

    2. I build a library of resources related to global education.
    3. I take inventory of the cultures (languages, countries, etc) represented by my students.
    4. I cultivate a classroom environment that promotes equity.
    5. I cultivate a classroom environment that values diversity.
    6. I provide space that allows learners to take risks.
    7. I provide a space that allows students a voice.

In a typical semester, how often do you …

    h) Never
    i) Less than once a month
    j) Once a month

k) 2-3 tims a month
l) Once a week
m) 2-3 times per week
n) Daily

8. Integrate global learning with the existing curriculum?
9. Use inquiry-based lessons about the world (e.g., research projects, exploratory learning, discovery learning)?
10. Bring in speakers from different backgrounds so that students can listen to different perspectives?
11. Attempt to break down students' stereotypes?
12. Assess students' global learning?

In a typical semester, how often do you ask students to…

h) Never
i) Less than once a month
j) Once a month
k) 2-3 times a month
l) Once a week
m) 2-3 times per week
n) Daily

13. Engage in discussions about international current events?
14. Analyze the reliability of a source?
15. Analyze the content from multiple perspectives?
16. Analyze the agenda behind media messages?
17. Construct claims based on primary sources?
18. Utilize asynchronous technology (e.g. email, blogs, etc.) for international collaboration?
19. Utilize synchronous technology (e.g. Skype, Google Hangout, FaceTime) for international collaboration?
20. Utilize technology for virtual interviews (with experts, community members)?

Part C:

Demographics

21. Number of Years Teaching Experience
    a. 0-4
    b. 5-9

     c. 10-14
     d. 15-19
     e. 20 or more

22. School Level
     a. K-5 (By pass to 35)
     b. 6-8
     c. 9-12

23. Subject
     a. English
     b. Math
     c. Science
     d. Social Studies
     e. World Languages
     f. Other (space for entry)

24. Gender
     a. Male
     b. Female
     c. Other gender identity
     d. Do not wish to disclose

25. Race/Ethnicity
     a. African American/Black
     b. Asian
     c. Hispanic
     d. Native American
     e. Pacific Islander
     f. White/Caucasian
     g. Multiracial
     h. Other racial identity

26. Have you taught or participated in a global education program (e.g. International Baccalaureate, A-Level, other)? YES/NO

    If YES: How many years? Empty Spot

Comment box prompt: To what extent did this experience affect your perceptions global

competencies?

38: Research study: Would you be willing to participate in a (group discussion/interview)

and share your experiences and perceptions of teaching? YES/NO

If YES: Thank you for your willingness to participate in an interview orgroup discussion.

You will now be redirected to a new survey.

SUBMIT SURVEY AND REDIRECT TO A NEW SURVEY

If NO: Thank you for participating in the survey and sharing your perceptions.

SUBMIT SURVEY –

Survey to Participate in a Teacher Interview or Group Discussion

Thank you for completing the survey.

I would like to learn more about your perceptions of what it means to teach for global readiness

and the supports needed to provide an equitable education for all students.

If you are still interested in the opportunity to participate in an interview or group discussion, please complete the information below. If you are no longer interested in participating, you may close your browser.

First and Last Name:

Email Address:

Grade Level

    a. Elementary
    b. Middle
    c. High

Appendix B: Pilot Study Instructions

Invitation to Participate in the Global Competence Pilot Survey

Dear <NAME OF SCHOOL PRINCIPAL>,

My name is Jamie Schlais Barnes and I am a doctoral candidate at Virginia Commonwealth University. As our schools become increasingly diverse I am interested in researching teacher perceptions of their global competencies and pedagogical practices. With few measures of global competence available, there is a need to pilot the survey measure prior to administration. I write today asking for assistance in reaching teachers by forwarding an invitation to participate in a confidential pilot-survey that takes less than 15 minutes to complete.

If you agree to participate, you may forward this email or copy/paste the message below to your teachers.

Thank you for the consideration!

Respectfully,

Jamie

Dear Educator,

My name is Jamie Schlais Barners and I am a doctoral candidate at Virginia Commonwealth University. As our schools become increasingly diverse I am interested in learning more about teacher perceptions of their global competencies and their pedagogical practices geared toward developing students' global competencies.

I write you today asking for your participation in a confidential pilot survey (ADD LINK). I have received approval from Chesterfield County Public schools to conduct the survey.

Your participation is important and will provide valuable feedback on the measure's clarity, ease of completing, and its reliability.

The survey will take 10-15 minutes of your time and you have the right to skip questions or leave the survey at any time. No identifiable information (name, email address, or IP address) will be collected and pilot-survey results will remain confidential.

Thank you for your assistance in this pilot study!

With appreciation,

Jamie Schlais-Barnes

VCU Doctoral Candidate

Appendix C: Invitation to Participate in a Research Study

Invitation to Participate in the Teaching for Global Readiness Pilot Survey

Dear Educator,

My name is Jamie Schlais Barnes and I am a doctoral candidate at Virginia Commonwealth University. As our schools become increasingly diverse I am interested in learning more about teacher perceptions of teaching for global readiness and the supports needed to provide all students an equitable education.

I write you today asking for your participation in a confidential survey. I have received approval from Chesterfield County Public schools to conduct the survey. The survey will take 10-15 minutes of your time and you have the right to skip questions or leave the survey at any time. No identifiable information (name, email address, or IP address) will be collected and individual results will remain confidential.

You will also have an opportunity to participate in a teacher interview or group discussion, which you can self-select into at the end of the survey. Individuals attending the interview or group discussions will receive pizza and drinks for their time. Please see below for the dates/times of the discussions.

Thank you for your assistance in this study during a very busy time of year!

To participate, please click on the following link: Perceptions of Teaching for Global Readiness.

With appreciation,

Jamie Schlais Barnes

VCU Doctoral Candidate

Teacher Interview and Group Discussion Sign Up.

Elementary School Interview and Discussion Dates

- ·   Wednesday, May 30, 2018 from 4:30-5:30pm
- ·   Tuesday, June 5, 2018 from 4:30-5:30

Middle School Interview and Discussion Dates

- ·   Tuesday, May 29, 2018 from 3:30 - 4:30 pm
- ·   Monday, June 4, 2018 from 3:30 - 4:30

High School Interview and Discussion Dates

- ·   Thursday, May 31, 2018 from 3-4pm
- ·   Tuesday, June 5, 2018 from 3-4pm

Appendix D: Email to Participate in a Focus Group Discussion

Dear,

Thank you for taking time to complete the Teaching for Global Readiness survey and assisting with my dissertation work.

You indicated in a follow up survey that you would be interested in participating in a focus group discussion. Learning about your perceptions of teaching for global readiness and the supports you need is very important to me and I look forward to the opportunity to hear your story.

For participating in the focus group discussion, I will provide pizza and soda during our discussion. Please click on the survey to select your preferred day, location, and pizza/drink preference. Below I have included a summary of focus group meeting places so you can check your calendar before completing the survey.

Focus Group Discussion Sign Up.

Respectfully,

Jamie

Jamie Schlais Barnes

VCU Doctoral Candidate

Elementary School Focus Group Discussion Dates and Places

- · Wednesday, May 30, 2018 from 4:30-5:30pm
- · Tuesday, June 5, 2018 from 4:30-5:30

Middle School Focus Group Discussion Dates and Places

- · Tuesday, May 29, 2018 from 3:30 - 4:30 pm
- · Monday, June 4, 2018 from 3:30 - 4:30 pm

High School Focus Group Discussion Dates and Places

- · Thursday, May 31, 2018 from 3-4pm
- · Tuesday, June 5, 2018 from 3-4pm

Appendix E: Semi-structured Focus Group Protocol

Semi-Structured Focus Group Protocol

Qualitative Research Question: What types of supports do educators need to teach for global readiness?

Introduction.

Thank you for agreeing to participate in the focus group discussion today. The purpose of the research is to learn about individual's perspectives on the types of supports needed to teach for global readiness.

The focus group discussion will last no longer than 60 minutes and participants have the right to leave the focus group discussion at any time or decline to answer any questions. Furthermore, participants may remove a statement from the records by informing the researcher. There are no risks or direct benefits to participating in the focus group. All information will be kept confidential, as the participant will select a pseudonym and the audio recording will be destroyed after transcribing the interview. Transcripts will be kept in a password-protected file until the data retention requirement is met, no less than five years post study closure, at which point they will be destroyed.

After the interview, you will be debriefed and given the dissertation chair and researcher's name and contact information. Do you have any questions? If we may proceed with recording the focus group discussion, please sign the informed consent form and keep one copy for your records.

General & Questions

(Focus group directions: Can we go around the table and state the subject taught and the length of time you have been teaching?)

1. How long have you been teaching?

Unstructured Questions

2. Two what extent did you feel your pre-service teacher training prepared you for the work you have done over the years?

3. Reflecting on the numbers of years teaching, how has education stayed the same and/or changed?

   Probe: What are some pedagogical practices that appear successful?

   Probe: What types of challenges have you faced?

4. If you were to build your ideal education system, what would it look like?

   Probe: What would be an ideal education for students?

5. In your opinion, what supports would you need to create the "ideal" education experience for students?

   Probe: What are examples of material resources needed? Human resources needed? Or other resources needed?

Structured Questions

6. How would you define or characterize global education?

   Probe: What is the aim/objective? What does it look like in practice?

Possible questions based on the survey results.

7. To what extent would speaking a second language assist you in your practice?

8. To what extent is empathy and valuing multiple perspectives integrated into the teaching of state standards?

9. What types of resources related to global education would you want for your classroom?

10. To what extent could students use technology to connect with a school in another

district/state/nation?

Probe: What are the perceived obstacles to connecting students with international

schools?

Probe: What would be the benefits of expanding technology use when teaching

state standards?

11. To what extent do students analyze the agenda behind a media message?

12. How do you / would you assess students' global learning?

Appendix F: Focus Group Discussion Informed Consent

RESEARCH PARTICIPANT INFORMATION AND CONSENT FORM
Focus Group Discussion
STUDY TITLE: Investigating K-12 Educators Perceptions of their Teaching for Global
Readiness
and Supports Needed to Provide an Equitable Education for All Students.
VCU INVESTIGATOR: Lisa Abrams and Jamie Schlais Barnes
NOTE: In this consent form, "you" always refers to the research.
ABOUT THIS CONSENT FORM
You are being invited to participate in a research study. **It is important that you carefully think**
about whether being in this study is right for you and your situation.
This consent form is meant to assist you in thinking about whether or not you want to be in this
study.
Your participation is voluntary. You may decide to not participate in this study. If you do
participate, you may withdraw from the study at any time. Your decision not to take part or to
withdraw will involve no penalty or loss of benefits to which you are otherwise entitled.
AN OVERVIEW OF THE STUDY AND KEY INFORMATION
The purpose of this research study is to learn about educator's perceptions of their teaching for
global readiness and the supports needed to provide an equitable education for all students. We
think this topic is related to you because you are teacher in a K-12 public school division. Your
participation in this study will allow us to learn more about this topic.
WHY IS THIS STUDY BEING DONE?
The heterogeneity of classrooms is a challenge for many teachers unprepared to work with
students of diverse backgrounds and multiple social identities (Hurtado & Guillermo-Wann,
2013). The broad purpose of this study is to examine teachers' global competencies in an effort to
inform district wide professional development. A secondary purpose is to identify appropriate
tools for measuring teacher perceptions of global competencies. Student success is heavily
dependent on teacher quality and identifying teacher competencies and the supports needed to
develop global competencies assists in allocating resources to strengthen teacher pedagogical
literacies leading to positive student outcomes.
WHAT WILL HAPPEN IF I PARTICIPATE IN THE STUDY?
You will have the opportunity to participate in a focus group discussion with other teachers within

your school level (elementary, middle, or high). Focus group discussions will be scheduled at a

local library or Chesterfield County Public Schools' Thomas J. Fulghum Center.

Your participation in the focus group discussion will last approximately 60 minutes. All teachers

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receiving the email from building principals will have an opportunity to participate in the focus

group discussion.

WHAT ARE THE RISKS AND BENEFITS OF BEING IN THE STUDY?

There are both risks and benefits of participating in research studies. We want you to know about

a few key risks right now.

Most Common Risks and Discomforts

Benefits to You and Others

▢ There are no more than minimal risks when participating in this study.

▢ Participants in the focus group discussion may feel uncomfortable talking about potentially sensitive topics. You are able to leave the discussion or not offer a response.

▢ You may learn things about yourself that you did not know before and that could affect how you think about yourself.

▢ There is no guarantee that you will receive any benefits from being in this study.

▢ This study may help investigators learn more about educator's perceptions of teaching for global readiness and the supports needed to offer an equitable education to all students.

▢ Information from the study will add to the scholarly research and potentially aid policy makers.

In general, we will not give anyone individual results from the study.

Once the study has been completed, a summary of all of the results of the study and what they

mean will be sent to Chesterfield County Public Schools' Department of Organizational Development, as per district research policy.

WILL I BE PAID TO PARTICIPATE IN THE STUDY?
There is no compensation for participating in the survey study; however, individuals participating
in the focus group discussion will be offered snacks and drinks.
CAN I STOP BEING IN THE STUDY?
Approved by the VCU IRB on 4/30/2018
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You can stop being in this research study at any time by excusing yourself from the focus group
discussion. You also have the right to not respond to any of the questions.
Your participation in this study may be stopped at any time by the investigator without your
consent. The reasons might include:
⬚ you are found to not be eligible for the study
⬚ threatening the safety of students and/or staff
HOW WILL INFORMATION ABOUT ME BE PROTECTED?
VCU and the VCU Health System have established secure research databases and computer
systems to store information and to help with monitoring and oversight of research. Your
information may be kept in these databases but are only accessible to individuals working on this
study or authorized individuals who have access for specific research related tasks.
Identifiable information in these databases are not released outside VCU unless stated in this
consent or required by law. Although results of this research may be presented at meetings or in
publications, identifiable personal information about participants will not be disclosed.
Personal information about you might be shared with or copied by authorized representatives
from the following organizations for the purposes of managing, monitoring and overseeing this
study:
⬚ Representatives of VCU and the VCU Health System
⬚ Officials of the Department of Health and Human Services
WHO SHOULD I CONTACT IF I HAVE QUESTIONS ABOUT THE STUDY?
If you have any questions, complaints, or concerns about your participation in this research,
contact:
Dr. Lisa Abrams
lmabrams@vcu.edu
804.827.2627
and/or Jamie Schlais Barnes
Barnesjs3@vcu.edu
804.356.1192
The researcher/study staff named above is the best person(s) to call for questions about your

participation in this study.

If you have general questions about your rights as a participant in this or any other research, you

may contact:

Virginia Commonwealth University Office of Research

800 East Leigh Street, Suite 3000

Box 980568

Richmond, VA 23298

Telephone: (804) 827-2157

Approved by the VCU IRB on 4/30/2018

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Contact this number to ask general questions, to obtain information or offer input, and to express

concerns or complaints about research. You may also call this number if you cannot reach the

research team or if you wish to talk to someone else. General information about participation in

research studies can also be found at http://www.research.vcu.edu/irb/volunteers.htm.

STATEMENT OF CONSENT

I have been provided with an opportunity to read this consent form carefully. All of the questions

that I wish to raise concerning this study have been answered. I have not waived any of the legal

rights or benefits to which I otherwise would be entitled. I freely consent to in this research study.

I acknowledge a consent form for my records is attached to the email inviting me to participate.

Approved by the VCU IRB on 4/30/2018

Appendix G: Focus Group Debriefing Form

Focus Group Discussion Debriefing Form

Thank you for sharing your perceptions and experiences during our focus group discussion. I appreciate you taking the time to speak with me and will send you a copy of the transcribed focus group discussion within two weeks. Upon reviewing the transcript, you have the right to request content you contributed be removed or changed. As a reminder, the audio recording will be erased after transcribing the discussion and receiving group approval to use the information. Transcripts will be kept in a password-protected file until the data retention requirement is met, no less than five years post study closure, at which point they will be destroyed.

   If you have any questions, comments or concerns regarding our focus group discussion today, you may contact the following individuals:

<table>
<tr><td>Dr. Lisa Abrams
Associate Professor
Dissertation Chair
Virginia Commonwealth University
lmabrams@vcu.edu
804.827.2627</td><td>Ms. Jamie Schlais Barnes
Doctoral Candidate
Virginia Commonwealth University
barnesjs3@vcu.edu
804.356.1192</td></tr>
</table>

Appendix H: Semi-Structured Protocol with Questions about Results

Focus Group Discussion Questions

Semi-Structured (Focus Group/Interview) Protocol

Qualitative Research Question: What types of supports do teachers need to provide all students an equitable education?

Introduction.

Thank you for agreeing to (participate in the focus group discussion/be interviewed today). The purpose of the research is to learn about individual's perspectives on the types of supports needed to create a culturally relevant education experience for their students. Culturally relevant education is defined as pedagogies where teachers and students co-construct knowledge, critique discourse of power, develop cultural competence, and engage in critical reflection.

The (focus group discussion/interview) will last no longer than (60-90/30-60) minutes and participant(s) has the right to (leave/stop) the (focus group/interview) at any time or decline to answer any questions. Furthermore, participants may remove a statement from the records by informing the researcher. There are no risks or direct benefits to participating in the (focus group/interview). All information will be kept confidential, as the participant will select a pseudonym and the audio recording will be destroyed after transcribing the interview. Transcripts will be kept until September 1, 2018 at which point they will be destroyed.

After the interview, you will be debriefed and given the dissertation chair and researcher's name and contact information. Do you have any questions? If we may proceed with recording the (focus group discussion/interview), please sign below.

General & Questions

(Focus group directions: Can we go around the table and state the subject taught and the length of time you have been teaching?)

1.   How long have you been teaching?

Unstructured Questions

2.   To what extent did you feel your pre-service teacher training prepared you for the work you have done over your years?

3.   Reflecting on the classroom of students taught over the years, what is the same and what has changed over the years?

Probe: What are some pedagogical practices that appear successful?

Probe: What types of challenges have you faced?

Probe: Diversity of students

Structured Questions

6.   How would you define or characterize global education?

Probe: What is the aim/objective? What does it look like in practice?

7. How would you define global competencies?

8. To what extent do you perceive the need for students to develop global competencies?

Data Question

9. Reviewing the results, what do you notice?

Probe: what do you about teacher beliefs and practices?

10. To what extent do you identify these skills, dispositions, and knowledge as relevant?

Measure Question

10. Looking at the questions on these two measures, what are the strengths and limitations?

11.

Possible questions based on the survey results.

10. Can you explain how you cultivate a classroom that promotes equality?

11. Can you share ideas on how teachers can cultivate a classroom environment that values

diversity?

12. What supports or resources do you need to provide all students an equitable education?

Probe: What are examples of material resources needed? Human resources needed?

Or other resources needed?

13. Students in grades 6-12 in CCPS have access to Chromebooks. Can you explain how

students use their Chromebook to engage in asynchronous and/or synchronous activities?

Probe: What are the challenges? Where are opportunities for growth? What are examples of

successes?

Probe: To what extent could students use technology to connect with a school in another

district/state/nation?

Probe: What are the perceived obstacles to connecting students with international schools?

Probe: What would be the benefits of expanding technology use when teaching state standards?

14. To what extent is it possible to bring in speakers from different backgrounds? What are the

challenges? What supports are needed to identify speakers?

15. Before we conclude, is there anything additional you would like to share that we did not

already cover in today's discussion?

Appendix I: Semi-Structured Protocol with Questions for Central Office Administration

The purpose of this interview is to learn more about MCPS's equity initiatives and practices. Questions were formulated based on the OECD's 10 Steps to Equity framework and organized around *Design, Practices*, and *Resourcing*. Questions from the interview will be used to supplement teacher perceptions of equity practices and further explain equity initiatives in MCPS.

1. Can you tell me about the main responsibilities of your position and how you see your role as influencing equity practices in MCPS?
2. What are the equity initiatives and/or goals for MCPS?
   a. Are there any specific goals or targets for improving equity especially related to low school attainment and dropout prevention?
2. What equity initiatives are directly related to your department?
3. What are some of the approaches your department uses to determine progress towards achieving the district's equity goals?
4. How is your school division trying to respond to the rapidly growing diversity of the student population?

a.   Are there any specific programs or initiatives to support recently immigrated or migrant students and families?

b.   Are there any programs or initiatives to enhance diversity across all types of programs, including advanced placement and/or gifted education?

2. How does MCPS identify and provide supports for students at risk of falling behind, repeating grades and/or potentially dropping out of school?
3. Can you tell me a little bit about the allocation of resources and how decisions are made to direct resources to high need areas?
4. What are the primary equity and diversity professional learning needs teachers and other professionals in the district? In what ways has the work of your department helped to build capacity in the areas of equity and diversity?
5. What recommendations do you have for other school districts who are trying to address issues of equity and diversity in ways that can support student learning?

a.   What potential barriers or challenges should school district administrators consider when developing policies and initiatives?

b.   How can school divisions most effectively support practitioners in enhancing equity?

Appendix J: Inductive and Deductive Code List

Inductive/ Deductive	Name	Description	Files	References
Aggregate Code	Critical Literacy	items within critical literacy construct.	5	18
Aggregate Code	Integrated Global Learning	Items within IGL	5	17
Aggregate Code	Situated Practice	Items with SP	6	37
Aggregate Code	Transactional Experiences	Items within TE	5	39
D	CL_Analyze content_multiple perspectives	TfGRS- Critical Literacy Construct - Item: analyze content from multiple perspectives	4	12
D	CL_Analyze Media Agenda	TfGRs-Critical Literacy-Item: Analyze the agenda behind a media message	0	0
D	CL_Analyze source reliability	TfGRs-Critical Literacy-Item: Analyze the reliability of a source	1	1
D	CL_Construct Claims using Primary Sources	TfGRs-Critical Literacy-Item: Construct claims based on primary sources	0	0
D	CL_Discuss International Events	TfGRs-Critical Literacy-Item: Engage in discussions about international current events	2	5
D	Cultural Interactions_Skills	Examples where students of differing cultures interact and develop communication and other global skills.	2	4
D	Equity	Equity is the process and equality is the outcome; Equity is fairness and not necessarily equal;Equality is being equal in status, rights and opportunities.	6	121
D	Equity Teacher Supports	Any type of support teachers identify as necessary for	4	20

Category				
		providing a more equitable education.		
	GCLC	Aggregate of all constructs in the GCLC	6	33
D	GCLC Dispositions	Dispositions of empathy and valuing multiple perspectives. Promoting equity worldwide.	5	15
D	GCLC Knowledge	items within the knowlege category.	2	5
D	GCLC Skills	Items related to GCLC skills	5	13
D	GCLC_TD_Empathy_value muliple perspectives	GCLC:Teacher Disposition:Item:Empathy and valuing multiple perspectives. Data referring to challenging personal assumptions and understanding viewpoints that differ from one's own. Valuing of diverse perspectives, including those that challenge one's own.	4	12
D	GCLC_TD_Promoting_Equity	GCLC:Teacher Dispositions:Item: Commitment to promoting equity. Data related to actively seeking to understand why inequities exisst and challenge those underlying causes. Leading students and others in the school to act on issues of equity loclly and globally.	3	3
D	GCLC_TK_Experiencal Understanding Multiple Cultures	GCLC:Teacher Knowledge:Item:Experiential understanding of multiple cultures. Data relevant to cultural immersion experiences and personal perspectives and practices. Classroom practcies that advocate for the change of	2	5

	educational policies andpractices based on immersion experiences and understandings of multiple perspectives.		
GCLC_TK_Global Interconnectivity	GCLC:Teacher Knowledge:Item:Understanding of the ways that the world is interconnected. Critically analyze ways that global interconnectedness contributes to inequities within and between nations. Explain how personal actions at local, national or international level address inequiteis related to our interconnected world.	0	0
GCLC_TK_Intercultural Communication	GCLC:Teacher Knowledge:Item:Understanding of intercultural communicattion. This is data related to critical reflection of how particular languaes and modes of communication are valued more than oters and the effect that this has on identity. Help others navigate the social, emotional, and cognitive aspects of intercultural communication.	0	0
GCLC_TS_Asses student global competence	GCLC:Teacher Skills:Item: Develop and use appropriate methods of inquiry to assess students' global competence development. Includes feedback.	2	4

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D

D

D	GCLC_TS_Class Environment Values diversity_Global Engagement	GCLC:Teacher Skills:Item:Create a classroom environment that values diversity and global engagement.	1	1
D	GCLC_TS_Communicate Multiple Languages	GCLC:Teacher Skills:Item: Communicate in multiple languages.	2	4
D	GCLC_TS_Explore Content_world_Learning experiences	GCLC:Teacher Skills:Item: Integrate learning experiences for students that promote content aligned exploration of the word.	2	3
D	GCLC_TS_Intercultural conversations	GCLC:Teacher Skills:Item: Intercultural conversations promoting active listening, critical thinking, perspective recognition	1	1
D	GCLC_TS_Partnerships for Global Learning	GCLC:Teacher Skills:Item: Develop local, national, or international partnerships that provide real world contexts for global learning opportunities.	0	0
D	Global Education		0	0
D	Global Readiness	development of diispositions, skills and knowledge	6	35
D	Global_Education	Global Education: emphasis on unity and interdependence of human society, developing a sense of self and appreciation of cultural diversity, affirmation of social justice and human rigts, and building peace and actios for a sustainable future in different times and places. (www.globaleeducation.edu.au). Global Education: a	6	110

D		dimension running through the curriculum, an extra filter to help children make sense of the knowledge society of a globalized world.(globalteacher.o		
	IGL_Assess student global learning	TfGRs-Integrated Global Learning-Item:Assess students' global learning. Data related to questioning or assessing students global competencies (knowledge, skills, dispositions)	2	3
D	IGL_Global Resources	TfGRs-Integrated Global Learning-Item:I build a library of resources related to global education. This includes data related to articles, blogs, stories, etc used to connect students to the global world.	2	3
D	IGL_Inquiry Based Lessons_World Exploration	TfGRs-Integrated Global Learning-Item:Use inquiry-based lessons about the world (research projects, exploratory learning, discovery learning, PBL).	3	8
D	IGL_Integrate Global Learning into curriculum	TfGRs-Integrated Global Learning-Item: Integrate global learning within the existing curriculum. Data related to introducing/discussing/investigating a global issues/current event.	3	3
D	PD_Teacher	Data related to teacher professional development at the school, district, or national level.	6	14
D	SP_Breakdown Stereotypes	TfGRs-Situated Practice-Item: Attempting to break down students' stereotypes.	4	5

	Item	Description		
D	SP_Class environment valuing diversity	TfGRs-Situated Practice-Item: I cultivate a classroom environment that values diversity.	4	5
D	SP_Cultivate Class Promoting Equality	TfGRs-Situated Practice-Item:I cultivate a classroom environment that promotes equality.	2	4
D	SP_Inventory_Student Cultures	TfGRs-Situated Practice-Item:I take inventory of the cultures (languages, countries, etc) represented by my students.	5	10
D	SP_Space_Learners take risks	TfGRs-Situated Practice-Item:I provide a space that allows learners to take risks.	3	4
D	SP_Student Voice	TfGRs-Situated Practice-Item:I provide a spae that allows students a voice	5	9
D	TE_Asych_Tech International collab	TfGRs-Transactional Experiences-Item: Asynchronous technology use (email, blogs, etc) for international collaboration.	1	2
D	TE_Diverse Speakers_Perspectives	TfGR_Transactional Experiences_Item:Bring in speakers from different backgrounds so that students can listen to different perspectives.	3	4
D	TE_Experts_Virtual Interviews	TfGRs-Transactional Experiences-Item: Bring in speakers from different backgrounds so that students can listen to different perspectives.	2	3
D	TE_Synchronous Use	TfGRs-Transactional Experiences-Item:Synchronus technology use for international collaboration (Skype, Google Hangout, FaceTime).	2	4

Category				
D	TE_Technology Use	The general use of technology and Chromebooks. This would exclude virtual interviews and asynchronous and synchronous use of tech for international collaboration.	5	26
	TfGR Scale	Items related to critical literacy, transactional experiences, integrated gloal learning and situated practices.	6	111
	Affects of teacher Global Ed exposure	how global ed exposure affected teachers.	1	18
	Assessment	Examples of situations associated with assessments.	4	13
	Bias	favouring one side or view over another	2	14
	Classroom Environment	examples of the classroom environment.	6	17
	Course options	Examples of the types of courses offered to students.	3	9
	Division Cultural Change	Comments related to needed or completed divisinal cultre change.	3	6
	Division Initiatives	Social Emotional Learning, Trauma Informed Care, ESL programs and ELL mainstreamed; alternate education porgrams; Project based learning; Equity	5	18
	Division Supports	Examples of provided and needed division supports.	3	7
	ELL	Refers to English Language Learners	4	44
	Equity_Gifted	Gifted programs and the requirements for students to enter.	1	3
	Equity_initiatives		2	5

Equity_low achieving	Fairness for low achieving students to reach potential and have same opportunities	2	6
ESL_Teacher	Experiences of an ESL_Teacher	4	9
Family Opportunities_Influences Students	Examples of familey and culture influences	5	25
Global Citizenship	identity development stage where individuals. idea that global citizenship extends traditional citizenship education by including respect for other people Global education stresses the need for citizenship in terms of active participation of philosophical perspectives for democratic thinking.	3	6
Global Education Standards	Global education standards in Common Core or Developing National Global Standards	1	2
Global Education Teacher Supports	Monetary, human, and material resources or trainings needed for delivering global education programs/initiatives.	2	3
Global Interaction	global educational contact zones provide opportunities for divers students to interact; brining the global to the local and allowing local identity development as well as global.	2	14
Hear Student Perspective	the belief student perspecives are important - especially dealing with ientity issues.	3	3
Parent Expectations_Teachers	Examples of what parents expect from teachers.	2	2

I	Parent_School_Relationship	Data related to parent feelings toward school and the involvement of parents in the school community.	3	8
Category	Parents	Parent-student; parent-school, parent-culture relationships.	4	10
I	PLC_School	Data about teacher professional learning communities.	1	5
I	Pre-Service Training	Data referencing pre-service teacher training	5	30
I	Regurgitated Responses	Non-meaningful responsins - rote to social expectations.	1	2
I	Researcher Bias	identification of researcher bias.	1	1
I	Rural Communities	examples of situations in rural communities.	2	10
I	School Culture	Container for examples of school culture including high/low SES and rural communities.	2	9
Category	School Division	Category for data related to the school division.	6	64
I	School_High SES	Examples within a high socio-ecomonic high school.	2	10
I	School_Low SES	Experiences in low socio-economic schools.	3	12
I	SEL_Student	Social Emotional student learning or practices.	4	13
I	SEL_Teacher	Teachers participating in an SEL program.	4	6
I	Sensitive Topics	Examples of perceived teacher "sensitive topics".	5	10
Category	Student	Category for examples with students.	6	194
I	Student Diversity	Examples where student diversity is a focus,	6	39
I	Student_Identities	Identity development from individual to global. Based on Banks' (2004) model.	5	28

|				
I	Student_Knowledge	Knowledge students come with and need to know for standardized tests.	4	14
I	Student_Skills	Skills students have and need to develop.	4	22
I	Student_Supports	Examples of identified students supports. needed or in place.	2	10
I	Student_Teacher_Relatio nships	Comments implicit or explict to student-teacher relationships.	5	12
I	Survey Bias	Bias within the survey - however, it was measuring global education.	1	1
I	Survey Comments	Comments regarding participants reaction to survey participation.	3	25
I	Symbolic Language	The future of language as emoji symbols.	1	2
Category	Teacher	Category for items related to the teacher. Started as teacher beliefs.	6	310
I	Teacher Identity	Examples of teacher identity	2	4
I	Teacher Knowledge	Teacher global knowledge and teaching of diverse students.	3	9
I	Teacher_Belief	Examples of situations that reflect teacher beliefs of students actions.	6	147
I	Teacher_Emotion	Examples where teacher emotion is shown.	4	16
I	Teacher_Experience	Examples of individual teacher experiences.	6	52
I	Teachers_Unprepared_Dive rse Students	Examples of teachers unpreprepared to work with diverse students.	3	5
Category	Teaching	Category for examples related to the act of teaching.	6	102
I	Teaching Content	exampleso of teaching content. wether pressures or integrating global into state assessment content.	3	11

Teaching Diverse Students	Examples of teaching diverse students.	6	35

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Appendix K: Qualitative Codes

Items clustered by coding similarity

Items clustered by coding similarity
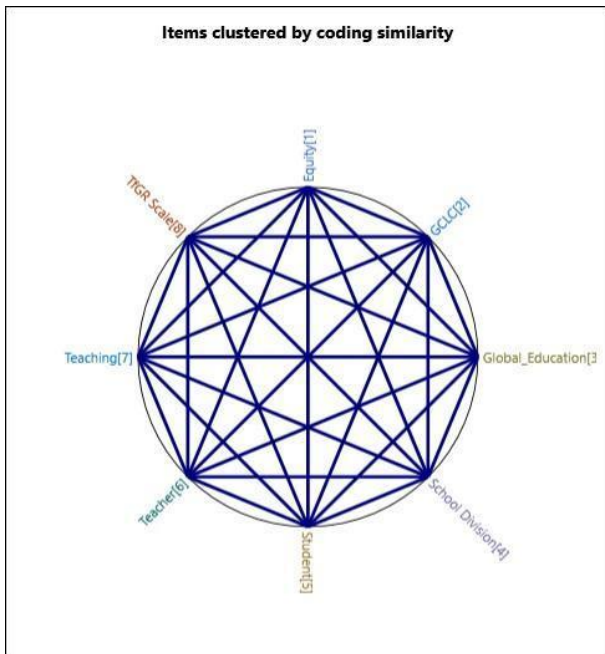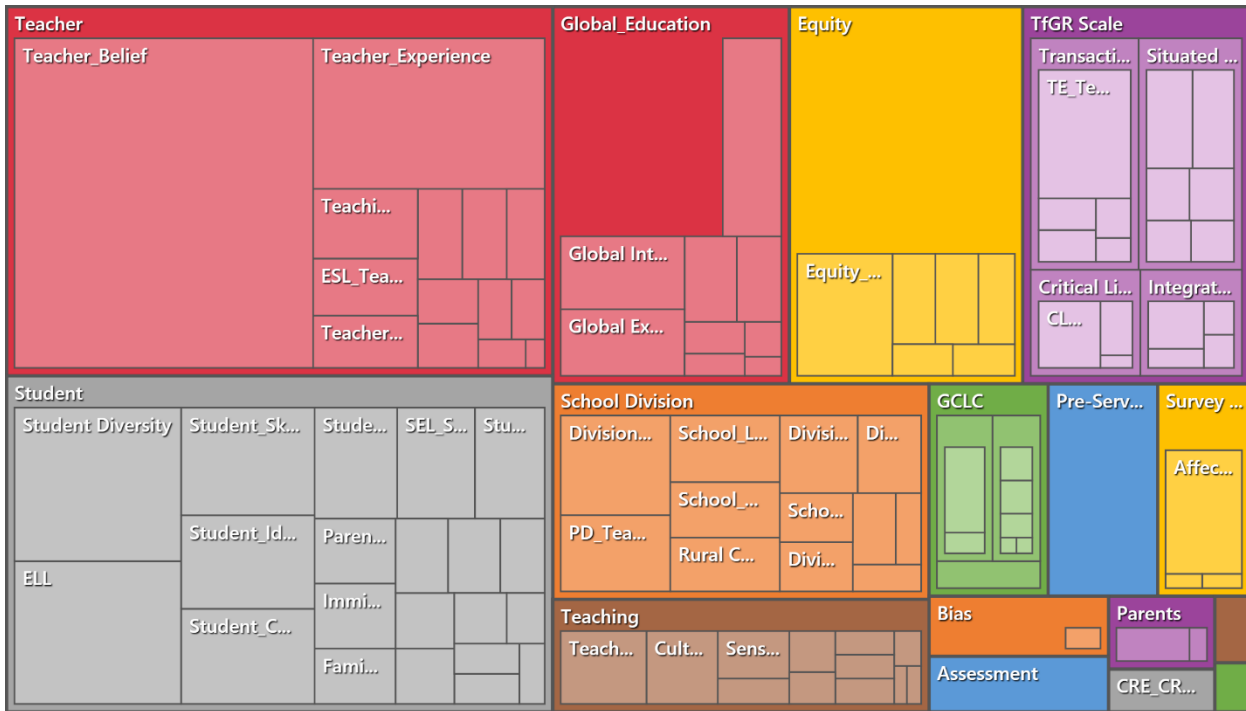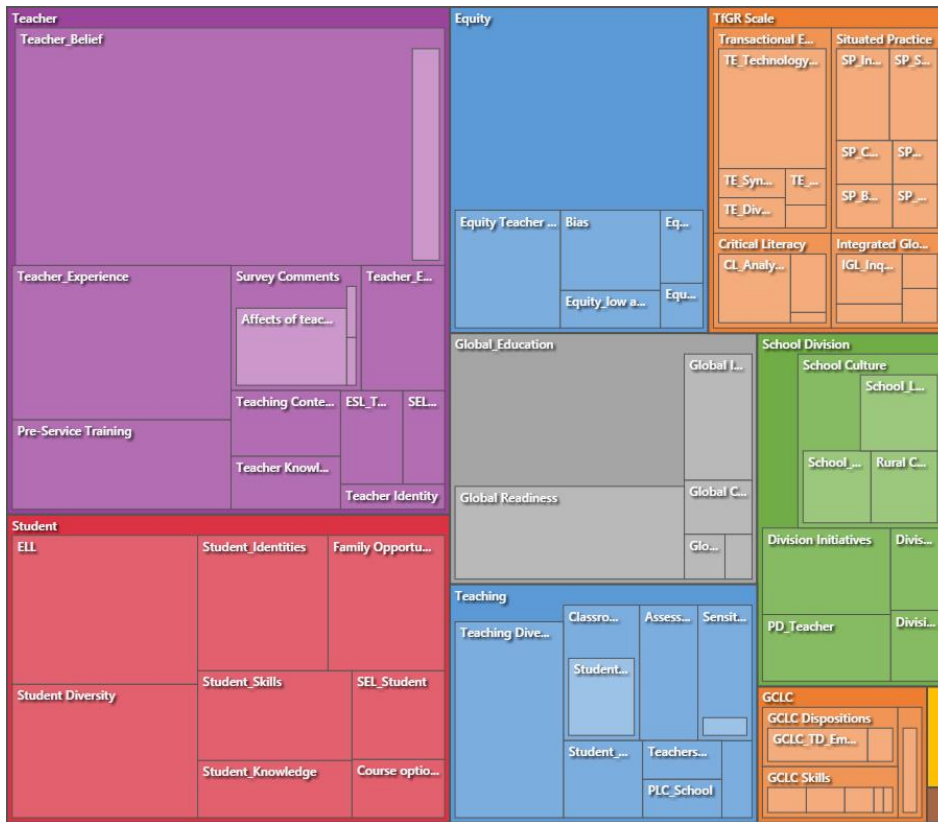
Appendix L: The Perceptions of the Teaching for Global Readiness Survey (PTGRS)

Correlation Table

		d1_v1	d2_v1	k1_v1	k2_v1	k3_v1	k4_v1	s1_v1	s2_v1	s3_v1	s4_v1	s5_v1	s6_v1	studentculture_SP1	equality_SP2	valuediversity_SP3	allowrisks_SP4	studentvoice_SP5	reducestereotypes_SP6	geresources_IGL1	globallearning_IGL2	globalinquiry_IGL3	assessgloballearning_IGL4	discusse_CL1	analyzeresource_CL2	analyzemultipleperspectives_CL3	analyzeagenda_CL4	constructclaims_CL5
d1_v1	Pearson Correlation	1																										
d2_v1	Pearson Correlation	.403**	1																									
k1_v1	Pearson Correlation	.287**	.502**	1																								
k2_v1	Pearson Correlation	.328**	.523**	.586**	1																							
k3_v1	Pearson Correlation	.354**	.517**	.458**	.557**	1																						
k4_v1	Pearson Correlation	.382**	.523**	.462**	.442**	.612**	1																					
s1_v1	Pearson Correlation	0.100	.243**	0.155	.283**	.397**	.362**	1																				
s2_v1	Pearson Correlation	.287**	.478**	.475**	.435**	.548**	.451**	.315**	1																			
s3_v1	Pearson Correlation	.269**	.498**	.503**	.519**	.548**	.483**	.355**	.730**	1																		
s4_v1	Pearson Correlation	0.103	.407**	.356**	.394**	.370**	.344**	.207*	.389**	.426**	1																	
s5_v1	Pearson Correlation	0.144	.336**	.319**	.330**	.346**	.400**	.241**	.399**	.436**	.526**	1																
s6_v1	Pearson Correlation	.201*	.330**	.374**	.314**	.321**	.383**	.167*	.418**	.442**	.486**	.572**	1															
studentculture_SP1	Pearson Correlation	-0.151	-.334**	-.221**	-.223**	-.254**	-.259*	-.196*	-.207**	-.256**	-.176*	-.232**	-.208**	1														
equality_SP2	Pearson Correlation	-.177*	-.224**	-.197*	-.169*	-0.123	-0.089	-0.125	-.254**	-.164*	-0.134	-0.075	-0.148	.362**	1													

Variable		...											
valuediversity_SP3	Pearson Correlation	.385**	.769**	1									
allowrisks_SP4	Pearson Correlation	.278**	.505**	.600**	1								
studentvoice_SP5	Pearson Correlation	.308**	.623**	.679**	.647**	1							
reducestereotypes_SP6	Pearson Correlation	-.177*	-.208**	.282**	-.187*	-.218*	1						
geresources_IGL1	Pearson Correlation	.334**	.185*	.257**	.179	.207*	-.398**	1					
globallearning_IGL2	Pearson Correlation	.250**	.181*	.232**	.277**	.234*	.448**	-.499**	1				
globalinquiry_IGL3	Pearson Correlation	-.183*	0.060	-0.116	-.098	-.135	.358**	-.317**	.416**	1			
assessgloballearning_IGL4	Pearson Correlation	0.126	0.034	0.031	.093	.003	.407**	-.459**	.536**	.487**	1		
discussce_CL1	Pearson Correlation	-.173*	-0.121	0.127	-.201*	-.160*	.406**	-.361**	.520**	.410**	.579**	1	
analyzesource_CL2	Pearson Correlation	-0.066	-0.081	-0.155	-.226**	-.211*	.368**	-.273**	.434**	.435**	.403**	.586**	1
analyzemultipleperspectives_CL3	Pearson Correlation	0.041	-0.006	0.111	-.237**	-.204*	.359**	-.175*	.375**	.411**	.404**	.487**	.767**
analyzeagenda_CL4	Pearson Correlation	0.079	-0.109	-.190*	-.163	-.240*	.434**	-.303**	.377**	.388**	.448**	.560**	.745**
constructclaims_CL5	Pearson Correlation	-0.136	-0.128	-.184*	-.145	-.160	.346**	-.280**	.390**	.297**	.285**	.475**	.616**
diversespeakers_TE1	Pearson Correlation	-0.117	-0.038	-0.056	-.108	-.125	.236**	-.284**	.305**	.294**	.321**	.274**	.258**
useasynchronous_TE2	Pearson Correlation	-.189*	-0.020	0.042	-.073	-.008	.319**	-.326**	.351**	.326**	.502**	.400**	.306**
usesynchronous_TE3	Pearson Correlation	0.103	0.075	0.092	.057	.087	.189*	-.255**	.216**	.214**	.306**	.218**	.235**

virtualinterview_TE4 Pearson Correlation	0.090	.198*	0.106	.201*	.216**	0.138	0.119	.238**	.248**	.280**	.371**	.292**	-.167*	-0.069	0.067	-0.051	0.061	.204*	-.196*	0.122	.212**	.212**	.210**	.278**	.243**	.309**	.230*

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Appendix M: CV

JAMIE M. Schlais   Van Boetzelaerlaan 76, 2581 AC, The Hague - Netherlands
Ph.D Doctoral Candidate   Phone: +31 6 1553 7448, Email: psychjme214@gmail.com

INTERNATIONAL EDUCATION EXPERIENCE

JUL 18 – PRESENT   **Curriculum Manager (Psychology and Creativity, Activity, Service)**
                    International Baccalaureate Organization
- Researching student, teacher, and expert perceptions of psychological literacy.
- Developing a psychology curriculum that will be used annually by approximately 21,000 students globally.
- Redesigning the Creativity, Activity, Service requirement of the Diploma Programme affecting 2790 schools in 153 different countries.
- Collaborating with students, teachers, and experts in identifying psychological literacy appropriate for high school graduates.
- Participating in the development of interdisciplinary standards for IB courses.

K-12 EDUCATION EXPERIENCE – Chesterfield County Public Schools

SEPT 12-JUN 18   **Evaluation Specialist**
- Led 1:1 research on one of the largest student Chromebook programs in the US reaching 33,000 students.
- Led district evaluation of the social emotional learning initiative in 10 elementary schools with 3221 students and 151 teachers.
- Led equity subcommittee in researching and reporting the differentiated resources between 64,000 students in 64 schools.
- Developed the evaluation plan and measures to conduct a program audit of the 12 specialty center programs hosting 1500 students. The audit report identified each program's strengths, areas needing development and recommendations for achieving/exceeding the goals of the district's strategic plan.

AUG 01 – SEPT 12   **Teacher and International Baccalaureate Coordinator**
- Led program evaluation and the updating of program policy and courses, resulting in a 3% increase of diploma recipients.
- Implemented the district's first "Classroom without Borders" program using technology to connect two classrooms in Algeria and Yemen and then hosting students and teachers in a 10-day visit to the US.
- Led a 12-member team in the development of the school's annual operating plan aimed to increase equitable opportunities for 1500 students in the school.

JUL 09-PRESENT   **International Baccalaureate Educator**

- Participated in the development of the DP psychology curriculum, reaching approximately 17,000 students annually.
- Created the DP psychology online and face-to-face professional development workshops delivered to over 1,000 teachers located in 138 countries annually.
- Led the training of 22 Diploma Program (DP) psychology workshop leaders globally.
- Conducted site and evaluation visits to determine the extent schools achieve the IB standards and practices.
- Facilitated psychology workshops online and face-to-face to over 500 teachers globally.

EDUCATION
Virginia Commonwealth University, Ph.D. Doctoral Candidate
Thesis: "A Case Study of a K-12 School Districts Perceptions of Teaching for Global Readiness and Supports Needed to Provide all Students an Equitable Education."

Walden University, MS psychology
Thesis: "A New Age of Learners: How Brain-based Instruction Can Capture Student Learning"

University of Wisconsin-Madison, BS psychology

PUBLICATIONS

Professional Journal
Varier, D., Dumke, E., Conklin, S., Abrams, L., **Barnes,** J., & Hoover, N. (2017). Potential of one-to-one computing in the classroom: Teachers and students weigh in. *Educational Technology, Research & Development*. DOI: 10.1007/s11423- 017-9509-2

Online Education Sites
Koksal, D., Barnes, J., & Ulum, O.G. (2019). A cross cultural study investigating Turkish and Syrian students' stereotypic images of teachers through Draw-a-Scientist Tets (DAST). *Research Gate.*

White Papers for Chesterfield County Public Schools
- *Attracting and Retaining High-Performing, Motivated Teachers in Hard-to-Staff Schools. A Review of Literature and Synthesis of CCPS Teacher Perceptions.*
- *Equity Analysis of Differentiated Resources in Chesterfield County Public Schools.*
- *Project-Based Learning: An Evaluation of PBL in CCPS.*
- *Specialty Center Evaluation: Evaluation of Program Implementation and Results.*
- *MEGA Mentors 2016-2017 Annual Report of Mentoring Program. One-to-One: Enriching the Learning Environment with Mobile Computing Devices for Every Student.*

- *An Evaluation of Attendance Social Workers Engagement of Tiered Interventions and Student Outcomes.*
- *Bon Air Elementary School's "Leader in Me" program.* Chesterfield County Public Schools, Chesterfield, VA.

RECENT PRESENTATIONS

World Education Research Association (2019). "Investigating K-12 Educators' Perceptions of Teaching for Global Readiness and Supports Needed to Provide all Students an Equitable Education". Tokyo, Japan.

International Symposium of Educational Sciences and Social Sciences - RESS Congress (2018). "Rigorous Research in the Social Sciences: Collaborative Opportunities in a Globalized World". Virtual Guest Speaker at Canakkale Onsekiz Mart Universitesi. Personal invitation by Dincay Koksal, RESS Chairman of the Organizing Committee.

Australian Psychological Learning and Teaching (AusPLAT) (2018). "Current Challenges and Opportunities for IB Psychology" and "Psychological Literacy as part of High School Education". Melbourne, Australia, September 13-15.
World Education Research Association (2018). "Quantitative Investigating K-12 Educators' Perceptions of Teaching for Global Readiness and Supports Needed to Provide all Students an Equitable Education". Cape Town, South Africa.

Metropolitan Research Consortium (2017). "Attracting and retaining high-performing, motivated teachers in hard-to-staff schools." Chesterfield County, Virginia.

Collaborative Classroom Leadership Institute (2016). "Overview of a Social Emotional Learning (SEL) Pilot Study at Ecoff Elementary School in Chesterfield County." Frederiksberg, Virginia.

Virginia Academy of School Psychologists (2016). "Using DESSA to measure student social emotional competencies in an elementary level social emotional learning pilot program." Virginia Tech University, Virginia.

American Education Research Association (2016). "A critical case study of the cost-benefits of a one-to-one learning initiative." Philadelphia, Pennsylvania.

Other
Board of Advisors. Mindcarter (2019).

AWARDS
2008 - Midlothian High School's Diploma Programme Teacher of the Year Award
2016 – Toastmaster's Competent Communicator and Competent Leadership Award

SOFTWARE and SKILLS
SPSS, Atlas,ti, MS Office, MPlus, ASANA
Agile/Scrum