

**ECOLOGICAL INFLUENCES ON TEACHERS' UNDERSTANDING OF
THE EVERY STUDENT SUCCEEDS ACT AND ENGLISH LANGUAGE
LEARNERS: AN EXPLORATORY SEQUENTIAL MIXED METHODS
STUDY**

by

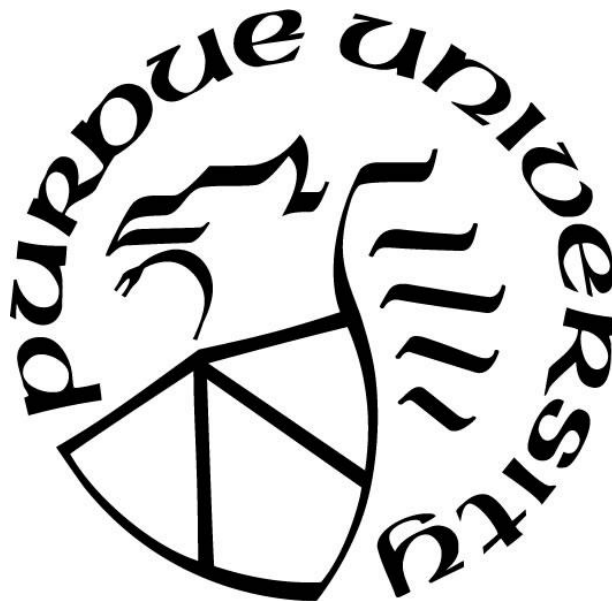
Wan Hee Kim

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THE PURDUE UNIVERSITY GRADUATE SCHOOL
STATEMENT OF COMMITTEE APPROVAL

Dr. Wayne E. Wright, Chair

Department of Curriculum and Instruction

Dr. April Ginther

Department of English

Dr. Jake Burdick

Department of Curriculum and Instruction

Dr. Patricia M. Morita-Mullaney

Department of Curriculum and Instruction

Approved by:

Dr. Janet Alsup

Dedicated to my dear family, my mom, dad, and sister for their endless love, sacrifices, support, comfort, and prayers.

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ABSTRACT

The Every Student Succeeds Act (ESSA) has replaced No Child Left Behind (NCLB), and many changes were made to offer more flexibility for English language learners (ELLs). Historically, teachers have not been well informed of the changes made to the specific requirements of educational policy despite being at the frontline to implement these changes in their classrooms. This mixed methods study includes the development of a comprehensive online survey to investigate how aware Indiana teachers are of the ESSA specific requirements for ELLs and the results of the survey completed by 46 teachers. For the analysis of the survey data, both statistical analysis and visual analytics were employed. Findings suggest that the teachers were not highly informed of the specific requirements of ESSA for ELLs, as well as were not adequately prepared to teach and assess ELLs under ESSA. Accordingly, very few teachers reported that they have made changes to their classroom instruction and assessment practices that would be beneficial for ELLs under ESSA. This study reiterates that the effectiveness of federal educational policy should be examined at the classroom level and suggests that the first step should be to clearly inform the classroom teachers by offering district level professional development, which includes a summary of the changes resulting from NCLB to ESSA. The study further highlights that without informing Indiana teachers of the changes made in federal educational policies, the shift from NCLB to ESSA will be nothing more than a renaming of the Elementary and Secondary Education Act. Hence, the study underlines that only when these changes are implemented at the classroom level through teachers, all students, including ELLs, will benefit from these new policy changes under ESSA.

CHAPTER 1. INTRODUCTION

Introduction to the Problem

Despite continuing federal and state education policy reform, an academic achievement gap persists between English language learners (ELLs)—whose home language includes a language other than English—and non-ELLs (Menken, 2009). Looking more closely at this existing gap, Table 1 shows the student performance gap on National Assessment of Educational Progress (NAEP) between ELLs and non-ELLs in Indiana could not have been closed during the years of federal educational policy change.

Table 1. Grade 4 Reading Percentages at Each Achievement Level

Year	ELL Status	below Basic	at Basic	at Proficient	at Advanced
2019	ELL	49	32	16	3
	Not ELL	31	30	28	10
2017	ELL	58	26	13	3
	Not ELL	26	32	31	11
2015	ELL	58	28	12	2
	Not ELL	23	35	32	10
2013	ELL	52	36	12	1
	Not ELL	25	36	31	9
2011	ELL	58	28	12	2
	Not ELL	30	36	27	7
2009	ELL	69	25	5	1
	Not ELL	29	37	27	8
2007	ELL	60	31	8	#
	Not ELL	31	35	27	7
2005	ELL	‡	‡	‡	‡
	Not ELL	36	34	24	7
2003	ELL	‡	‡	‡	‡
	Not ELL	33	34	25	8

Note. Some apparent differences between estimates may not be statistically significant.

Rounds to zero.

‡ Reporting standards not met.

Source: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003, 2005, 2007, 2009, 2011, 2013, 2015, 2017, and 2019 Reading Assessments.

No Child Left Behind (NCLB) was not designed to make students score higher on National Assessment of Educational Progress (NAEP), yet, hypothetically, if students were expected to 100% pass the state standardized test, their scores on NAEP should have been higher. Indeed, the gap between percentage of students who are at Proficient on NAEP between ELLs and non-ELLs was quite stable from 2007 to 2019. The year with a largest gap between ELLs (5%) and non-ELLs (27%) who were at Proficient was 2009. In 2019, the gap became smaller between ELLs (16%) and non-ELLs (28%) who were at Proficient, but still non-ELLs clearly outperform ELLs. Narrowing the gap between students' academic achievement through the federal and state educational policy change has not yet been successful.

There has been a vast gulf between the effort to make inclusive educational policy for everyone, including ELLs, at the federal and state levels and the reality of all students who were meant to be supported. Often teachers are overlooked in the process of educational policy reform despite their critical role to bridge implementation gaps at the classroom level. The changes made at the federal and state levels need to be enacted into classrooms since the success of educational policy implementation occurs only when teachers successfully deliver the changes to their students. Hence, the effectiveness of a federal and state educational policy needs to be examined to understand the greater relationships/dynamics of how educational policy is being implemented by teachers at the classroom level apart from focusing on students' standardized test results. This study seeks to investigate how the complexity of the implementation of a new federal and state educational policy may be observed at the classroom level. More specifically, my dissertation focuses on researching public elementary school teachers' awareness of the current educational policy. Additionally, my research considers their knowledge of and experience with ELLs in school districts with a growing number of ELLs in a state that has one of the fastest growing ELL populations of the United States.

From my classroom observations and interviews at the pre-dissertation stage, the teachers at an Indiana public elementary school with a number of ELLs in their classrooms were not aware of ESSA specific requirements in relation to ELLs. Moreover, the majority of them had not even heard of ESSA as a new federal and state policy. It is timely to investigate the initial stage of ESSA implementation. With more flexibility given under ESSA, educators may avoid the negative impacts of NCLB on ELLs. However, if educators are unaware of these amendments, the negative impact on ELLs may continue due to an emphasis on state standardized tests and the subsequent

impact on the classroom instruction (e.g., teaching-to-the-test) and the language of instruction (e.g., English only) for the classroom teachers. Thus, whether the classroom teachers are aware of how ESSA specific assessment requirements of ELLs differ from NCLB would play a critical role in effectively implementing ESSA at the classroom level. To my knowledge, since ESSA is being newly implemented, there is no study that found either negative or positive impacts on ELLs as of now.

Backgrounds and Statement of Problem

The question of who or what is accountable for a student's education is not easy to answer even in my country of Korea where a national school curriculum (1st-12th grade) and a national college entrance exam (only once a year) have been uniformly legislated. However, everyone in Korea is aware that the national education policy impacts every single student even though the national education policy is not seen as a single factor accountable for a student's education. Similarly, the federal education policy of the United States critically impacts state and local education policy, even though the federal education policy cannot oversee the fifty states and one district homogeneously implementing a single national education policy. Under the Every Student Succeeds Act (ESSA), English language proficiency for English language learners (ELLs) is integrated into the system by which all schools and districts are held accountable. That is, ELLs' English language proficiency will be included in the overall school accountability calculation for the first time in the United States. At the same time, under ESSA there are no more federally mandated test-based teacher evaluations, yet states could continue linking students' test scores to teacher evaluation.

Apparently, the previous federal education policy, No Child Left Behind (NCLB), which, at that time, was crowned as a domestic policy achievement, failed to reach its goal of every child achieving grade level proficiency in math and reading. Despite the good intentions, NCLB yielded more negative consequences than positive (Crawford, 2007; Heubert & Hauser, 1999; Menken 2006, 2008; Monroe 2006; Nichols & Berliner, 2007; Solórzano, 2008; Wiley & Wright 2004; Wright & Choi 2006; Wright & Li, 2008). Regardless of the shortcomings, NCLB mandated that states and schools be accountable for all students' academic performance, especially that of ethnic and language minorities, students with disabilities, and economically disadvantaged students. As such, NCLB brought greater attention to ELLs in an effort to reduce the academic achievement

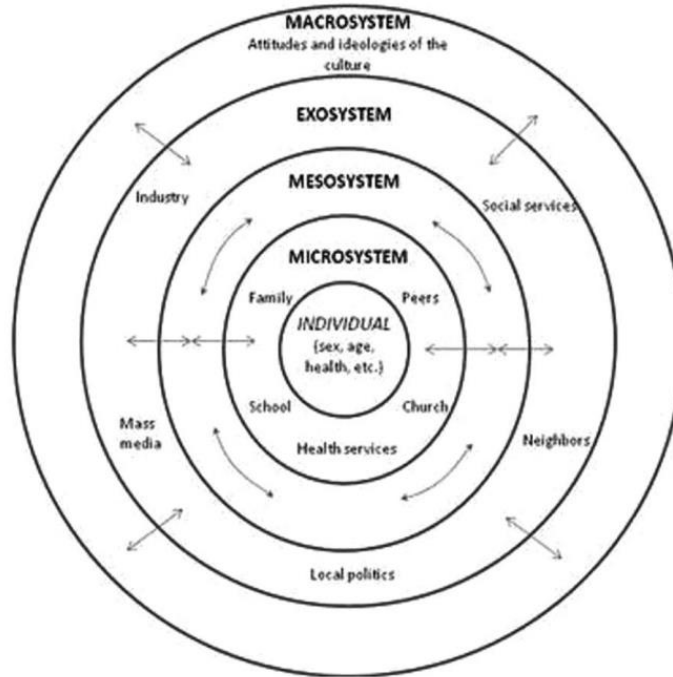
gap between ELLs and non-ELLs (Hunt, 2009; Haycock, 2006). Indeed, the current education policy, ESSA, draws even greater attention to ELLs and their success in school.

Nonetheless, previously, ELLs' success in school and the effectiveness of federal education policy reform have been evaluated heavily with numbers, particularly with students' standardized test scores. I argue that students' academic achievement improvements do not lie in teachers' hands exclusively, and therefore teachers are not the only ones who are responsible for ELLs' success in school. Nonetheless, it is hard to claim that teachers do not contribute to ELLs' academic success in school. The degree of a teacher's contribution to ELLs' learning in his or her classroom differ and the contexts surrounding the teacher also vary. To reiterate, teachers, especially in relation to their adequate preparation in knowledge and practices, can be a part of the influencing factors for ELLs' success in school along with many other possible factors (e.g., SES, type of instruction, and school climate).

In my view, the factors contributing to ELLs' success in school need to be examined in relation to teachers' awareness of the current federal and state education policy since they—unlike policy makers outside classroom—are at the frontline in implementing the policy specific requirements and directly interact with ELLs at the classroom level. Formerly, when examining the effectiveness of federal and state education policy, the idea that teachers are key personnel who are active policy implementers in their classroom was largely discounted (Smit, 2005). Realistically, teachers are not passive individuals. Uniformly implementing the state education policy at the classroom level may not be simply feasible because human beings are the agents of implementing the state education policy in their classrooms. Moreover, the environments surrounding teachers are not identical. Teachers are affected by their environments. Hence, the educational system ought to better comprehend the relationship between the teachers, as the frontline education policy implementers, and the effectiveness of state education policy at the classroom level. Thus, my dissertation will investigate the current standpoint of teachers' awareness of ESSA and ELLs in relation to their personal as well as contextual factors influencing their awareness of ESSA and ELLs.

Theoretical Framework

The theoretical framework of the study is Bronfenbrenner's Ecological Systems Theory (Figure 1). Bronfenbrenner viewed a child's development in relation to the interactions between the individual and the surrounding environments in view of the layers of systems.



Note. Reprinted from “Bronfenbrenner’s bioecological theory revision: Moving culture from the macro into the micro,” by N. M. Vélez-Agosto, J. G. Soto-Crespo, M Vizcarrondo-Oppenheimer, S. Vega-Molina, and C. G. Coll, 2017, *Perspectives on Psychological Science*, 12(5), 900–910.

Figure 1. The Ecological Theory of Human Development. This Figure Illustrates the Second Revision to Ecological Theory (Bronfenbrenner, 1977).

In fact, not only a child but also any individual evolves over time and the experiences and surrounding environments shape each individual. Hence, in this study, a teacher is seen as an individual, and how the interaction between the teachers and their surrounding environments will be understood in relation to the ecological systems theory (Figure 2).

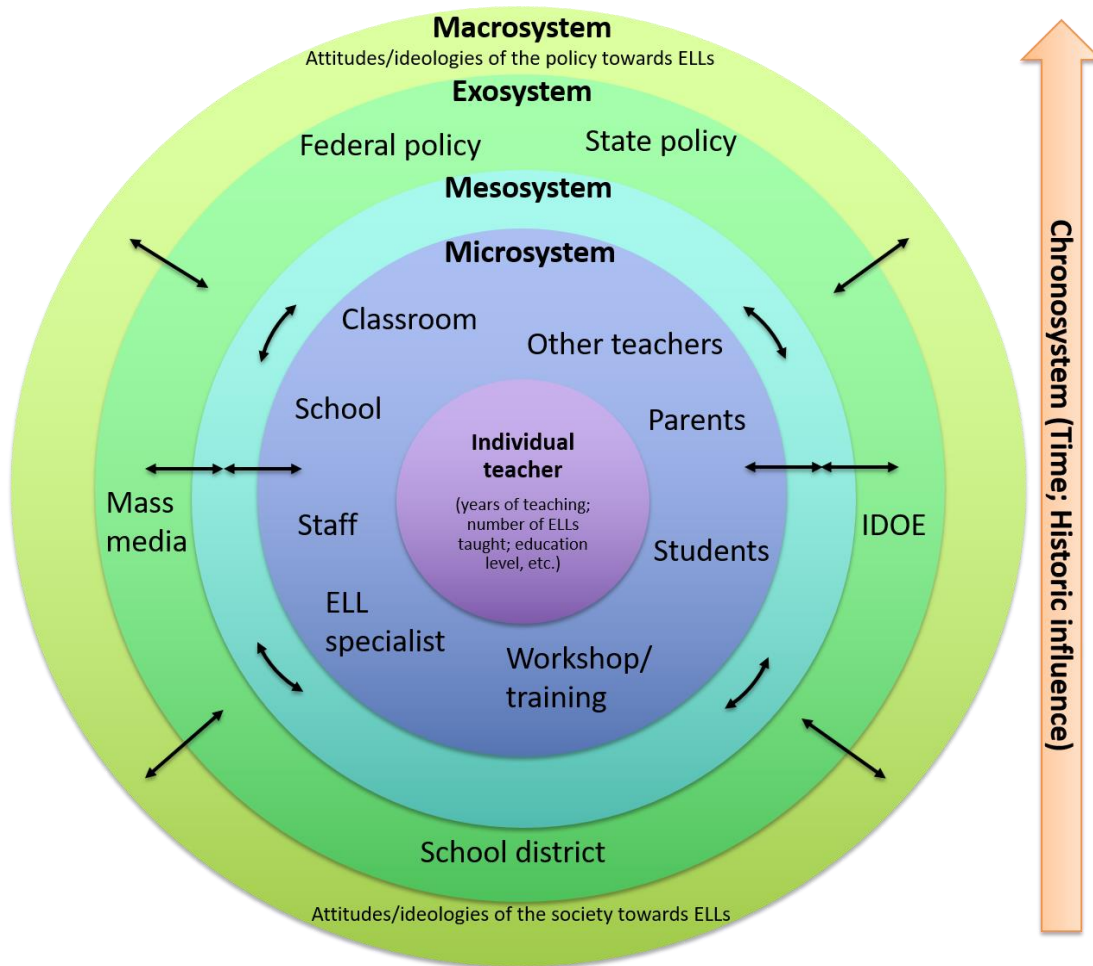


Figure 2. The Layers of Ecological Systems for This Study.

The system consists of four concentric circles: Microsystem, Mesosystem, Exosystem, and Macrosystem. Bronfenbrenner (1979) describes these encircled layers of system as resembling Russian nesting dolls. In addition to these four encircled layers of system, there is another distinctive system (i.e., Chronosystem), which is not within the encircled layers of system yet laid over through one's lifetime affecting him or her in relation to the chronological time/period.

Here are brief explanations of the layers of the system:

- *Microsystem* refers to an immediate environment that the individual lives in. For instance, any immediate relationships (personal) or organizations that the individual interacts directly with. Here, the individual is involved in all interactions at the microsystem level.

- *Mesosystem* refers to the interactions/interconnections between the microsystems. That is the relationship between the microsystems. Here, the individual is not always involved in the interactions at the mesosystem level. For instance, another teacher who attends a workshop or is receiving training could still influence the individual teacher at the center of the system.
- *Exosystem* refers to an environment where the individual is not directly involved. Although the ecosystem is external to the individual's experience, the environmental elements at the exosystem level could profoundly influence the individual. For instance, the decisions made at the school district level or state and federal level would affect the individual even though the individual did not have any active role making the decisions.
- *Macrosystem* refers to unseen factors in any culture in which the individual lives. It is like air, which one cannot see or touch yet always present. The macrosystem includes the ideologies, cultural values, customs, attitudes and laws of the dominant culture in which the individual lives. For instance, the political ideologies in relation to referring English language learners with different terms (Limited English proficient student versus English learner) could intentionally and/or unintentionally influence the individual teacher.
- *Chronosystem* refers to a unique layer of the system in that influences the individual within chronological time. Here, the social and historical change of a particular period could affect the individual. That is, the individuals who were born and raised in different decades in the same country will vary their development and life conditions within and beyond their position within the system. Yet, this is not merely referring to a generation gap solely due to a chronological timeline difference. For example with Koreans, there are some differences not only between generations (grandparents versus grandchildren) but also within the same generation on the perspective of the relationship between Korea and Japan (due to Japan's colonization of Korea) or between South Korea and North Korea (due to the Korean War and the political systematic difference). Although these are the historical incidents all Koreans were impacted by at the time of the event, this kind of historical event continues to function as an influential factor to the society, family, and/or individual far beyond the time of the incident have occurred. In this study, the different federal and state educational

policy reform period is considered as the chronosystem that influence teachers and shaping their teaching profession in relation to their awareness of ESSA and ELLs. The new teachers who have recently come into the timeline will have a different perspective than more experienced teachers who are already familiar with NCLB.

Research Questions

The research questions of the study are as follows:

- Research Question 1. How aware are teachers of ESSA, and what are the dynamics of ecological systems influencing teachers' awareness of ESSA specific requirements in relation to ELLs?
- Research Question 2. To what extent do contextual factors and teachers' personal factors influence their awareness of ESSA in relation to instructing and accessing ELLs?
- Research Question 3. How do the dynamics of ecological systems between teachers' personal and contextual factors influence their awareness of ESSA specific requirements in relation to ELLs, in different regions of Indiana?

Significance of the Study

Teachers are crucial policy implementers when considering the effectiveness of educational policy implementation at the classroom level. Thus far, students' academic achievement—often solely based on their standardized test scores—were considered the major and important measure (evidence). This study explores the dynamics of what teachers face when teaching and assessing ELLs in classrooms under the new federal and state educational policy, with a more comprehensive view on contexts in which the teachers are situated.

In addition, this study aims to better understand the support teachers require at their current professional development stage to understand ESSA specifics in relation to ELLs, and implement as they instruct and assess ELLs in their classrooms. This study presents possible significant discriminators or patterns found between teachers with different levels of awareness of ESSA and ELLs, and urges the necessity to provide district level professional development (PD) and workshops at best, or at the school level at least. Furthermore, more individual customized

professional development support would not only benefit teachers but also the students in their classrooms. For instance, the more experienced teachers who taught ELLs under NCLB would benefit from PD which address specific changes of policy requirements from NCLB to ESSA in relation to teach and assess ELLs in their classrooms. Whereas, those who recently became teachers or have fairly low knowledge of ESSA regardless of their years of teaching would benefit from foundational provisions of professional development which include additional information on the educational policy shifts and what it means to teach and assess ELLs under the new educational policy. Ultimately, this study offers nuanced insight into the need for informing teachers of the specific requirements of a new policy when the federal and state educational policy shifts and moves away from a uniformed professional support for teachers. My study invites future engagements with providing a more tailored support encompassing a teacher's current stage as well as given contexts of teaching profession.

CHAPTER 2. REVIEW OF THE LITERATURE

This chapter includes a comprehensive review of the relevant literature of the following topics: 1) Federal policy impact on ELLs, 2) Teachers as frontline policy implementers, and 3) Bronfenbrenner's Ecological systems theory as a research framework.

Federal policy impact on ELLs

In the United States, for several decades (1965-present), the federal Elementary and Secondary Education Act (ESEA) has impacted English language learners in different ways (e.g., positively or negatively) to varying degrees (e.g., unnoticeably or significantly). The ESEA was passed in 1965. The original goal was to improve educational equity for students from low-income families, but it overlooked the need to support the growing number of ELLs in the U.S. public schools. The *Lau v. Nichols* (1974) case is a noticeable example of how educational equity was not secured for ELLs to succeed in public school when they were not proficient in English. On behalf of approximately 1,800 Chinese-speaking students in the San Francisco Unified School District, Kinney Kinmon Lau and twelve Chinese American students (more than half of them were American born Chinese) charged the district for lack of special English classes with bilingual teachers (Wong, 1988). At that time and currently today, despite changes in federal education policy, the issue remains of affirming language minority students' equal educational opportunities. In particular, this inequity persists regarding inclusion or separation of ELLs in terms of instructional models and inclusion or exclusion in high-stakes testing.

In 2002, a reauthorization of the ESEA, the No Child Left Behind Act (NCLB) was approved, which held schools accountable for students' learning outcomes. More specifically, the new law declared that regardless of ELLs' English language proficiency, all ELLs in third grade to eighth grade (and once in high school) had to take the same state academic content assessments in English Language Arts (Reading) and Math. In addition, all students including ELLs were required to take the state science academic content exam at least once during grades 3 to 5, 6 to 9, and 10 to 12. This aligns with the goal of NCLB to close the achievement gap between students by expecting all students to achieve grade level reading and math proficiency demonstrated through a 100% passing rate on state exams by 2014.

Accordingly, the major negative impacts of NCLB on ELLs are related to the issue of the assessments mandated by NCLB such as the surprisingly high-stakes consequences linked to a single standardized test score. Notably, it is debatable whether the states developed content assessments that could measure an accurate representation of their grade-level content knowledge regardless of their English proficiency level. For instance, Heubert and Hauser (1999) claim that when a student is not proficient in the language of the test, the student's "test score is likely to underestimate [his or] her knowledge of the subject being tested" (p. 225). Furthermore, the validity of the assessments that measure ELLs' academic achievement stands inequitable and problematic consequences of policy decisions for ELLs. In particular, as Solórzano (2008) points out, the state achievement tests were not designed with ELLs in mind, and "the student population for which the test is designed and developed is a crucial aspect that eventually affects the integrity of the test not to mention subsequent decisions based on the results" (p. 282).

Furthermore, considering the linguistic demands of the state test and the opportunities to master content knowledge before taking the exam, ELLs were impacted by the high-stakes test requirement of NCLB not only in reading but also in math. Several studies highlight that providing accommodations cannot assure the NCLB's requirements to test ELLs in a valid and reliable manner (e.g., Abedi 2001, 2003, 2004; Wright, 2005; Wright & Choi 2006; Wright & Li, 2008). Evidently, the state academic content exam given in English (without and with accommodations) cannot accurately measure ELLs' authentic grade-level content knowledge learning.

Moreover, NCLB's unreasonable requirements and expectations for ELLs affected school curricula (Crawford, 2007; Menken 2006, 2008; Monroe 2006; Wiley & Wright 2004; Wright & Choi 2006). More specifically, it narrowed down the subjects being tested (Nichols & Berliner, 2007), and popularized the idea of "teaching to the test" (Menken, 2006). Additionally, by emphasizing a one-time standardized assessment result of an ELL, NCLB, in fact, neglected to monitor ELLs' learning growth over time. Fisanick (2008) criticizes that the adequate yearly progress (AYP) does not measure the same students over time, which, ironically, does not represent a measure of progress. Hence, in the era of NCLB, high-stakes tests were not merely detrimental but "[created] a climate that is often insensitive and marginalizing to students from different linguistic and cultural backgrounds" (Nichols & Berliner, 2008, p. 69).

More importantly, NCLB emphasized and eventually promoted English-only teaching approaches in a nuanced way. Consequently, under NCLB, ELLs' opportunities to receive

bilingual education, and their right to develop bilingualism and biliteracy have been compromised. According to Wiley and Wright (2004), “The term bilingual completely vanished” under NCLB (p. 155). Indeed, the Bilingual Education Act was replaced with the Title III of NCLB, the English Language Acquisition, Language Enhancement, and Academic Achievement Act (Olneck, 2005). Further, according to Evans and Hornberger (2005), “Title III contains no statement concerning the value of multilingualism to the nation or to a child’s English language development and academic achievement” (p. 92). In the same manner, the Office of Bilingual Education and Minority Language Affairs of the U.S. Department of Education was renamed as the Office of English Language Acquisition, Language Enhancement, and Academic Achievement for Limited English Proficient Students (González, 2002).

Hence, I argue that by focusing on ELL’s English language proficiency development and eliminating the term bilingualism, NCLB blatantly accentuated ELLs’ inequitable opportunities to be taught and tested in English as the same as their English only speaking peers. After NCLB was passed, multiple scholars anticipated negative consequences for ELLs in relation to the instruction of language. For example, Crawford (2002) warns against the decrease in ELLs’ opportunity to receive instruction in their native-languages: “‘Accountability’ provisions, such as judging schools by the percentage of ELLs reclassified as fluent in English each year, are expected to discourage the use of native-language instruction” (p. 1). Relevantly, Menken (2008) reports the apparent increase in English language instruction as a result of testing mandates of NCLB even in transitional and dual language programs. NCLB has shifted away from the view of multilingualism as a resource toward “the imposition of monolingual English-only instruction in US schools” that “occurs in a global context in which both multilingualism and multilingual language policies are as much in evidence as they ever were” (Evans & Hornberger, 2005, p. 92). Unfortunately, under NCLB, the re-birth of language-as-problem orientation towards ELLs was apparent, and they were seen as “limited” while they should have been seen as “developing” their English language skills.

The current federal education policy, the Every Student Succeeds Act (ESSA), was signed by President Obama in 2015 and is currently being implemented. Although ESSA is a new version of ESEA that replaced NCLB, in terms of testing requirements, ESSA still has the same testing requirements for the grades and subjects tested under NCLB. ESSA also continues to maintain that 95% of students need to be tested and requires states to include the participation rate in its accountability system. However, under ESSA, states can create “opt out” policies. Furthermore,

the adequate yearly progress (AYP) is replaced with state defined goals for students and student subgroups. Indeed, the NCLB's school accountability goal of all students meeting grade level proficiency in reading and math is no longer required under ESSA. Instead, states need to include their long term as well as interim goals, and state-defined goals should include academic achievement on state assessment, graduate rates, and English language proficiency for ELLs.

Moreover, ESSA allows states to create state-defined performance indices that could differentiate school performance annually while NCLB required schools to make AYP for all students and subgroups and focused on the percentage of students' proficiency as measured by state assessment. More specifically, ESSA requires states to consider at least five indicators of school quality or student success: 1) Student achievement in reading and math (measured by tests); 2) Student growth or other academic measure in reading and math; 3) High school graduation rate; 4) English language proficiency progress; and 5) At least one measure of school quality or student success. Thus, under ESSA, states are given flexibility to use multiple indicators or employ multiple measures within each indicator. This change is the most significant difference between NCLB and ESSA that could impact ELLs. It is because under ESSA, English language proficiency scores of ELLs are required to be included in the state accountability system (Title I). Flores (2016) also denotes that, under ESSA, "schools and districts will now be held accountable for the growth of the English language proficiency of ELLs as part of their general accountability system, as opposed to being included as separate evaluation as had been the case under NCLB" (p. 1).

Another notable change in the accountability system from NCLB to ESSA that would impact ELLs is related to the ELL subgroup. Many educators and researchers criticized the nature of an ELL subgroup being not static compared to other subgroups (e.g., race). Hence, in order to appropriately consider the unique needs of ELLs, ESSA includes ELLs who have successfully attained English language proficiency. For the accountability purposes, these proficient ELLs who have left the English learner subgroup will be included in the subgroup for up to four years unlike NCLB, which allowed them to be included for two years.

In addition, under Title III, ESSA does not use the term "Limited English Proficient" but rather uses the term "English learner." Moreover, ESSA provides states more flexibility and options in regard to how ELLs are included in their accountability system. Unlike NCLB, ESSA amended that since ELLs are developing their English proficiency, their scores will be reported but not included in the state accountability system in their first year of enrollment in a U.S. school.

In their second year, the state must measure their growth by adopting some type of growth measures into the accountability system. Yet, in their third year, their English Language Arts and math test scores will be included in the accountability system in addition to their English language proficiency progress. Considering varying backgrounds of ELLs in terms of their previous schooling and education experience, English language proficiency, literacy in their L1, etc., it is still questionable if all ELLs will be able to demonstrate grade-level content knowledge within three years of their enrollment in a U.S. school.

Teachers as frontline policy implementers

Even though the federal and state education policies have not officially claimed English as an official language of instruction, education policies have played a part in the marginalization of language minorities (De Jong, 2013). Many studies discuss a teacher's role as policymaker to shape his/her classroom language policies since in reality, teachers are "at the center of the onion" (Ricento & Hornberger, 1996, p. 417) as they ultimately implement (or not) language policy in their classrooms by prioritizing the students' immediate needs and practicality of classroom teaching (Throop, 2007; Silver & Skuja-Steele, 2005). In fact, "it is educators that 'cook' and stir the onion" (García & Menken, 2010, p. 256).

Hence, often times, classroom teachers consciously or unconsciously decide the language of instruction (or classroom language policy) complicit with the federal and state education policy. Certainly, "teachers are not passive recipients of language policy; rather, they play an instrumental role in classroom language policy (re)creation" (Throop, 2007, p. 45). Therefore, an educator's decision to negotiate, arbitrate, and implement language policy in his/her classroom should also be viewed as a "situated action [in relation to] collaboratively designing and doing social welfare equity" (Davis, 2014, p. 83).

Whether teachers are deeply aware or not of their classroom language policies, they are constantly situated and required to negotiate, arbitrate, and implement language policies within their classrooms for ELLs. In general, teachers' classroom language policies are often embedded in their lessons. According to Prabhu (1992), a lesson is not a mere curricular event but it is a social event and a medium to interact on a personal level. Hence, it is necessary to understand the true representation of classroom contexts when teachers deliver lessons as part of implementing federal and state education policy for ELLs.

While educational reform to improve students' learning outcomes through amending federal and state education policy, one of the most prominent barriers influencing the successful policy implementation at the classroom level is due to a gap in implementation. Darling-Hammond (1990) states "the importance of understanding the transformation of policy into teacher actions from the vantage point of the teachers, themselves, as well as from that of the policy system" (p. 341). Abuya, Admassu, Ngware, Onsomu, and Oketch, (2015) also urge for the necessity to better understand experiences and challenges of teachers in translating the policies into their classrooms by pointing out that there is lack of empirical research addressing the relationship between the implementation of free universal primary education (UPE) policy in Kenya and teachers' experiences and motivation. Despite the discussion of "bottom-up" approaches, the "top-down" approach in the federal and state education policy implementation prevails. In turn, the implementation gap between what happens in schools and classrooms versus what a policy or program intended to offer in education reforms ensue.

Coburn (2005) claims scholars, as early as the late 1970s, have stressed how education policy is being reconstructed and reshaped at the school and classroom levels (Berman & McLaughlin, 1978; Weatherley & Lipsky, 1977). As such, the study findings of the early policy researchers ascribed such implantation gap to the following aspects: using policy to meet implementers' own goals and agendas (Bernman & McLaughlin, 1978; Weatherley & Lipsky, 1977); or implementers' lack of skill and will (Odden, 1991). The notion of teachers as policy implementors in their classrooms should be regarded as part of systemically constructed environments for teachers as well as students. Through introducing an illustration of dimensions of policy making, Haddad and Demsky (1995) discuss:

The actor in policy making is placed on the horizontal-axis—at one end of the spectrum is the societal/personalistic mode, wherein decisions are reached by negotiation among a variety of interest groups (including government ministries, teachers' unions, etc.), driven by their own conception of the problem and individual values. On the other end is the organizational/bureaucratic mode wherein decisions are made within the organizational entity (i.e. the military, the international community, etc.). (p. 21)

Drawing from the theory of sensemaking (Weick, 1995), researchers started to look at the phenomenon of implementation gap in a different manner. Sensemaking is a form of human cognition, which can be described as the way that people understand their classrooms (Coburn, 2001; Jennings, 1996; Spillane & Jennings, 1997). In addition, other studies emphasize that the

social and structural conditions of teachers' workplaces influence their sensemaking process as part of policy implementation at the classroom level (Coburn, 2001; Spillane, 1999; Yanow, 1996).

More specifically, Spillane, Reiser, and Reimer (2002) assert that attributing the implementation failure to a lack of capacity or a deliberate attempt to ignore policy overlooks the complexity of the sensemaking process. Hence, the authors argue, "we must explore the mechanisms by which implementing agents understand policy and attempt to connect understanding with practice" (p. 391). García and Menken (2010) also denote how teachers understand and implement language policy through their sensemaking:

At times educators' sense-making is directed by their prior experiences or personal identity, as individual cognitive forces shape their interpretations and enactment of language policies. At other times, it is instead external or situational forces that motivate educator's decisions and the policies they ultimately enact. As we have stated, variations in policy implementation are not a problem that should be avoided, particularly when policies hold the potential to marginalize language minorities. Instead, we simply need to gain deeper understandings of this variation to help educators negotiate this complex terrain when faced with their own policy decisions and to help policymakers who are working from outside of classrooms create policies that assume and allow for such variances. (p. 262)

Furthermore, Coburn (2001), by examining how teachers mediate their state reading policy, proclaims the importance of investigating the implementation of education policy in relation to teachers' sensemaking in order to understand the influential role that social interactions play in the implementation process.

Here, it is also important to note that even though individual cognition and the universal patterns of that may be important, "sense-making is not a solo affair. The situation of an individual (i.e., context) is also important for understanding human cognition in that situation does not simply affect what teachers do, it defines implementation practice" (Spillane, Reiser, & Reimer, 2002, p. 412). Further, Spillane, Reiser, and Gomez (2006) claim that "sense-making" occurs through complex interactions between actors and contexts. Hence, by incorporating Bronfenbrenner's (1989; 1992) ecological system theory as the research framework, I will investigate the dynamics of teachers' sensemaking because teachers represent the frontline policy implementers of the federal and state education policy at the classroom level. My dissertation also aims to look at elementary school teachers in different Indiana school districts with varying ELL populations. Within this scope, investigating their sensemaking to implement the federal and state education

policy in relation to their awareness of ESSA and ELLs will add another layer to the existing literature on teacher sensemaking.

Bronfenbrenner's Ecological systems theory as a research framework

Ecological systems theory (EST) designates child development in relation to a joint function of a child in context and stresses the interactive and reciprocal relationships between a child and the multiple contexts where development occurs (Bronfenbrenner, 1989; 1992). More specifically, a child learns and grows in the context of multiple nested systems: microsystem, mesosystem, exosystem, and macrosystem. These systems range from proximal to distal, from direct influences to indirect influences. Thus, people and experiences in different levels of the system influence the development of a child. For example, the family, teacher, and friends (microsystem), the school they attend (mesosystem), the relationship between family and school as well as teacher and parents (mesosystem), and social and cultural norms (macrosystem) could all uniquely influence the development of a child (Bronfenbrenner, 1979).

Recognizing the limitations of focusing on only an individual's (e.g., child) characteristics, in the early 1970s, researchers began to concede the role of and interactions between the individual and environmental factors. As ecological systems theory places the development of a child as nested in a series of environments, a growing number of studies sought to present human development as an interactive, reciprocal, and lifelong process of interaction between individual and environment. According to Bronfenbrenner (1979), the complexity of human development could be understood only through an examination of the interaction between these layers of system and locating a person at the center of these systems.

Therefore, a number of researchers employed the ecological systems theory to explain complex problems and phenomena in many different fields such as health (wellbeing), education, and social work. More recent studies that adopted the ecological systems theory have been done in the field of health (wellbeing). To name a few, the topics include childhood obesity (Opalinski, 2006); postpartum depression (Garfield & Isacoo, 2009); occupational stress among firefighters (Salazar & Beaton, 2000); and participation in workplace health promotion programs (Plotnikoff, Prodaniuk, Fein, & Milton, 2005).

Historically, a larger number of studies have adopted the ecological systems theory as a research framework in the fields of social work and education. With the advent of the ecological

systems theory, many scholars employed it to understand child abuse and the environment of the child development (Belsky, 1993; Bronfenbrenner, 1979; Garbarino, 1985; Garbarino & Collins, 1999). Other researchers used the ecological systems theory to determine the differences in the social ecology of parenting within urban environments and to understand the relationship between neighborhood poverty and child maltreatment types (Coulton, 2005; Drake & Pandey, 1996).

In addition, acknowledging the broader range of contextual factors affecting human development and education, extensive studies have applied the ecological systems theory in their research on young children with disabilities (Guralnick, 1982; Peck, 1993; Odom et al., 1996; Sontag, 1996). Other scholars applied the theory to investigate school climate, that is, a microsystem where school climate is created through the combined perceptions of the school members. For instance, studies indicate that the sense of collaboration between teachers, the levels of conflict or cooperation among teachers and students, and academic expectations for students are some of the contributing factors to school climate formation (Haynes et al., 1997; Juvonen, 2007).

Moreover, there have been a number of studies on the academic achievement of students. For instance, Chun and Dickson (2011) explore Hispanic adolescents' academic performance through the relationships of parental involvement, culturally responsive teaching, sense of school belonging, and academic self-efficacy and academic performance with 478 7th graders in the US-Mexico borderlands. Also, Arana, Castañeda-Sound, Blanchard, and E. Aguilar (2011) present the persisting indicators of Hispanic college students' achievement. Another study investigated an ethnic minority student group, which explored Black high school students' math achievement in relation to the role of schools, families, and psychological variables (Strayhorn, 2010). A more recent study investigated the academic achievement of young students in relation to school-family relationships and school satisfaction (Hampden-Thompson & Galindo, 2017).

To my knowledge, there have been few studies on teachers using the ecological systems theory as a research framework. There is a study by Cross and Hong (2012) which examined how the teachers' internal psychological characteristics transact with external environments to produce their emotions using specifically Bronfenbrenner's ecological system framework. In order to closely understand teachers' emotional experiences as part of their negotiation of the tensions between their internal and multi-layered external worlds, the authors conducted case studies with two elementary school teachers. The authors collected and analyzed the following data: interviews,

classroom observations, email communications, and researcher memos. More recently, another study explored identifying the ecological factors influencing teachers' well-being and "fitness" through pre-service teachers at the University of South Australia drawing on Bronfenbrenner's ecological systems framework (Price & McCallum, 2015). For my dissertation, I not only employ a different research design but also engage a novel research topic. As far as I know, there is no research on investigating teachers in relation to their understanding of ESSA and ELLs. Hence, employing Bronfenbrenner's ecological system framework, I believe my research can add a unique and important perspective to the literature especially at this initial stage of ESSA implementation.

CHAPTER 3. METHODS

In this chapter, I first provide a brief explanation of my original research plan before I present the modified research design that was carried out for my dissertation.

Original Research Plan

My original plan was to employ explanatory sequential mixed methods for this study in an effort to combine the strengths and overcome the limitations of both quantitative and qualitative research methods (Creswell, 2014). That is, first, distribute a survey instrument to obtain teachers' ecological (e.g., personal and contextual) factors including their demographics (e.g., educational level and years of teaching) influencing their understanding of ESSA and ELLs. Then, drawing from the online survey results, conduct follow-up interviews to contextualize the relationships found between teachers' demographics and the dynamics of ecological factors influencing their understanding of ESSA and ELLs. Figure 3 shows the original planned steps of the initial plan of explanatory sequential mixed methods design.

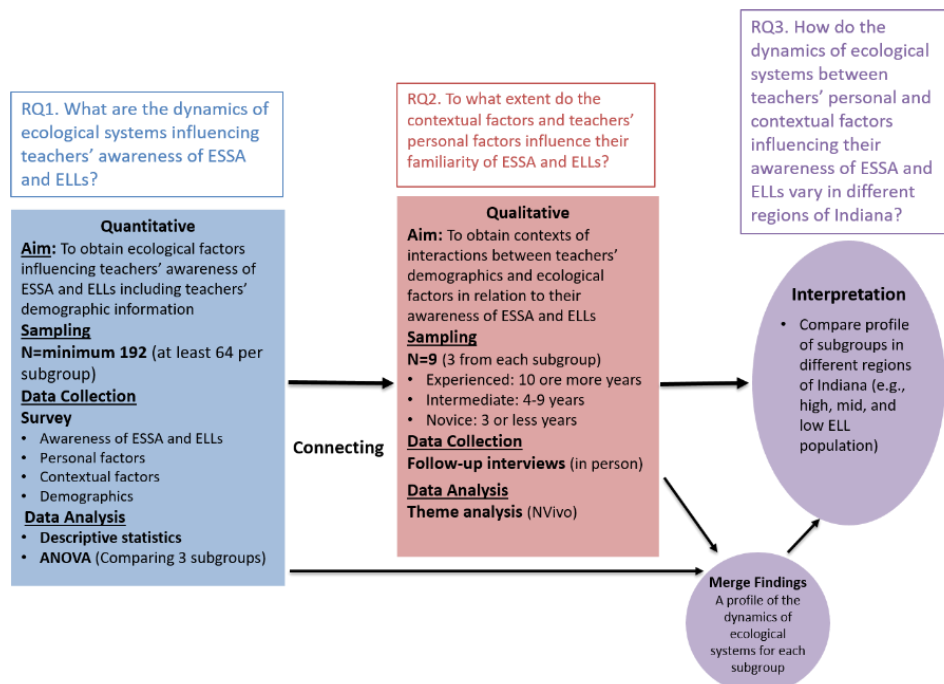


Figure 3. Explanatory Sequential Mixed Methods Design.

Unfortunately, due to unprecedented challenges brought by the Coronavirus pandemic, it was extremely difficult to conduct follow-up interviews with the teachers who participated in the online survey. With the dissertation committee members' approval, the research design of my dissertation was modified as an exploratory sequential mixed methods design.

Research Design

Exploratory Sequential Mixed Methods Design

In an effort to combine the strengths of and overcome the limitations of both quantitative and qualitative research methods (Creswell 2014), I employed the mixed methods design for the study. According to Johnson, Onwuegbuzie, and Turner (2007), after an extensive analysis on the field leader's definitions of mixed methods research,

Mixed methods research is the type of research in which a researcher or team of researchers combines elements of qualitative and quantitative research approaches (e.g., use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) for the purposes of breadth and depth of understanding and corroboration. (p. 123)

In particular, the research design of my study is an Exploratory Sequential Mixed Methods Design (see Figure 4) including the phase of the development of my online ESSA awareness survey instrument and the phase of distribution and conduct of my study using the online survey. Baseline data was first collected in order to develop a survey instrument to measure the dynamics of ecological systems influencing Indiana elementary school teachers' awareness of ESSA specific requirements in relation to ELLs.

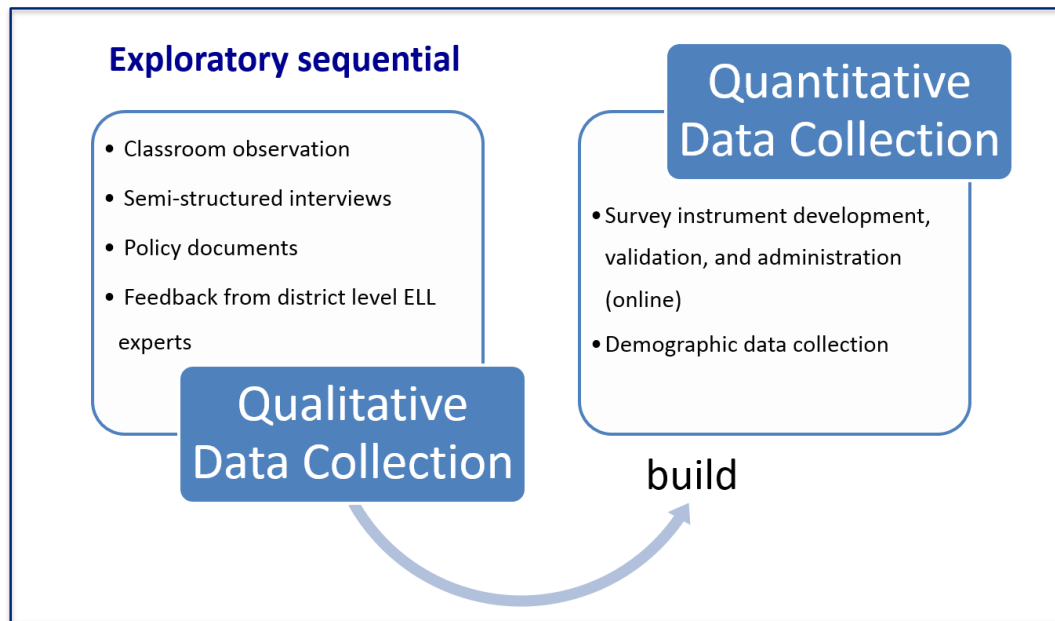


Figure 4. Exploratory Sequential Mixed Methods Design.

To discuss the necessity to first explore prior to administering an instrument, Creswell and Plano Clark (2018) state “In some research projects, the investigators may not know the questions that need to be asked, the variables that need to be measures, and the theories that may guide the study” (p. 9). Creswell and Plano Clark (2018) further denote that in certain situations (e.g., the newness of the research topic), “it is best to first explore qualitatively to learn what questions, variables, theories, and so forth need to be studied and then follow up with a quantitative study to generalize and test what was learned from the exploration” (p. 9). ESSA is not only a very new research topic, development of a survey instrument to understand teachers’ knowledge of ESSA specific requirements in relation to ELLs has not been researched previously.

Furthermore, in order to also measure the personal and contextual factors influencing teachers’ awareness of ESSA specific requirements in relation to ELLs and how this impacts teaching and assessing ELLs in their classrooms, it was necessary to qualitatively explore teachers’ classroom context. As a researcher who is not a licensed elementary school teacher, through classroom observations and semi-structured interviews, I gained more comprehensive understanding of the classroom context in which teachers instruct and assess ELLs. In addition, through analyzing policy documents of ESSA (e.g., Indiana’s approved ESSA plan) and with a focus group in one region and an individual meeting in another region with the ELL specialists at

the district level, the draft of survey items, especially the ESSA knowledge items were developed. Hence, as I planned to develop a survey instrument to measure Indiana teachers' awareness of ESSA specifics in relation to ELLs, my reason for choosing this exploratory sequential mixed methods design is to align with Creswell's (2014) advice to develop "better measurement instruments" with an expected outcome of "a test of better measures for a sample of a population" (p. 231).

Instrument: Online Survey Questionnaire

The survey instrument for this study was developed and has undergone the first step of validation. The survey items were developed by building on the qualitative baseline data (e.g., policy documents, classroom observations, semi-structured interviews) collected and analyzed. The purpose of this survey is twofold: 1) to better understand if and how teachers are informed of the federal and state educational policy requirements for ELLs; 2) to measure if and to what extent teachers are knowledgeable of the ESSA requirements for ELLs. The survey is comprised of personal as well as contextual items, including demographic questions. The types of survey questions include: closed-ended questions (e.g., Yes, No, Not sure); Likert Scale questions (4-point) (e.g., Very prepared, Fairly prepared, Somewhat prepared, Not at all prepared); open-ended questions; and demographic questions (Table 2). The actual survey questions are attached in Appendix A. Except in the demographic profile questions, the survey items are written as statements instead of questions. Indeed, the part 2 of the survey items are in the form of statements despite the fact that the answers in this part is scored (correct or incorrect) so that teachers would feel less like they are being quizzed on the ESSA specific requirements while taking the survey.

Table 2. Survey Specification

Survey domain	Survey item	Item type
Part 1. Are teachers aware of ESSA and ELLs? (Teachers' self-perception of their ESSA awareness)	#1-4: 4 questions	Likert scale (4-point)
Part 2. How aware (correct or incorrect) are teachers of ESSA and ELLs? (Teachers' ESSA knowledge score)	#5-19: 15 questions	Yes, No, or Not sure
Part 3. Does ESSA and how has ESSA influenced teachers' current practices in relation to teaching and assessing ELLs? (Teacher's classroom practices)	#20-25: 6 questions	Yes or No Likert scale (4-point) Multiple Yes or No
Part 4. Do teachers feel prepared to implement ESSA for ELLs? (Teachers' ELL preparation)	#26-30: 5 questions	Yes, No, or Not sure Likert scale (4-point)
Demographic information	• #31-39: 9 questions to collect teachers' demographic information • #40: 1 question to ask their willingness to participate in the follow-up interview	Yes or No Multiple choices Open-ended (text)

Development of the Online Survey Instrument

First, before writing the survey items to measure the dynamics of ecological systems influencing Indiana elementary school teachers' awareness of ESSA and ELLs, I completed participatory observations in two 3rd grade classrooms at a local public elementary school with a large ELL population coming from diverse family backgrounds. I chose this elementary school because of the linguistically and culturally diverse ELLs beside Spanish speaking ELLs. I also chose to observe and interview 3rd grade teachers since Grade 3 is the first year that ELLs need to demonstrate their academic achievement in both English language development as well as content knowledge progress via a standardized test. Both teachers had ELLs in their classrooms at that time and agreed to participate in this research project, and the IRB was approved. These teachers had different years of teaching experience. Of the two teachers, one was a novice teacher who has been teaching for less than three years (who started teaching after the NCLB flexibility era) and one was a veteran teacher with eighteen or more years of teaching experience (who started teaching

before the NCLB era). The classroom observations began in Spring 2019 and continued in Fall 2019 for two weeks in each semester. During these two weeks in each semester, I observed every Language Arts and Mathematics block. An approximately one-hour interview was conducted with each teacher after two weeks of observations in each semester.

The focus of the classroom observations and interviews was to better understand teachers' teaching and assessment practices for ELLs in general. The teachers' teaching and assessment practices for ELLs in relation to ESSA implementation were not observable since both teachers were not aware of ESSA. The participatory classroom observations and interviews allowed me to comprehensively understand the classroom and school contexts so that I can create more precise survey items that reflects teachers' current classroom practices. Some of the personal and contextual factors that would influence teachers' understanding of ELLs in general were identified through interviews (e.g., where they typically turn to for help when they have questions or concerns about assessing and teaching ELLs).

To develop the first draft of the online survey instrument, I reviewed, keeping ELLs in mind, the policy documents focusing on the differences and similarities between the specifics of NCLB and ESSA. The collected and analyzed policy documents include Indiana's approved ESSA plan resources, including summaries available on the IDOE website, the U.S. Department of Education's State Template for the Consolidated State Plan Under the Every Student Succeeds Act (Nov 30, 2019), and "English Learners and ESSA: What Educators Need to Know" (A TESOL Resource Kit) published by TESOL International Association (2016).

The first draft of the online survey instrument was developed for a pilot test with a convenience sample of about 30. The first online survey draft contained 21 items in part 2 of the survey (i.e., true/false statement of the ESSA specific requirements). For the pilot test, the online survey draft link was distributed to the teachers (K-6 Grades) in local private schools by the principals in November, 2019. Additionally, a few graduate students also completed the online survey draft pilot test. With the collected data from the pilot test, after removing incomplete responses, the reliability test (Cronbach's alpha) of part 2 of the survey was conducted with 24 responses. The internal consistency of these 21 items of the ESSA specific requirements was 0.68.

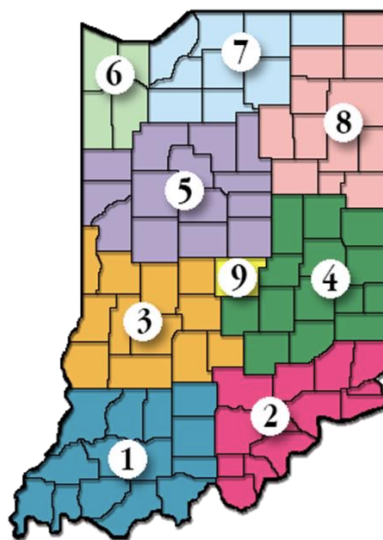
In addition, the first draft of the online survey items was reviewed by 4 people who are knowledgeable of ESSA and ELLs: my advisor and three district level ELL specialists (two from the Metropolitan area and one from the college town). In particular, for the part 2 items of ESSA

specific requirements, these four people marked the fifteen most important survey questions that each thought would benefit teachers to know when teaching and assessing ELLs under ESSA. The final online survey instrument was developed based on this rating of the items and the reliability test with the pilot study data. After qualitatively selecting the final 15 items that would benefit teachers the most as they instruct and assess ELLs, the internal consistency of these final 15 items in part 2 of the survey was 0.21. Because statistically Cronbach's alpha value of 0.21 is considered a low internal consistency, my study can be considered only a first step in examining the validity of my instrument.

Data Collection

Survey Data Collection Procedure

The IRB approval for the study, including online survey data collection, was obtained on December 11, 2019. The survey participants were randomly selected at the individual level, but the school districts were purposefully selected to distribute the online survey link in Region 3, 5 and 6. (Figure 5).



Note. The image, taken from the Indiana Department of Education website (<https://www.doe.in.gov/school-improvement/education-service-centers>), indicates the 9 state-defined regions to be covered by the state's regional educational services centers who provide technical assistance.

Figure 5. The Nine Educational Service Regions of Indiana

Table 3. Demographics of Three Regions

	Region 3 district	Region 5 district	Region 6 district
% of ELLs in 2019 (when selecting the regions)	6.01% Total enrollment: 13367	26.36% Total enrollment: 846	12.64% Total enrollment: 13239
ELL designated specialists	At the district and at a school in some cases (Not licensed in ESL)	Not in the school but at the district level (Not licensed in ESL)	Several ELL specialists at the district level (Many licensed in ESL)
Bilingual programs	No	No	Yes

Source: IDOE website and <https://licenselookup.doe.in.gov/TeacherInquiry.aspx>

As shown in Table 3, in the school district in Region 3, the number of ELLs' enrollment in 2019 was about 6%. Region 3 is close to a state university where a large number of ELLs are children of the graduate students and faculty at the university. In the school district in Region 5, the enrollment rate of ELLs in 2019 was about 26%. This school district is located in a small town in a rural area with about 800 total students. The school district in Region 6 has a much greater number of ELLs compared to the two other regions. The rate of ELLs' enrollment in 2019 was about 13%, yet the number of ELLs in this school district was higher than the number of ELLs in Region 3 and Region 5 combined. Therefore, in Region 6, the ELLs come from a broader range of home environments where some of their parents may be graduate students or working in the nearby metropolitan area. In addition to students from a variety of home environments in these regions, I realized that the school districts have varying degrees of support available for ELLs before choosing these regions. For instance, in Region 3, there was an ELL specialist at the district level as well as at a school level in a particular case. However, according to the available data, they are not licensed in ESL. Whereas, in Region 6, there were many ELL specialists within the school district and a lot of them are licensed in ESL. In Region 5, there seems to be one ELL specialist for all grades in the school district, yet not licensed in ESL. To my knowledge, only Region 6 offers a dual language program.

Initially, the online survey link was distributed to two regions in Indiana with a large ELL population: a metropolitan area (Region 6) and a college town (Region 3). With help from an ELL coordinator in a school district located in the metropolitan area (Region 6), I was able to contact the Assistant Superintendent for Academic Services of the school district. The link to take my online survey was distributed to the teachers in that school district via this Assistant

Superintendent's email in February, 2020. The data was collected for about a month, the first email with the survey link was sent out to the teachers on February 4th and the 2nd reminder email with the survey link was sent out on February 19, 2020. A rough estimation of the survey response is 23%. There are 12 elementary schools in this school district and there are about 308 licensed teachers. The number of licensed teachers are based on the information from <https://www.usnews.com/education/k12> because the school district did not have the information. There were 70 entries attempted initially from the possible 308 teachers (23%). However, only 27 teachers completed the entire survey, and the response rate is 9% based on these fully completed entries.

In February, 2020, the online survey link was also sent out to another location, Region 3 (near a college town), and the response rate was very low (2% response rate). The survey was sent out to 101 teachers in 3 different elementary school in the same school district. Only 2 teacher-responses were obtained by the end of February despite multiple email reminders and with the help of a district level ELL specialist's reminder email. Therefore, I reached out to another school district in a rural area with a large ELL population. After receiving confirmation from the rural school district (Region 5) to distribute my online survey, I submitted an IRB modification to include this new school district as part of my data collection region in Indiana. On April 16, 2020, the modified IRB was approved to collect the online survey data from a school district in the rural area. The survey link was sent out on that day by a school principal and was available for about two weeks and closed on April 29, 2020. The response rate was about 74% (in total sent out to 31 teachers, but only 23 were licensed teachers, and 17 licensed teachers completed the survey in full). This school district awarded a Professional Growth Plan (PGP) point for each teacher who completed the online survey. Instead of providing an professional development workshop on ESSA as I had originally planned, due to Covid-19, I provided a PDF file to the school principal after the close of the survey with a key summary of the ESSA requirements for ELLs (See Appendix B).

As a way of promoting survey participation, at the end of my online survey, another link was included to offer a lottery incentive with gift cards in return for participation. According to Laguilles, Williams, and Saunders (2010), the survey participation rate was significantly higher in the lottery incentive group compared to the control group, and more female respondents were attracted by the lottery incentive than males. In particular, the study found that the dining services

gift card attracted more females. Taking into account the fact that there are more female teachers than male teachers in elementary schools, I included a Starbucks gift card drawing at the end of the online survey instrument. Once the teachers completed the online survey, the teachers were automatically taken to the drawing page for a \$5 Starbucks gift card. The odds of winning a gift card would have depended on the total number of individuals completing the online survey. However, there were a total of 35 teachers who voluntarily participated in the drawing and, therefore, I decided to provide a \$5 Starbucks gift card for all 35 teachers. In order to secure participants' survey responses anonymously, another Qualtrics survey link was used to collect their email addresses for those who wished to be included in the gift card drawing.

Participants of the Online Survey

A total of 46 Indiana school teachers' survey responses are included in this study. There was a total of 91 entry attempts, but any incomplete responses or surveys with missing data were excluded. Since this survey data collection was anonymous, if a teacher stopped taking a survey in the middle and restarted a survey, I was not able to tell if the incomplete responses were from the same teacher or all other teachers since teachers from the same school were linked to the same IP address. Therefore, the participants with fully completed survey responses, 46 teachers, are included in this study. The three regions of the participants' school districts include: Region 3, College Town (C; 2 teachers), Region 6, Metropolitan (M; 27 teachers), and Region 5, Rural (R; 17 teachers). In the online survey, the participants were asked to report their school district region based on the provided Indiana map of nine regions (i.e., Figure 5).

The years of teaching in the school they were currently teaching (at the time of taking this survey) range from half a year to 44 years. About 43.5% of the participants have been teaching in the current school for less than 5 years, 32.6% of the teachers taught between 5 and 14 years, and 21.7% of them taught for longer than 15 years (Figure 6 for detail). One teachers' years of teaching is uncertain as this teacher answered N/A.

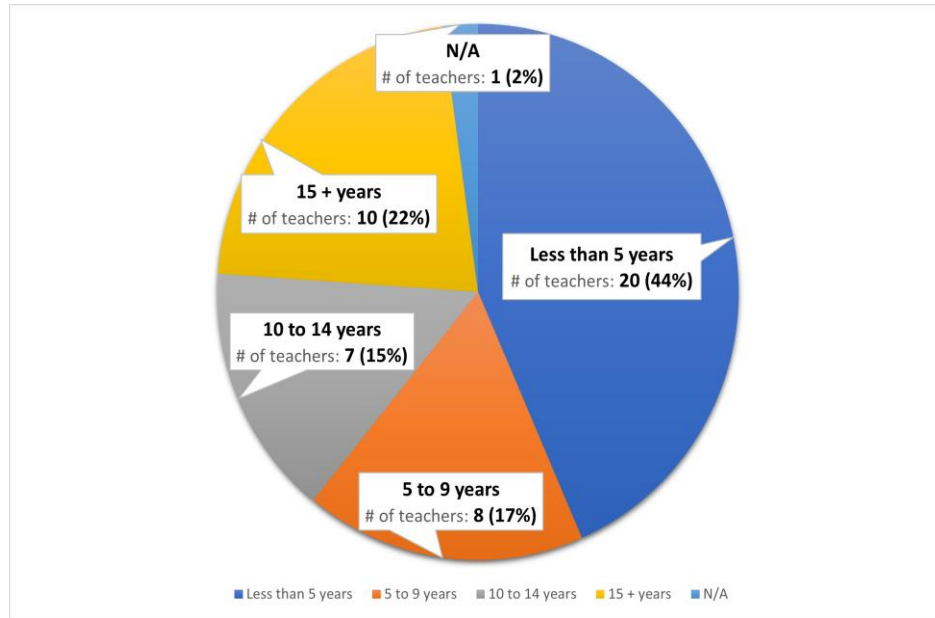


Figure 6. Years of Teaching in the Current School Categories Created based on Teachers' Report

The approximate number of ELLs that participants have taught throughout their career range from less than 10 ELLs (6.5% of teachers) to over 100 ELLs (35% of teachers) (Figure 7). The majority of teachers, 56.5% of participants, have taught over 100 ELLs or 51 to 100 ELLs. Whereas, the range of having taught 41 to 50 ELLs were indicated by the fewest participants, 2 teachers (4.35%).

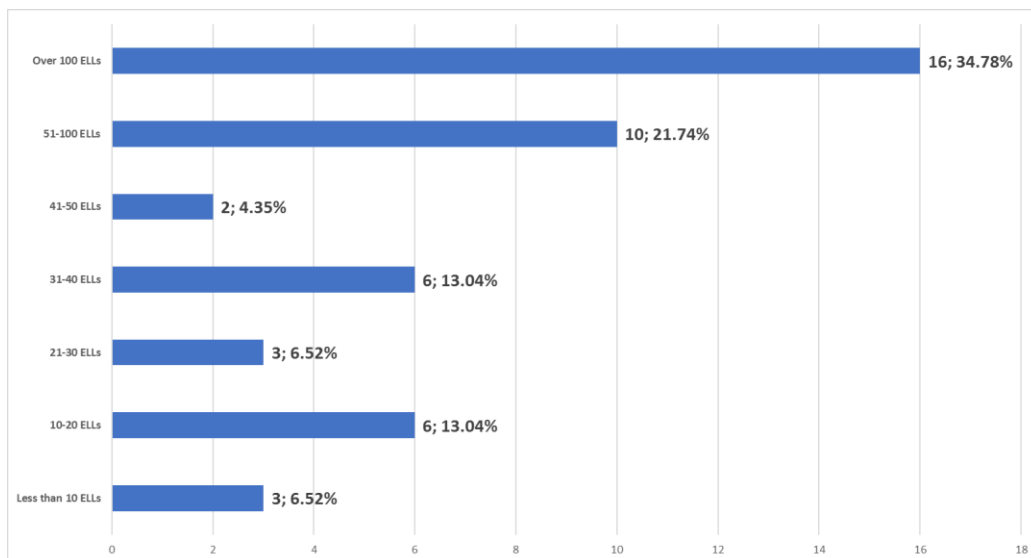


Figure 7. Number of ELLs the Teachers have Taught throughout Their Career

Among 46 teachers, 29 teachers (63%) are English monolingual and 17 teachers (37%) reported they can speak another language beside English (Spanish: 14; German 2; American Sign language: 1), yet their proficiency level are unknown. For the highest degree obtained, 31 teachers (67.4%) had a Bachelor's degree and 15 teachers (32.6%) earned a Master's degree. Most participants had not earned the state ELL licensure: only 4 teachers (8.7%) had the state ELL licensure and 5 teachers (10.9%) were currently in an ELL licensure program.

Data Analysis

Statistical Analysis

The statistical software program SPSS was used to analyze the survey data. First, data cleaning was completed after downloading the CSV and Excel files of the collected survey data from the Purdue Qualtrics page. The final data set, with 46 teachers' fully completed survey responses, was prepared as an Excel file to be transferred into SPSS. Since the study focuses on examining the teachers' ESSA awareness in relation to their teaching and assessment practices for ELLs, part 2 of the survey (Q5-Q19: 15 T/F statements of the ESSA specific requirements) responses were coded for 1 (if correct), 0 ("Not sure"), and -1 (if incorrect). Here, I use -1, 0, and 1 for coding because in my opinion, teachers' knowledge of the specifics of ESSA could affect the ELLs in their classrooms positively or negatively. For instance, if teachers believe that AYP and expectations for a 100% passing rate by a certain year are still part of federal education policy under ESSA, these types of incorrect knowledge would have negative impact in relation to teaching and assessing ELLs in their classrooms. In this way, correct knowledge can be seen as positive knowledge (coded as +1), incorrect knowledge can be seen as negative knowledge (coded as -1) since having incorrect knowledge is potentially more harmful than being unsure of one's knowledge of the specifics of ESSA, and being "not sure" can be seen as "no knowledge" and therefore "zero knowledge" (coded as 0).

Part 2 of the survey consists of 10 true statements (received 1 for correct answer if a teacher selected "Yes") and 5 false statements (received 1 for correct answer if a teacher selected "No"). Therefore, the highest total ESSA knowledge score a teacher can receive is 15 (i.e., answered all correct for 15 items) and the lowest ESSA knowledge score is -15 (i.e., answered all incorrect for 15 items). The ESSA knowledge score of 0 could mean a teacher answered "Not sure" for all 15

items or answered the same number of items correct and incorrect (e.g., 5 correct, 5 incorrect, and 5 “Not sure” answers; $5-5+0=0$). The total ESSA knowledge score for each teacher was calculated to be used as a Dependent Variable (DV) of the linear regression analysis (Figure 8). The calculated ESSA knowledge score ranges from -2 to 11, and this column was added to the final data Excel file.

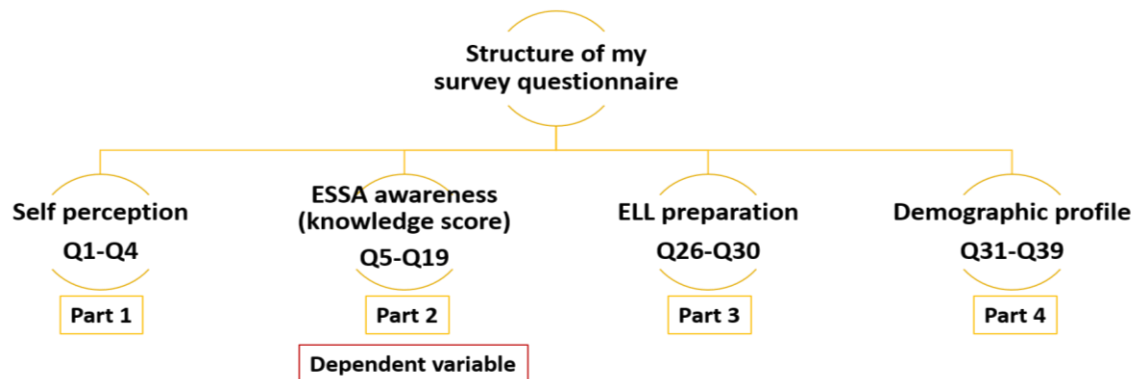


Figure 8. Structure of the Survey and Part 2 of the Survey as a Dependent Variable of the Analysis

Since in SPSS both a DV and an Independent Variable (IV) need to be in numbers (continuous rather than categorical), I have also coded all the responses in other parts of the survey with numerical values. For instance, 1 for “Yes,” 0 for “No” (0 for “Not sure” in Q27 and Q28), and 0 for “Not at all aware/prepared,” 1 for “Somewhat aware/ prepared,” 2 for “Fairly aware/prepared,” and 3 for “Very aware/prepared.” Before conducting the linear regression analysis with many IVs, the assumptions of linear regression were checked and met.

Visual Analytics

Although the survey questions are generally analyzed quantitatively and statistically (unless they are open-ended text responses), this study includes visual analytics as a tool to analyze the survey data beyond the frequency of collected responses. According to Telea (2014), “visual analytics is typically characterized by a tight combination of data analysis, data mining, and visualization technologies and tools” (Telea, 2014, p. 10). By highlighting the nature and power of the human eye and cognition (visual perception), Few (2009) asserts that:

Most data analysis involves searching for and making sense of relationships among values and making comparisons that involve more than just two values at a time.

To perform these operations and see relationships among data, which exhibit themselves as patterns, trends, and exceptions, we need a picture of the data. When information is presented visually, it is given form, which allows us to easily glean insights that would be difficult or impossible to piece together from the same data presented textually. (p. 30).

Data visualization can be useful in presenting results as well. Particularly, “Graphics reveal data features that statistics and models may miss: unusual distributions of data, local patterns, clusterings, gaps, missing values, evidence of rounding or heaping, implicit boundaries, outliers, and so on” (Unwin, 2020, p. 2). This study includes visual analytics and displays of the results with different types of visualizations, including some non-traditional charts and graphs, as a means of data analysis and presentation of findings beyond statistically significant results.

I took a course (CGT 670: Applications in Visual Analytics) and my survey data was used for a team project. The visual analytics of my survey data were completed in collaboration with my teammate, Dayu Wan, and the course instructor, Dr. Yingjie Victor Chen. In particular, the computer software coding required for the various visual analytic software tools (e.g., Python, Google Colaboratory) was done by my teammate. For the visual analytics of the survey results, the coding had to be completed both manually and with software. I cleaned the data (e.g., missing data check) and recoded the survey results in an Excel file for the visual analytics, and I completed all the interpretations of the visual analytic results.

As part of pre-processing operations, Python was used to screen and clean the data—invalid or missing data were removed. Similar to how the categorical responses were recoded in Excel for the linear regression analysis on SPSS, the categorical data were also encoded with numbers for the visualizations. For example, 0 for “Not at all aware,” 1 for “Somewhat aware,” 2 for “Fairly aware,” and 3 for “Very aware.” “Yes” was encoded for 1 and “No” was encoded for 0 in all but part 2. For part 2 of the survey (Q5-Q19), I calculated the total score for each teacher with 1 point for a correct response, 0 point for the “Not sure” response, and -1 point for an incorrect response. Then, with reference to the average ESSA knowledge score being 3.978, I set the cut score for the Average group at 4 and divided the 46 teachers into three groups: “Above Average” (i.e., ESSA knowledge score: 5 and above), “Average” (i.e., ESSA knowledge score: 4), and “Below Average” (i.e., ESSA knowledge score: 3 and below). These divided groups were used as a baseline to analyze if there were any patterns or relationships between teachers’ responses to other questions in different parts of the survey. That is, the three groups functioned as a baseline

to investigate any existing relationships between their survey answer patterns and their ESSA knowledge score.

There are two major tools used: 1. Python (Google Colaboratory) (e.g., Numpy, Pandas, Scikit-learn (K-Means), Seaborn (Heatmap)) and 2. Online Sankey Generator Tool (<https://sankey.csaladen.es>). The cluster analysis was done to roughly investigate all participants' answer-patterns from Question 5 through Question 19. Then, using the K-Means algorithm to cluster vertically, the answer-patterns among the teachers were clustered. That is, the clustering was done vertically to check if any similar answer pattern from Question 5 to Question 19 exist among the teachers' response in Q5-Q19, where a row represents a teacher. Since the research questions include the impact of teachers' ESSA awareness, the sub heatmaps were created for each group to display the teachers' answer-patterns for Question 5 through Question 19. Then, the Sankey diagram was generated to effectively compare responses selected between questions in other parts of the survey. The Sankey diagram helps to effectively analyze and visualize the flow of response options chosen between questions. For instance, a Sankey diagram can show that the number of teachers who chose "Not at all aware" for Question 1 also chose "Not at all aware" for Question 2.

CHAPTER 4. RESULTS AND DISCUSSIONS

Research Question 1 Findings and Discussion

Research Question 1 of this study is *How aware are teachers of ESSA, and what are the dynamics of ecological systems influencing teachers' awareness of ESSA specific requirements in relation to ELLs?*

How aware are teachers of ESSA?

Based on the 46 teachers' responses, more teachers claimed that they are aware of the specific requirements of ESSA for ELLs (78%) than they are aware of the transition from NCLB to ESSA (67%) to some degree. That is 10 teachers (22%) reported that they are "Not at all aware" of the specific requirements of ESSA for ELLs while 15 teachers (33%) responded that they are "Not all aware" of the transition from NCLB to ESSA (Figure 9 and Figure 10).

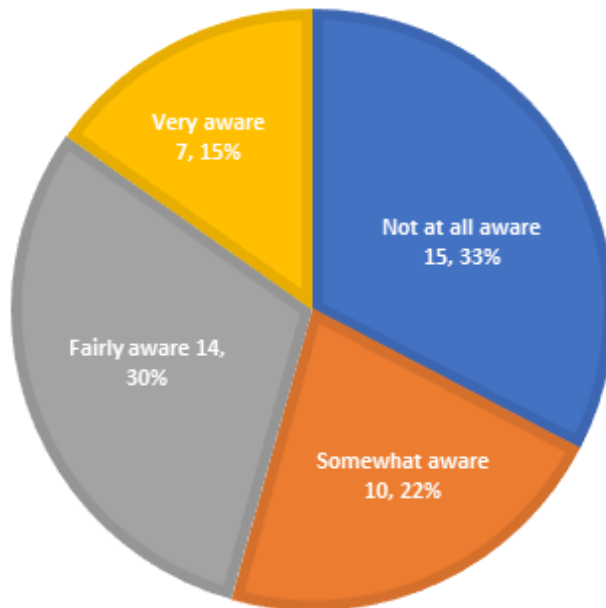


Figure 9. Distribution of Teachers Response to Q1. I am aware of the recent transition of federal educational policy from NCLB to Every Student Succeeds Act (ESSA)

More specifically, about a half of teachers (52%, 24 teachers) reported that they are either "Fairly aware" and "Somewhat aware," and only 7 teachers (15%) claimed that they are "Very aware" of the federal education policy change from NCLB to ESSA (Figure 9). Whereas, a majority of

teachers (67%, 31 teachers) claimed that they are either “Fairly aware” (19%) and “Somewhat aware” (48%) of the specific requirements of ESSA for ELLs. Here, it is notable that almost a half of the teachers (22 teachers) claimed that they are “Somewhat aware” the specific requirements of ESSA for ELLs (Figure 10).

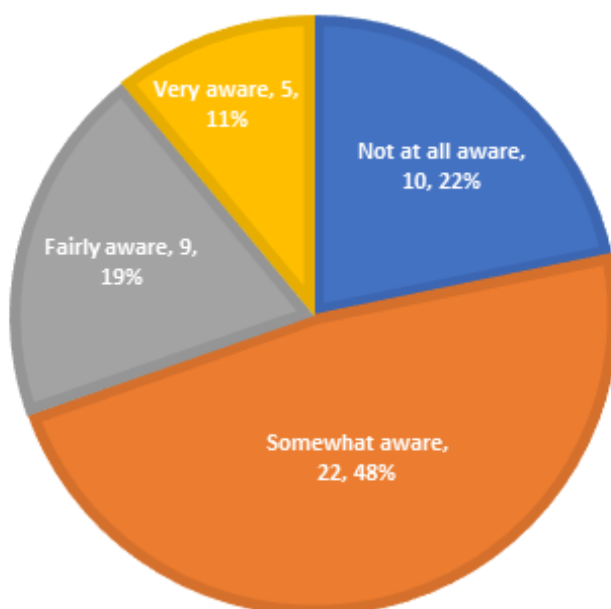


Figure 10. Distribution of Teachers Response to Q2. I am aware of the specific requirements of ESSA for ELLs

What influences teachers’ awareness of ESSA specific requirements in relation to ELLs?

For those who answered “Somewhat aware,” “Fairly aware,” or “Very aware” in Question 2 (i.e., *I am aware of the specific requirements of ESSA for ELLs*), a set of 19 subsequent choices to click “Yes” or “No” were given to indicate the people and/or sources of information that helped the teacher to become aware of the specific requirements of ESSA for ELLs. Since there were 10 teachers who answered, “Not at all aware,” a total of 36 teachers’ responses to the 19 subsequent choices are shown in Table 4.

Table 4. 36 Teachers' Response to the People and/or Sources of Information that Helped Them to Become Aware of the Specific Requirements of ESSA for ELLs (Q2 sub questions)

			Somewhat aware	Fairly aware	Very aware	Total
			22	9	5	36
Other teacher(s)	No	Count	11	2	3	16
		%	50.0%	22.2%	60.0%	34.8%
	Yes	Count	11	7	2	20
		%	50.0%	77.8%	40.0%	43.5%
School principal or other school administrators	No	Count		1	1	11
		%	40.9%	11.1%	20.0%	23.9%
	Yes	Count	13	8	4	25
		%	59.1%	88.9%	80.0%	54.3%
School or district e-mails, memos, documents, etc.	No	Count	11	6	3	20
		%	50.0%	66.7%	60.0%	43.5%
	Yes	Count	11	3	2	16
		%	50.0%	33.3%	40.0%	34.8%
Indiana Department of Education e-mails, memos, documents, etc.	No	Count	11	6	2	19
		%	50.0%	66.7%	40.0%	41.3%
	Yes	Count	11	3	3	17
		%	50.0%	33.3%	60.0%	37.0%
Articles in education newspapers, newsletters, magazines, journals, etc.	No	Count	16	8	2	26
		%	72.7%	88.9%	40.0%	56.5%
	Yes	Count	6	1	3	10
		%	27.3%	11.1%	60.0%	21.7%
TV news	No	Count	21	6	4	31
		%	95.5%	66.7%	80.0%	67.4%
	Yes	Count	1	3	1	5
		%	4.5%	33.3%	20.0%	10.9%
Internet news sites	No	Count	20	8	4	32
		%	90.9%	88.9%	80.0%	69.6%
	Yes	Count	2	1	1	4
		%	9.1%	11.1%	20.0%	8.7%
Education related websites (e.g. school, district, state, federal, professional organizations, blogs, etc.)	No	Count	17	6	3	26
		%	77.3%	66.7%	60.0%	56.5%
	Yes	Count	5	3	2	10
		%	22.7%	33.3%	40.0%	21.7%
Local newspaper	No	Count	22	9	4	35
		%	100%	100%	80.0%	76.1%
	Yes	Count	0	0	1	1
		%	0.0%	0.0%	20.0%	2.2%
Social media (e.g., Facebook, Twitter, Pinterest, online discussion group, e-mail list serve, text chats, etc.)	No	Count	17	5	4	26
		%	77.3%	55.6%	80.0%	56.5%
	Yes	Count	5	4	1	10
		%	22.7%	44.4%	20.0%	21.7%

Table 4 continued

School or district ELL/ESL specialist(s) or other district administrators	No	Count	9	4	0	13
		%	40.9%	44.4%	0.0%	28.3%
	Yes	Count	13	5	5	23
		%	59.1%	55.6%	100%	50.0%
Local, state, or national conference(s)	No	Count	19	8	2	29
		%	86.4%	88.9%	40.0%	63.0%
	Yes	Count	3	1	3	7
		%	13.6%	11.1%	60.0%	15.2%
Friends	No	Count	19	7	4	30
		%	86.4%	77.8%	80.0%	65.2%
	Yes	Count	3	2	1	6
		%	13.6%	22.2%	20.0%	13.0%
Family members	No	Count	22	9	4	35
		%	100%	100%	80.0%	76.1%
	Yes	Count	0	0	1	1
		%	0.0%	0.0%	20.0%	2.2%
Volunteers	No	Count	22	9	4	35
		%	100%	100%	80.0%	76.1%
	Yes	Count	0	0	1	1
		%	0.0%	0.0%	20.0%	2.2%
Professional development workshop at the school district level	No	Count	11	5	1	17
		%	50.0%	55.6%	20.0%	37.0%
	Yes	Count	11	4	4	19
		%	50.0%	44.4%	80.0%	41.3%
Staff meeting at the school	No	Count	10	2	2	14
		%	45.5%	22.2%	40.0%	30.4%
	Yes	Count	12	7	3	22
		%	54.5%	77.8%	60.0%	47.8%
Class(es) at college or university	No	Count	20	8	3	31
		%	90.9%	88.9%	60.0%	67.4%
	Yes	Count	2	1	2	5
		%	9.1%	11.1%	40.0%	10.9%

The 36 teachers' selection of "Yes" for each choice is presented with a heatmap (Figure 11).

Question 2	Teacher(s)	Principal/ Administrators	School/ district emails	IDOE emails	Articles	TV news	Internet news	Education websites	Newspaper	Social media	ELL specialist	Conferences	Friends	Family	Volunteers	PD	Staff meeting	Classes	Other
Somewhat aware (22)	11	13	11	11	5	1	2	5	0	5	13	3	3	0	0	11	12	2	0
Fairly aware (9)	7	8	3	3	1	3	1	3	0	4	5	1	2	0	0	4	7	1	0
Very aware (5)	2	4	2	3	3	1	1	2	1	1	5	3	1	1	1	4	3	2	0
Total (36)	20	25	16	17	9	5	4	10	1	10	23	7	6	1	1	19	22	5	0

Figure 11. A Heatmap of the Teachers’ Selection on the People and/or Sources of Information that Helped them to Become Aware of the Specific Requirements of ESSA for ELLs

The teachers who answered they are “Somewhat aware” indicated “Principal/School Administrators” and “ELL specialist” as the most helpful people, then “Staff meeting” was selected as the next helpful resource, and “Other teacher(s),” “School/ district emails,” “IDOE emails” and “Professional Development (PD) at the district level” were selected as helpful. Compared to the teachers who answered “Somewhat aware,” those who answered “Fairly aware” and “Very aware” indicated much fewer helpful people and/or resources, and none of their selections among the 19 options were higher than 25% (all chosen for fewer than 9).

The overall top 5 selections (more than 50%) indicated by the 36 teachers who claimed that they are aware of the specific requirements of ESSA for ELLs to some extent are: (a) “Principal/School administrators” (25 teachers); (b) “ELL specialist” (23 teachers); (c) “Staff meeting” (22 teachers); (d) “Other teacher(s)” (20 teachers); and (e) “Professional Development (PD) at the district level” (19 teachers).

The relationship between teachers’ self-claimed degree of awareness of ESSA and their actual level of knowledge of the specific requirements of ESSA for ELLs

ESSA Knowledge Score First of all, I present the computation table of each teacher’s ESSA knowledge score (Table 5).

Table 5. Computation of Individual Teacher's ESSA Knowledge Score

Teacher	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	# of Not Sure	# of correct	# of incorrect	ESSA Knowledge Score
M 20	1	1	-1	1	-1	1	1	1	1	1	1	1	1	1	1	0	13	2	11
M 12	1	1	1	1	-1	1	-1	1	1	1	0	1	1	1	1	1	12	2	9
M 1	1	1	1	-1	-1	1	1	1	1	1	-1	1	0	1	1	1	11	3	8
M 9	1	1	1	-1	-1	1	1	0	0	0	1	1	1	1	1	3	10	2	8
M 11	1	1	1	-1	-1	1	-1	0	1	1	1	1	1	1	1	1	11	3	8
M 3	1	1	1	0	0	1	-1	0	1	1	1	1	-1	1	0	4	9	2	7
M 5	1	1	1	1	-1	1	1	-1	-1	1	-1	1	1	1	1	0	11	4	7
M 6	1	1	1	0	-1	1	0	0	0	0	1	1	1	1	0	6	8	1	7
M 8	1	1	1	0	-1	1	-1	1	1	-1	0	1	1	1	1	2	10	3	7
M 19	1	1	1	0	0	1	0	0	0	0	0	1	1	1	0	8	7	0	7
R 7	1	1	1	-1	-1	1	1	-1	1	-1	1	1	1	1	1	0	11	4	7
R 15	1	0	1	0	0	1	0	0	0	0	1	1	1	1	0	8	7	0	7
R 5	0	1	1	0	-1	1	0	1	1	1	1	-1	0	1	0	5	8	2	6
R 10	1	1	1	1	1	0	-1	-1	0	1	1	-1	0	1	1	3	9	3	6
M 7	1	1	1	-1	-1	1	-1	1	1	-1	-1	1	1	1	1	0	10	5	5
M 13	1	1	1	-1	-1	1	-1	1	-1	1	1	-1	1	1	1	0	10	5	5
R 8	1	1	1	-1	-1	1	-1	1	1	-1	-1	1	1	1	1	0	10	5	5
C 1	1	1	1	-1	0	0	0	0	0	0	0	1	1	0	0	9	5	1	4
M 4	0	1	0	0	0	1	-1	0	0	0	1	1	0	1	0	9	5	1	4
M 15	0	1	1	-1	-1	1	-1	-1	1	0	1	1	0	1	1	3	8	4	4
M 21	1	0	1	0	-1	0	0	0	0	0	1	1	0	1	0	9	5	1	4
M 23	1	1	1	-1	-1	1	1	-1	-1	1	0	1	-1	1	1	1	9	5	4
M 25	1	0	1	0	-1	0	0	0	0	0	0	1	1	1	0	9	5	1	4
R 9	1	0	0	-1	-1	1	-1	0	1	1	0	1	0	1	1	5	7	3	4
R 14	1	1	1	0	-1	0	0	-1	-1	1	1	0	0	1	1	5	7	3	4
R 16	0	1	1	0	-1	1	0	1	0	0	0	-1	0	1	1	7	6	2	4
M 16	1	1	1	-1	-1	0	-1	1	1	-1	-1	1	0	1	1	2	8	5	3
M 18	1	1	1	0	-1	1	-1	0	0	0	-1	1	0	1	0	6	6	3	3

Table 5 continued

M 24	1	1	1	-1	-1	1	-1	-1	1	-1	1	-1	1	1	1	0	9	6	3
R 1	0	1	1	1	-1	1	-1	1	-1	1	-1	1	-1	0	1	2	8	5	3
R 11	1	1	1	-1	-1	1	0	-1	0	-1	-1	1	1	1	1	2	8	5	3
M 10	1	1	1	-1	0	0	0	0	0	0	0	0	0	0	0	11	3	1	2
M 26	1	1	1	0	-1	0	-1	0	0	0	0	1	0	0	0	9	4	2	2
R 2	1	1	0	0	-1	1	0	0	0	0	0	0	-1	1	0	9	4	2	2
R 3	0	1	1	-1	0	1	0	0	0	0	0	0	0	0	0	11	3	1	2
R 4	0	1	1	0	-1	1	-1	-1	0	0	0	1	0	1	0	7	5	3	2
M 2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	14	1	0	1
M 14	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	14	1	0	1
M 22	1	-1	1	0	-1	1	-1	0	0	0	1	0	-1	1	0	6	5	4	1
R 13	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	1	0	1
M 17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	0	0	0
M 27	0	0	-1	0	0	1	0	0	0	0	0	0	0	0	0	13	1	1	0
R 6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	0	0	0
R 12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	0	0	0
R 17	0	1	1	0	-1	1	-1	-1	0	0	-1	1	0	0	0	7	4	4	0
C 2	-1	-1	1	-1	-1	1	1	-1	0	0	0	0	0	0	0	7	3	5	-2

As shown in the Table 5, the highest ESSA knowledge score computed is 11 and the lowest score is -2 while the possible lowest ESSA knowledge score is -15 (all incorrect responses) and the possible highest score is 15 (all correct responses). The distribution of individual ESSA knowledge score of all 46 teachers are shown in Figure 12. It is noticeable that only 5 teachers scored higher than 7.5 which means only 5 teachers responded more than 50% of the part 2 of the survey items with correct answers.

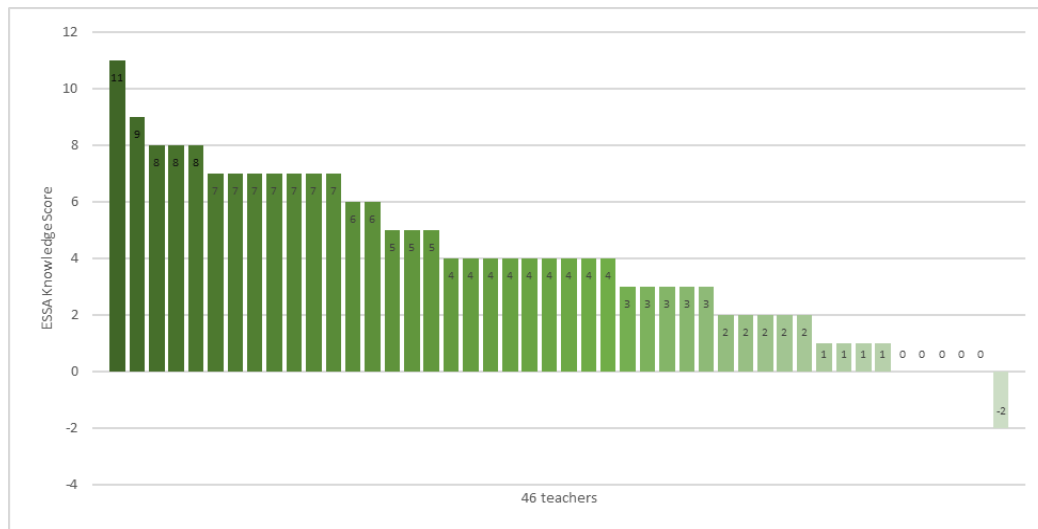


Figure 12. Distribution of Individual Teacher's ESSA Knowledge Score

In statistical analysis results, the ESSA knowledge score is the Dependent Variable (DV) and Table 6 shows the descriptive statistics of the DV (Part 2 of the survey: Q5 - Q19). The internal consistency of this part of the survey is 0.38 (Cronbach's alpha).

Table 6. Descriptive Statistics of the ESSA Knowledge Score (DV)

	Statistic	Std. Error
Mean	3.98	0.424
Median	4.00	
Std. Deviation	2.879	
Minimum	-2	
Maximum	11	

As shown in Table 6, the mean (3.98) and median (4.00) are very similar. Thus, it is safe to use mean as the measure when they are similar. Also, as shown in the box plot below (Figure 13), there are almost equal number of cases below and above the mean.

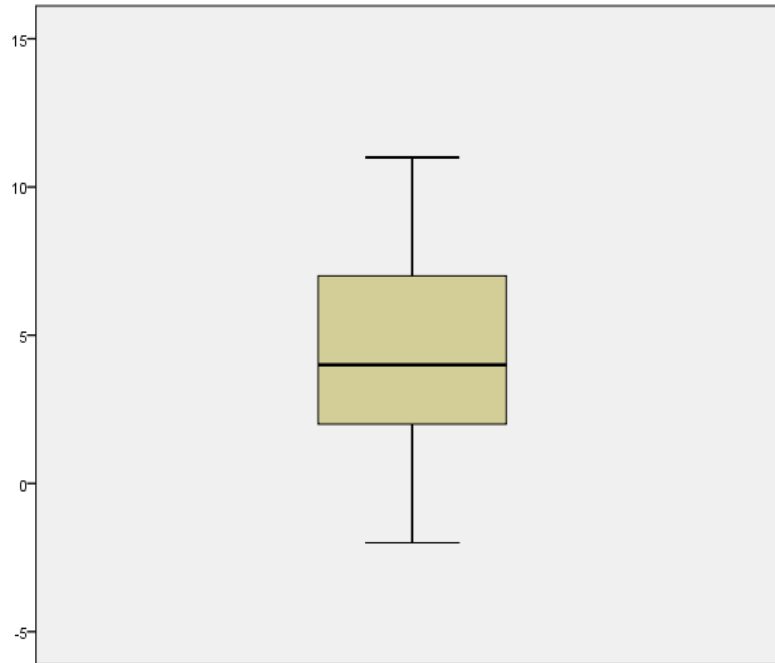


Figure 13. Box Plot of the ESSA Knowledge Score

Table 7. Tests of Normality

	Shapiro-Wilks		
	Statistic	df	Sig.
ESSA knowledge score	0.971	46	0.314

In addition, Shapiro-Wilks test is insignificant (Table 7), indicating that the ESSA knowledge score (DV) is normally distributed. Both the histogram (Figure 14) and normal Q-Q plot (Figure 15) also support that the DV is normally distributed.

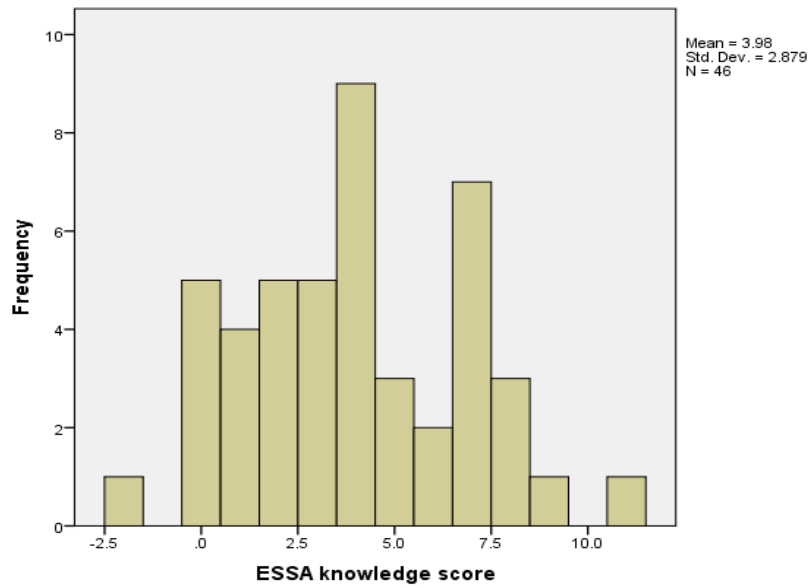


Figure 14. Histogram of the ESSA Knowledge Score

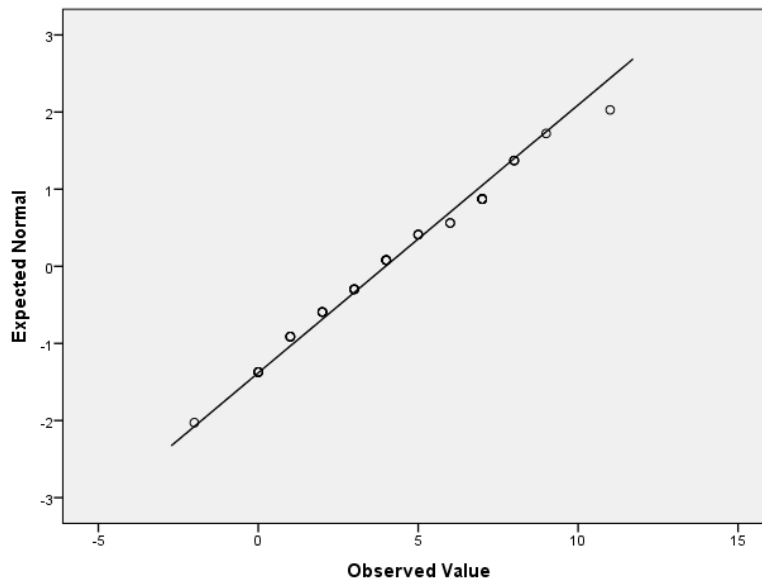


Figure 15. Normal Q-Q Plot of the ESSA Knowledge Score

To more closely look at in relation to teachers’ level of awareness of the recent transition of federal educational policy from NCLB to ESSA (Question 1), I performed the Tukey pairwise comparison to investigate the ESSA knowledge score mean difference among those who answered, “Not at all aware,” “Somewhat aware,” “Fairly aware,” and “Very aware.” Based on the Tukey pairwise comparison results (Table 8), there is a mean difference between teachers who answered,

“Not at all aware” and “Somewhat aware.” Those who answered, “Somewhat aware” scored 3 points higher on average than those who answered, “Not at all aware.” Also, the teachers who answered, “Very aware” scored 5 points higher on average than the teachers who answered, “Not at all aware” and 4 points higher on average than the teachers who answered, “Fairly aware.”

Table 8. Pairwise Comparison Result of the ESSA Knowledge Score and Q1. I am aware of the recent transition of federal educational policy from NCLB to Every Student Succeeds Act (ESSA)

(I) Q1	(J) Q1	Mean Difference		Sig.	95% Confidence Interval	
		(I-J)	Std. Error		Lower Bound	Upper Bound
Not at all aware	Somewhat	-3.033*	.888	.008	-5.41	-.66
	Fairly	-1.848	.809	.118	-4.01	.32
	Very	-5.848*	.996	.000	-8.51	-3.18
Somewhat	Not at all aware	3.033*	.888	.008	.66	5.41
	Fairly	1.186	.901	.558	-1.22	3.60
	Very	-2.814	1.072	.056	-5.68	.05
Fairly	Not at all aware	1.848	.809	.118	-.32	4.01
	Somewhat	-1.186	.901	.558	-3.60	1.22
	Very	-4.000*	1.007	.002	-6.69	-1.31
Very	Not at all aware	5.848*	.996	.000	3.18	8.51
	Somewhat	2.814	1.072	.056	-.05	5.68
	Fairly	4.000*	1.007	.002	1.31	6.69

* The mean difference is significant at the 0.05 level.

While more teachers are aware of the transition from NCLB to ESSA to some degree, the teachers who claimed “Very aware” have higher ESSA knowledge score and the teachers who claimed “Not at all aware” scored lower. As shown in Figure 16, it is observable that a teacher with the lowest ESSA knowledge score (i.e., -2) and the teachers with the second lowest score of 0 claimed that they are “Not at all aware” while a teacher with the highest score (i.e., 11) and the teachers with the second highest score of 9 have answered that they are “Very aware” of the transition from NCLB to ESSA.

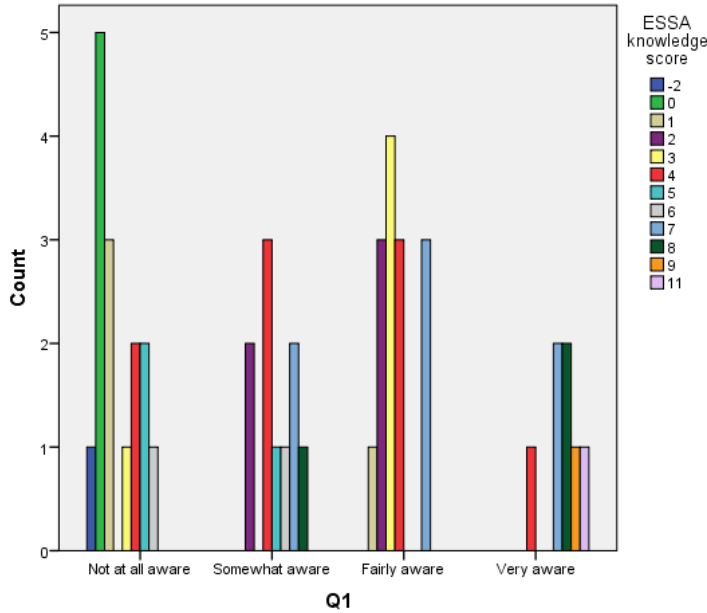


Figure 16. Bar Chart of Score Distribution per Response Category of Q1. I am aware of the recent transition of federal educational policy from NCLB to Every Student Succeeds Act (ESSA)

Additionally, the linear regression result on the awareness of the transition from NCLB to ESSA (Q1) and the ESSA knowledge score shows that the model is significant ($F_{1,44}=21.094$, $p < .001$). Teachers' awareness of the transition from NCLB to ESSA has a significant positive effect on the ESSA knowledge score ($\beta_1=1.506$, $p < .001$). The teachers who selected that they are not at all aware of the policy transition scored average of 2.047. For each unit of increase in their awareness, the total score increased on average 1.506. Hence, I can infer that teachers scored higher if they themselves declared that they are more aware of the transition from NCLB to ESSA.

The similar trend was found between the teachers awareness of the specific requirements of ESSA for ELLs (Q2) and their ESSA knowledge score. The linear regression result on the awareness of the specific requirements of ESSA for ELLs and the ESSA knowledge score display that the model is significant ($F_{1,44}=11.800$, $p = .001$). Teachers' awareness of the specific requirements of ESSA has a significant positive effect on their ESSA knowledge score ($\beta_1=1.455$, $p = .001$). The teachers who selected that they are "not at all aware" of the specifics requirements of ESSA scored 2.238 at average. For each unit of increase in their awareness, the total score increased on average 1.455. Thus, the teachers who responded that they are more aware of the specific requirements of ESSA did score higher.

Figure 17 shows the score distribution by their answer choice in Question 2. Here, the teacher with the lowest score responded that he/she is “Not at all aware” of the specific requirement of ESSA ELLs whereas the teacher with the highest score falls into the “Very aware” response category. However, the second lowest score of 0 can be seen across from the “Not at all aware” category to the “Fairly aware”. The teacher who has the second highest score (i.e., 9) responded that he/she is “Fairly aware” rather than “Very aware”. What is also interesting in Figure 17 is that among those who responded that they are “Very aware” of the specific requirements of ESSA for ELLs, there is no teacher who scored 7 which is a comparatively high score while two teachers with score 7 claimed that they are “Very aware” of the transition of NCLB to ESSA (Q1) in Figure 16.

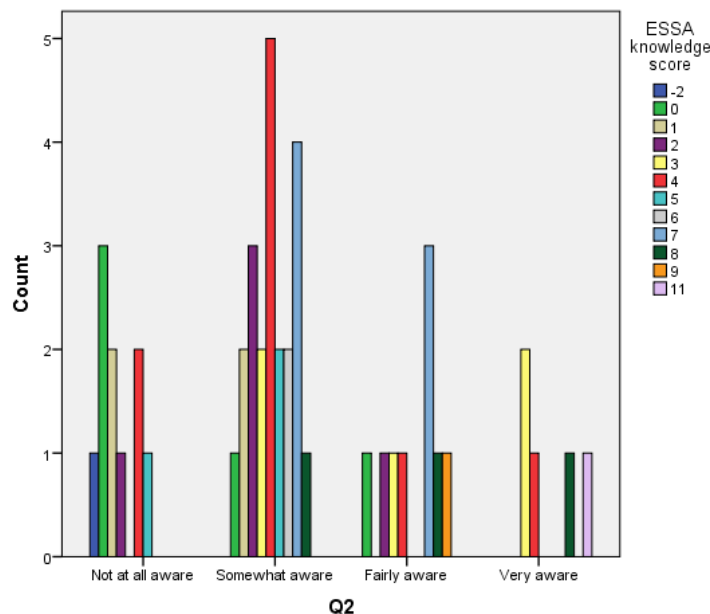


Figure 17. Bar Chart of Score Distribution per Response Category of Q2. I am aware of the specific requirements of ESSA for ELLs

How did the teachers respond in each item and who scored high?

In this section, I present the visual analytics results and discuss the response pattern in the ESSA knowledge score section of the survey. The cluster analysis results of the ESSA knowledge score (Figure 18) displays how each teacher answered correctly or incorrectly apart from the total points they earned. Each column represents each question (Q5-Q19) and each row represents an

individual teacher. Figure 18 shows how each T/F statement of the ESSA specific requirement (Q5-Q19) was answered by each teacher (e.g., correct, incorrect, or not sure). The color represents a correct answer in red, an incorrect answer in blue, and a “Not sure” answer in grey.

Figure 18 denotes beyond which question they scored correct or incorrect from Question 5 to Question 19. This cluster analysis results (Figure 18) also shows which ESSA specific requirement was most frequently answered incorrectly. For instance, as a whole, only 1 teacher correctly answered for Question 9, and 5 teachers correctly answered for Question 8. Question 8 and Question 9 were presented as follows: *Question 8. Under ESSA, 100% of students, including ELLs, are expected to pass state ELA/Reading and Math tests by 2023 and Question 9. Under ESSA, a system of adequate yearly progress (AYP) is used to hold schools accountable for ensuring that all students, including ELLs, ultimately pass state ELA/Reading and Math Tests.*

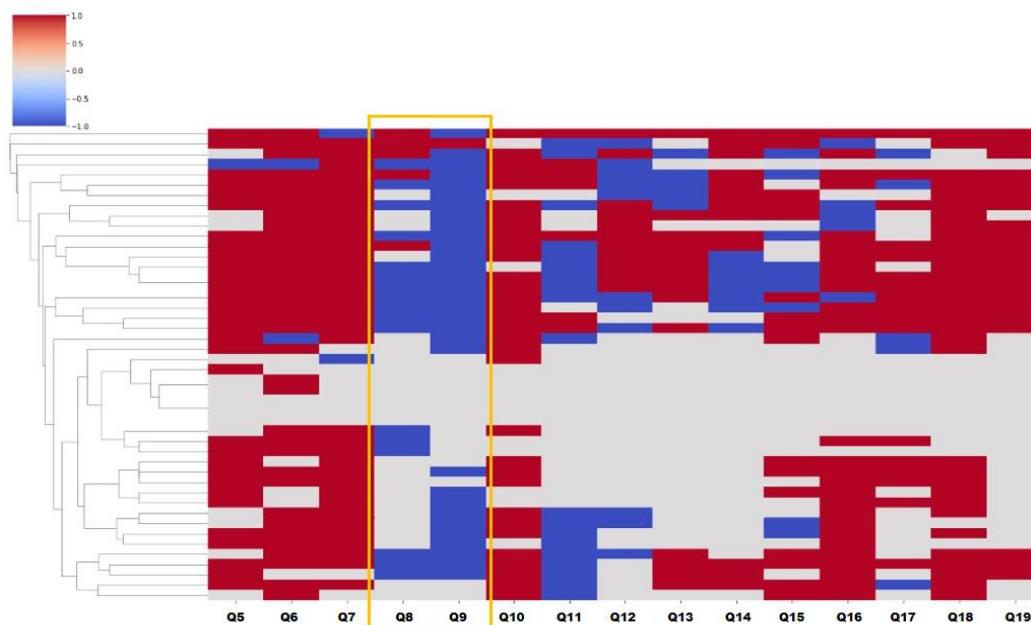


Figure 18. Cluster Analysis Result of Individual Teacher's Response Pattern in Part 2 of the Survey

Both Question 8 and Question 9 are false statements. However, most of the teachers answered incorrectly, which indicates that the majority of the teachers are not aware that 100% of students passing the state standard tests and use of AYP are no longer part of the accountability under ESSA. To further investigate if teachers who scored high overall answered also correctly in these two questions, teachers' answer patterns were analyzed in groups divided by their ESSA knowledge score.

I manually divided the teachers into three groups based on their ESSA knowledge score: “Above Average,” “Average,” and “Below Average” (Table 9). The average score is 3.978. Considering that the possible scores range from -15 to 15, only 5 out of 46 teachers scored more than 50% correct in part 2 of the survey. On the other hand, there are 5 teachers who scored 0 (no correct answer) and 1 teacher with a score of -2. Among the top 5 teachers who scored high, 4 teachers earned their elementary education teaching license far before the NCLB era, and therefore, in 2002 these 4 teachers were teaching at the beginning of the NCLB era. Compared to these top 5 teachers, the 6 teachers who scored lowest (-2 and 0) have fewer years of teaching experience and none of them were teaching at the beginning of the NCLB era.

The top 5 teachers also have taught a greater number of ELLs throughout their career than the teachers who scored lowest. One teacher (M20) who scored highest (11) among the top 5 teachers was in an ELL licensure program at the time of taking the survey and another teacher (M12) with the second highest score (9) had obtained an ELL licensure about 1-2 years ago. While 3 teachers in the top 5 group had no ELL licensure, none of the teachers had earned an ELL licensure in the group of teachers who scored 0 and below, and one teacher (R6) was in an ELL licensure program at the time of the survey. How far this one teacher (R6; score 0) was into the ELL licensure program is unknown. This implies that there may be a positive relationship between knowing more of the ESSA specific requirements and had obtained an ELL licensure or currently enrolled in an ELL licensure program.

Table 9. Three Teacher Groups Based on their ESSA Knowledge Score

	Teacher ID	ESSA knowledge score
Above Average (17 teachers, Region5-Rural: 5; Region 6- Metropolitan:12)	M 20	11
	M 12	9
	M 1	8
	M 9	8
	M 11	8
	M 3	7
	M 5	7
	M 6	7
	M 8	7
	M 19	7
	R 7	7
	R 15	7
	R 5	6
	R 10	6
	M 7	5
	M 13	5
	R 8	5
Average (9 teachers, Region 3-College town: 1; Region5-Rural: 3; Region 6-Metropolitan: 5)	C 1	4
	M 4	4
	M 15	4
	M 21	4
	M 23	4
	M 25	4
	R 9	4
	R 14	4
	R 16	4
Below Average (20 teachers, Region 3-College town: 1; Region5-Rural: 9; Region 6-Metropolitan: 10)	M 16	3
	M 18	3
	M 24	3
	R 1	3
	R 11	3
	M 10	2
	M 26	2
	R 2	2
	R 3	2
	R 4	2
	M 2	1
	M 14	1
	M 22	1
	R 13	1
	M 17	0
	M 27	0
	R 6	0
	R 12	0
	R 17	0
	C 2	-2

Response pattern among ESSA knowledge score groups (Above average, Average, and Below average)

The following clustering analysis results of Figure 19, 20, and 21 show the teachers' answer pattern for Q5-Q19 in each of the manually divided teacher groups.

Answer pattern of the Above Average group

There are 17 teachers (5 teachers from Region 5 and 12 teachers from Region 6) who scored above average. Their scores range from 5 to 11. In fact, only 5 teachers out of 46 participants correctly answered more than a half of the questions in the ESSA knowledge score section of the survey. The one and only teacher (R10) who correctly answered Question 9 received a total ESSA knowledge score (i.e., 6) above the average, but is not the teacher who received the highest total ESSA knowledge score. In fact, this teacher (R10) is the only teacher who correctly answered both Question 8 and Question 9.

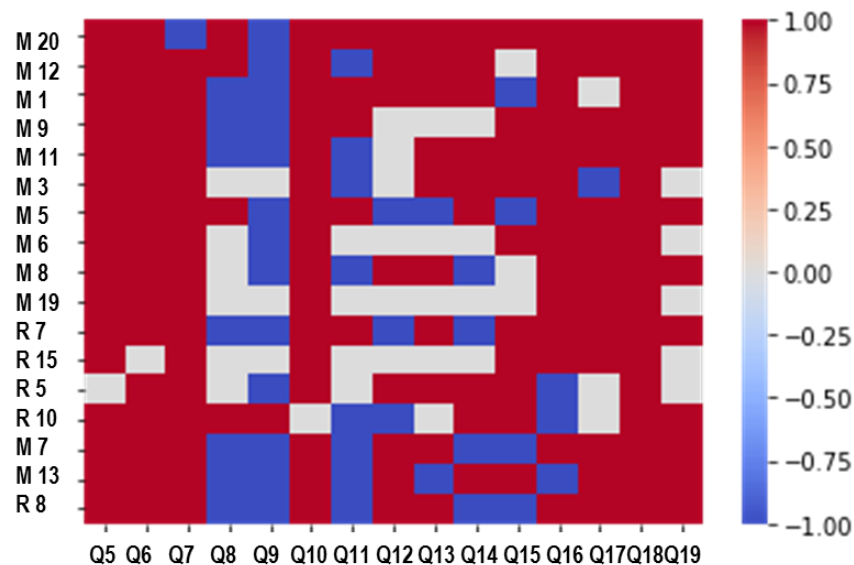


Figure 19. Teachers' Answer Pattern of Q5-Q19 in the Above Average Group

Additionally, 4 out of 5 teachers who correctly answered Question 8 (including R10) are in this above average group. Compared to the teachers in the average and below average groups, the teachers selected much fewer "Not sure" answer choice in the ESSA knowledge section of the survey. The 3 teachers who scored high (total score of 11, 9, and 8 respectively) and the 3 teachers who scored low (total score 5) in this group rarely selected "Not sure" as their answer choice. The

7 teachers who scored 7 and one teacher who scored 8 selected “Not sure” answer the most in the above average group, and it is notable that these 7 teachers who scored 7 by selecting “Not sure” more frequently in this group correctly answered fewer than the half of the questions in the ESSA knowledge section.

Answer pattern of the Average group

There are 9 teachers (1 teacher from Region 3, 3 teachers from Region 5, and 5 teachers from Region 6) who scored the average (score 4). No teachers in this group correctly answered both Question 8 and Question 9 which seem to be hardest questions for teachers to select the right answer.

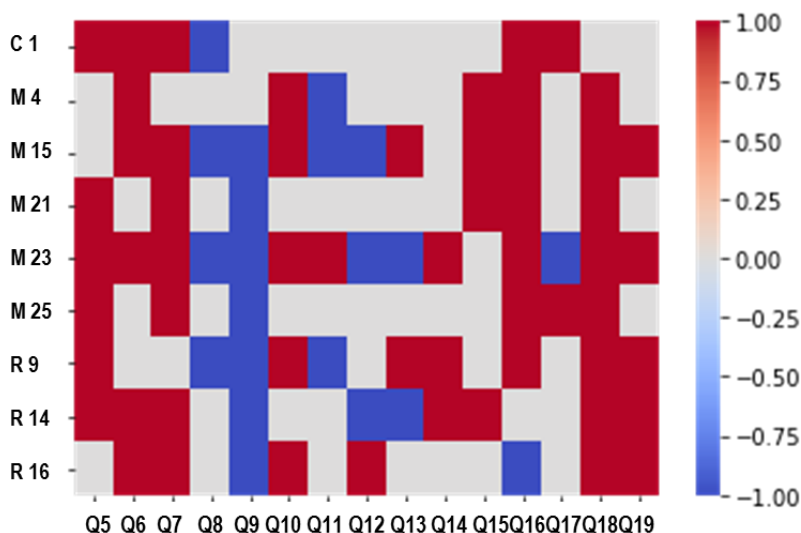


Figure 20. Teachers' Answer Pattern of Q5-Q19 in the Average Group

All 9 teachers selected at least one “Not sure” answer choice in the ESSA knowledge section of the survey. Most of these teachers correctly answered the first three questions (Q5, Q6, and Q7) at the beginning and last two questions (Q18 and Q19) at the end of the ESSA knowledge section of the survey. This current answer pattern is also shown by the teachers in the above average group. This noticeable answer pattern might suggest that knowing these five questions are critical for teachers to be more knowledgeable of the specific requirements of ESSA in relation to ELLs. The five questions are shown as follows: Q5. *Under ESSA, the required statewide tests include the following: annual testing in English Language Arts/Reading and Math in grades 3-8 and once in high school for all students, and annual English language proficiency assessments in*

grades K-12 for all ELLs; Q6. Under ESSA, individual schools are held accountable for ELL progress in attaining English language proficiency; Q7. Under ESSA, ELLs are defined in part as students whose difficulties in speaking, reading, writing, or understanding the English language may prevent them from achieving successfully in classrooms where the language of instruction is English; Q18, Under ESSA, the academic progress (i.e., growth) in English/Language Arts and Math is one of the measurements of school accountability in Indiana; and Q19. ESSA requires states to use federal funds to increase the English language proficiency of ELLs by providing effective language instruction educational programs that increase **both** language proficiency (e.g., ESL; ELD) and student academic achievement (e.g., content-area instruction).

Answer pattern of the Below Average group

There are 20 teachers (1 teacher from Region 3, 9 teachers from Region 5, and 10 teachers from Region 6) whose scores range from -2 to 3 in the below average group. It is noticeable that one of the 5 teachers who correctly answered Question 8 is from this group while no teachers selected the correct answer for Question 8 in the average group.

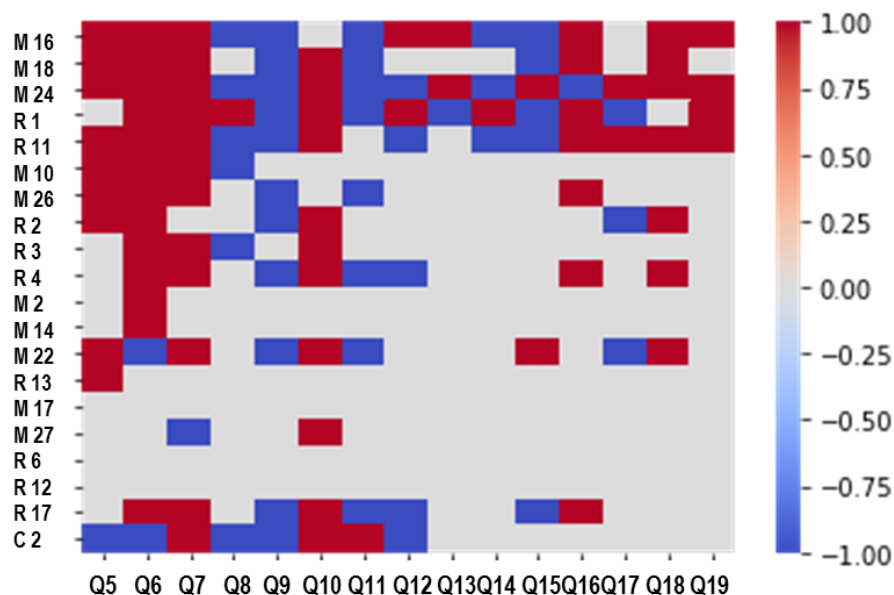


Figure 21. *Teachers' Answer Pattern of Q5-Q19 in the Below Average Group*

Also, the “Not sure” answer choice was selected largely by the teachers in this below average group compared to teachers in both of the average and above average groups. Three teachers (R12, R6, and M17) in this group selected only the “Not sure” answer choice for all questions in the

ESSA knowledge section of the survey. In fact, only one teacher (M24) in this group answered “Yes” or “No” to all questions in the ESSA knowledge section.

Figure 22 is a Sankey diagram that is often used to depict a flow from one set of values to another and the width of each flow is based on its quantity (proportional to the flow rate). Each node, a category, is represented by a rectangle. The taller the size of the rectangle indicates that a greater number of teachers selected that category. In this particular Sankey diagram, the proportional rate of three groups (Above Average, Average, and Below Average) in relation to their overall demographic profile can be shown. In fact, since this is a static captured image of the chart, the specific quantity in each flow cannot be shown but the number is shown when the mouse cursor is on the line. The thicker the line also indicates more quantity.

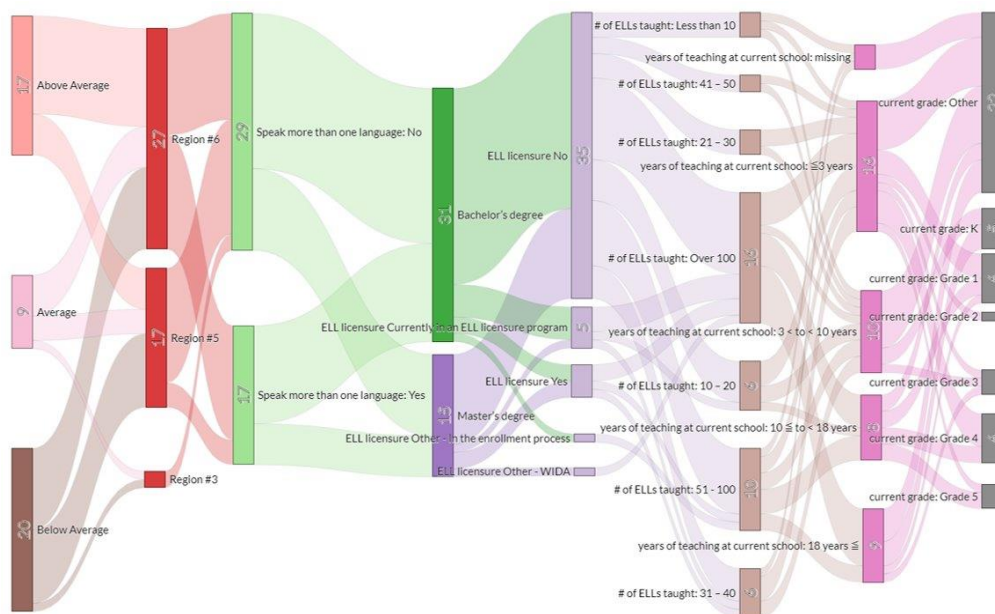


Figure 22. A Sankey Diagram of the Teachers’ Demographic Profiles

The far left three nodes denote the number of teachers in each group (Above Average, Average, and Below Average). In this static view, all 26 teachers’ overall demographic profile is presented regardless of statistical significance in relation to their ESSA knowledge score. For instance, the majority of the teachers in the Above Average group are from the Region 6 (i.e., Metropolitan area) and rest of them are from Region 5 (i.e., Rural area). About a half of the teachers (13) from Region 6 reported that they can speak more than one language while a majority of

teachers (14) from the Region 5 claimed that they cannot speak more than one language. Meanwhile both teachers from Region 3 (i.e., College town) answered that they do not speak more than one language. Out of these 29 teachers who do not speak more than one language, 19 teachers have a Bachelor's degree and 10 teachers have a Master's degree.

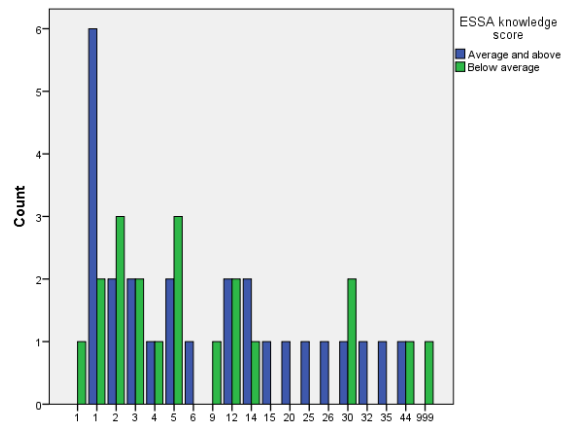
Figure 22 also easily shows out of 31 teachers with a Bachelor's degree, 24 teachers have no ELL licensure, 4 teachers are currently in an ELL licensure program, 2 teachers have earned a ELL licensure, 1 teacher is in the process of enrollment to an ELL licensure program. In relation to the number of ELLs they have taught throughout their careers, the most selected category was "Over 100 ELLs" as chosen by 16 teachers. Among these 16 teachers who have taught over 100 ELLs, 10 of them have no ELL licensure, 2 of them have an ELL licensure, 3 of them are in the ELL licensure program, and 1 of them answered "Other" regarding whether having an ELL licensure, then wrote "WIDA" in the open-ended text box next to "Other."

At the same time, there is a large variation of the years of teaching at the current school among these 16 teachers who have taught over 100 ELLs: ≤ 3 years, 4 teachers; $3 < \text{to} < 10$ years, 1 teacher; $10 \leq \text{to} < 18$ years, 4 teachers; $18 \text{ years} \leq$, 7 teachers. Here, I have created these years of teaching categories to see if any distinct pattern is found among the teachers in response to in what policy era a teacher has started teaching at the current school. The categories are: ≤ 3 years (started teaching in 2016 and later); $3 < \text{to} < 10$ years (started teaching between 2010 and 2015: the NCLB flexibility era); $10 \leq \text{to} < 18$ years (started teaching between 2002 and 2009: the NCLB era); and $8 \text{ years} \leq$ (started teaching in 2001 or before). In this diagram, no prominent pattern exists merely based on their years of teaching.

The majority (7 teachers) of the 9 teachers who have taught for more than 18 years at the current school have taught over 100 ELLs and two of them have taught between 51 and 100 ELLs. The grade that these 9 teachers are currently teaching are Kindergarten (3 teachers), Grade 1 (1 teacher), Grade 3 (1 teacher), and Other (4 teachers). Most of the teachers who responded "Other" for the current grade they are teaching may be teaching multiple grades in a school or at multiple schools in a school district. Looking at the far right side of the diagram, it is noticeable that most of the participants, 22 teachers, answered "Other" for the grade they are currently teaching.

In brief, with these 46 participants, as discussed previously and the distribution of their ESSA knowledge score displayed in the figures below, there is no association found between their

ESSA knowledge score and personal factors such as years of teaching (Figure 23), educational level (Figure 24), and completion of an ELL licensure (Figure 25).



Note. The years of teaching (X-axis) based on teachers' report
 * 999 indicates missing data

Figure 23. Bar Chart of Years of Teaching and Teachers' ESSA Knowledge Score

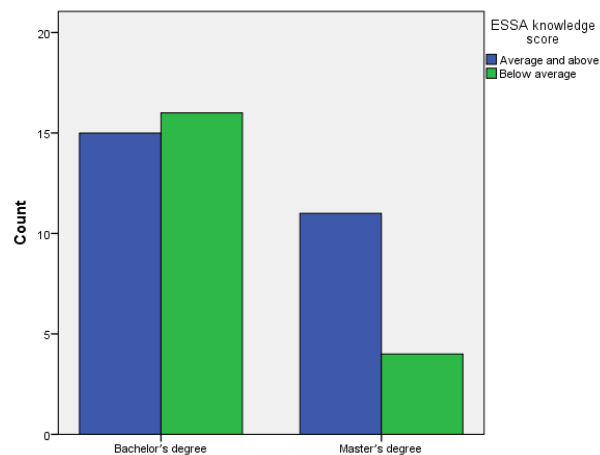


Figure 24. Bar Chart of Educational Level and Teachers' ESSA Knowledge Score

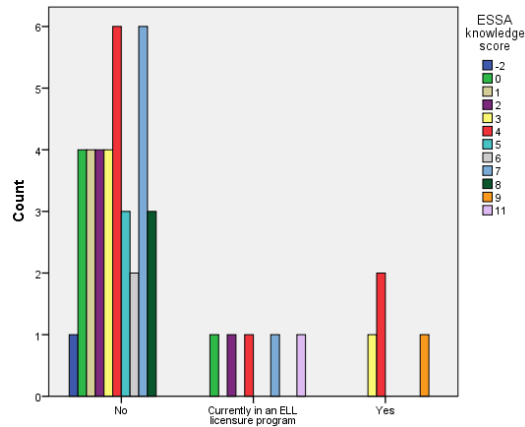


Figure 25. Bar Chart of ELL Licensure Completion and Teachers' ESSA Knowledge Score

Indeed, teachers' awareness of the specific requirements of ESSA found to have a significant positive effect on their ESSA knowledge score. Among the 36 teachers who reported that they are aware of the ESSA requirements for ELLs to some degree, the contextual factors that helped them to be aware of the specific requirements of ESSA for ELLs are 1) "Principal/School administrators"; 2) "ELL specialist"; 3) "Staff meeting"; 4) "Other teacher(s)"; and 5) "Professional Development (PD) at the district level" within the microsystem of the ecological system theory.

In addition, some other contextual factors in the microsystem that could positively influence teachers' ESSA knowledge score seems to be looking up books about teaching ELLs (Figure 26(a)) and reaching out to an ELL specialist at the school or district level (Figure 26(b)) when they have questions or concerns about teaching ELLs. In terms of assessment, when teachers have questions or concerns about assessing ELLs in their classrooms, reaching out to an ELL specialist at the school or district level (Figure 27(a)) and reaching out to school administrative (Figure 27(b)) could positively influence teachers' ESSA knowledge. It is noticeable that more teachers who scored average and above responded that they contact an ELL specialist at the school or district level when they have concerns or questions in relation to teaching and assessing ELLs than the teachers who scored below average.

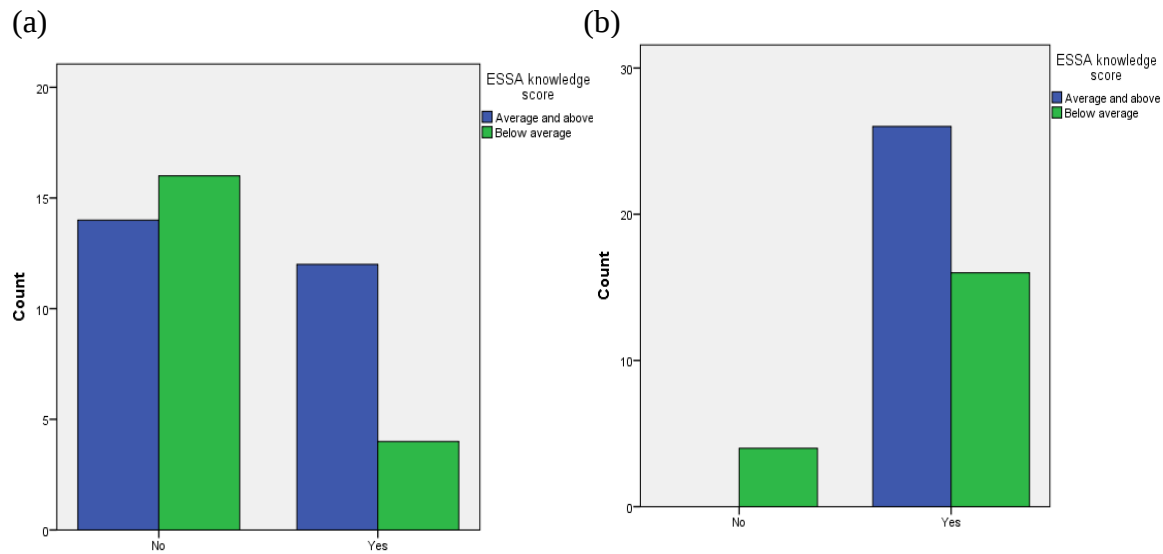


Figure 26. Bar Chart of Teachers' ESSA Knowledge Score for Those who Selected "Yes" for (a) "I look up books about teaching ELLs" and (b) "I contact an ELL specialist at the school or district level"

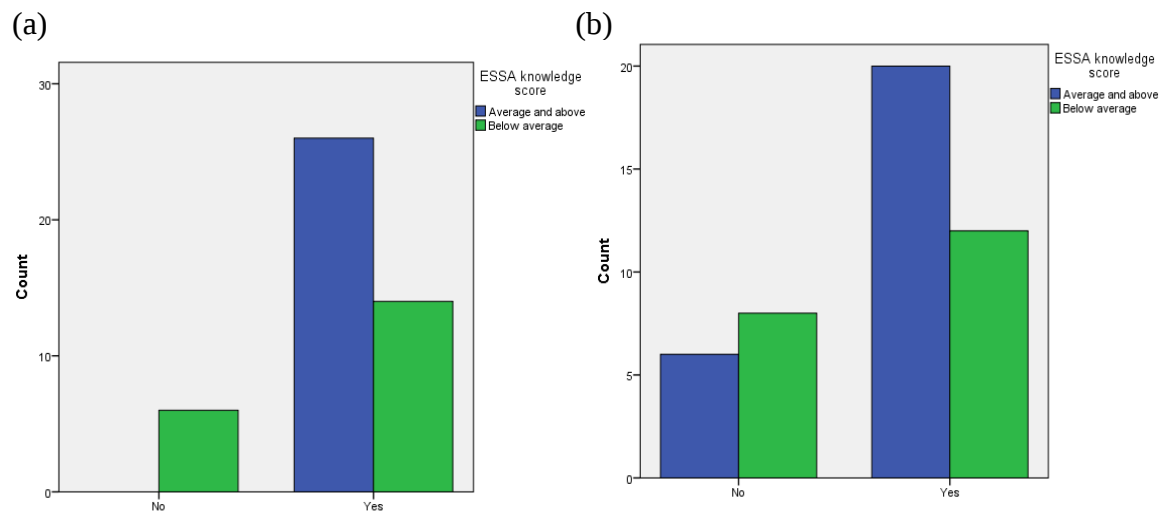


Figure 27. Bar Chart of Teachers' ESSA Knowledge Score for Those who Selected "Yes" for (a) "I contact an ELL specialist at the school or district level" and (b) "I contact school administrators"

Among the factors in the exosystem, in general, interacting with an ELL specialist would help increase teachers' awareness of ESSA the most. This signifies the importance of having a knowledgeable ELL specialist in schools who would allow more symbiotic relationship as to

benefit the teachers to have a greater understanding of ESSA, which eventually will benefit all students including English language learners in their classrooms.

The complexity and challenge of bridging the gap between policy formulation and implementation has already been designated (Abuya, B. A., Admassu, K., Ngware, M., Onsomu, E. O., & Oketch, M. (2015). Also, Darling-Hammond (1990) stressed that “teachers teach from what they know. If policymakers want to change teaching, they must pay attention to teacher knowledge” (p. 346). However, based on my survey results, the teachers are still not highly informed of what has changed from NCLB to ESSA as demonstrated by their low ESSA knowledge score overall (e.g., the mean ESSA knowledge score was 4 out of 15). In the following section, while a limited number of teachers have some knowledge of ESSA specific requirements for ELLs to varying degree, the association between their ESSA knowledge score in relation to their classroom practices is presented.

Research Question 2 Findings and Discussion

The second research question of this study explores *To what extent do contextual factors and teachers’ personal factors influence their awareness of ESSA in relation to instructing and accessing ELLs?*

Teachers’ ESSA knowledge score and classroom practices

The overall teachers’ responses in relation to their classroom practices (Q20-Q23) are displayed below (Figure 28).

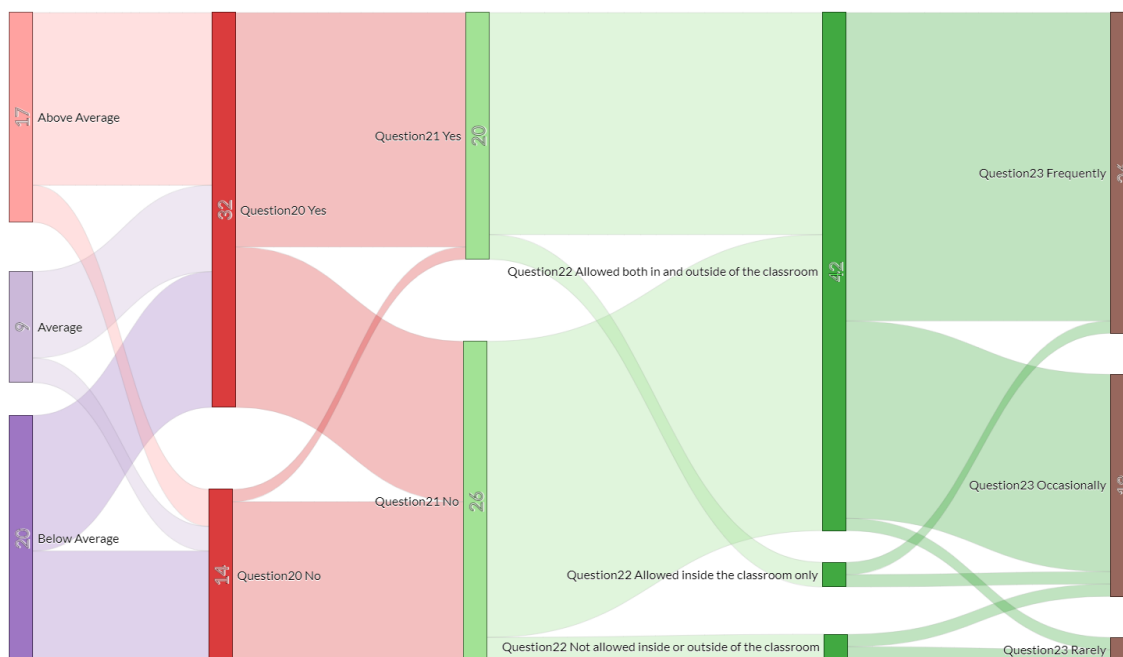


Figure 28. A Sankey Diagram of Teachers' Response Flow Among Different ESSA Knowledge Score Groups Regarding Their Classroom Practices

There are a few observable trends. First, the majority of teachers (14 teachers) who scored above average reported that they have made changes to both of their instructional practices (Q20) and assessment practices (Q21) for ELLs in response to the new ESSA requirements. Furthermore, in general, more teachers made changes to their instruction practices (32 teachers) than assessment practices (20 teachers) for ELLs. In addition, regardless of whether they made changes to their assessment practices for ELLs, the majority of the teachers (42 teachers) reported that their schools allow students and teachers to use languages other than English for social and academic purposes (Q22) both in and outside of the classroom. However, what is noteworthy is that these 42 teachers' degree of allowing their ELLs to use their home languages in classroom (Q23) differs: "Frequently" (25 teachers); "Occasionally" (16 teachers), and "Rarely" (1 teacher). This may denote that not all teachers' classroom language policy corresponds to the school language policy.

Out of 46 teachers, 32 teachers (69.6%) answered "Yes" in Question 20 and 20 teachers (43.5%) answered "Yes" in Question 21, and 14 teachers (30.4%) answered "No" in Question 20 and in 26 teachers (56.5%) answered "No" in Question 21 (Table 10). Overall, more teachers made changes to their instruction practices (Q20) than to their assessment practices (Q21) for ELLs in their classroom in response to the new ESSA requirements.

Table 10. Cross Tabulation of Q20 and Q21

		Q21		Total
		No	Yes	
Q20	No	13	1	14
	Yes	13	19	32
Total		26	20	46

As shown in Figure 29, altogether, more teachers made changes in their instruction practices (32 teachers) than in their assessment practices (20 teachers). For those who answered “Yes” that they made changes to their instructional practices (Q20) and assessment practices (Q21) for ELLs in response to the new ESSA requirements, the open-ended follow up questions of “What is changed? How is it changed?” were asked.

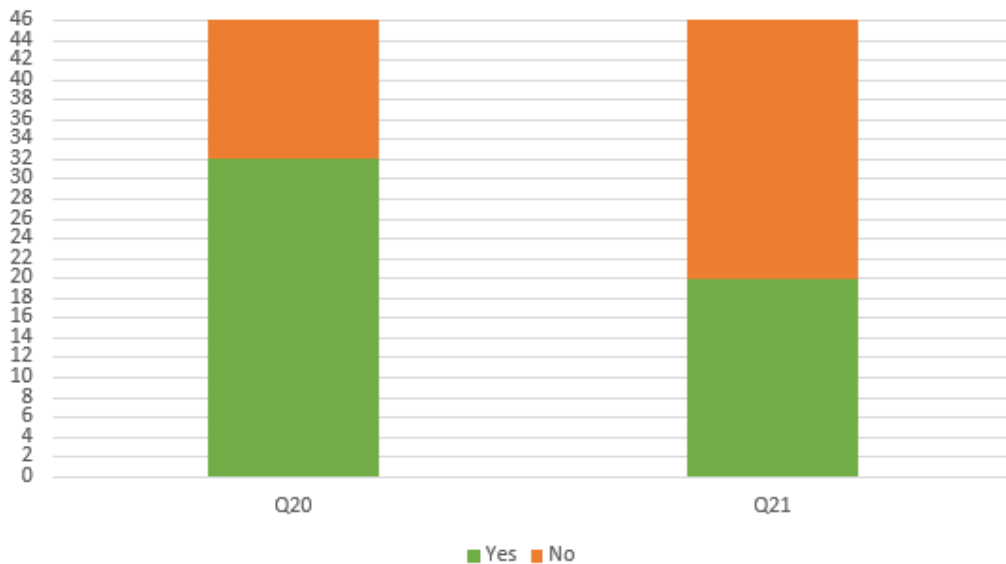


Figure 29. Teachers’ “Yes” or “No” Response Rate in Q20 (made changes to their instruction practices for ELLs) and Q21 (made changes to their assessment practices for ELLs)

The specific changes made by these 32 teachers who changed their instruction practices for ELLs under ESSA include: more visual support (e.g., more pictures); more vocabulary support (e.g., using games in vocabulary work, more connections between reading and vocabulary); more individual support/differentiation (e.g., one-on-one/ individual time in guided reading group); L1 language support (e.g., offering content in their native languages); providing cooperative learning

opportunities (e.g., hands on paring students); giving longer time to complete assignments; and having them draw more. The specific changes reported by the 20 teachers who made changes to their assessment practices for ELLs under ESSA are: assessment in their L1 (e.g., Spanish); providing accommodations (more time, reading to the ELLs, dictionaries); and using alternative assessments (e.g., portfolio of achievement, smaller assessment).

Indeed, the teachers' response patterns in Question 20 and Question 21 seem to align with teachers' responses for their preparedness to best instruct (Q3) and assess (Q4) ELLs: while only 9 teachers reported that they feel "not at all prepared" to instruct ELLs as required by ESSA, 16 teachers reported that they feel "not at all prepared" to assess ELLs as required by ESSA.

School and classroom language policy and ESSA knowledge score

Question 22 states, "In general, my school allows students and teachers to use languages other than English for social and academic purposes." The teachers' responses to Question 22 are as follows: 42 teachers (91.3%) answered "Allowed both in and outside of the classroom," 2 teachers (4.35%) answered "Allowed inside the classroom only," 2 teachers (4.35%) answered "Not allowed inside or outside on the classroom," and no teachers answered "Allowed outside the classroom only." Question 23 states "I allow my ELL students to use their home languages in my classroom." Out of 46 teachers, 26 teachers (56.5%) answered "Frequently," and 18 teachers (39.1%) answered "Occasionally," 2 teachers (4.4%) answered "Rarely," and no teachers answered "Never."

Based on the linear regression analysis of each Question 22 and Question 23 and the ESSA knowledge score, no significant relationship was found. That is, statistically, the school environment of allowing students and teachers to use languages other than English (Q22) and the classroom language policy of allowing home language usage for their ELLs (Q23) do not have an impact on the teachers' ESSA knowledge score.

Helpful resource when teachers have questions or concerns about teaching and assessing ELLs

Next, the teachers were asked where they typically turn to for help when they have questions or concerns about teaching (Question 24) and assessing (Question 25) their ELLs, and the following 10 Yes or No prompts were given: I usually talk to teacher(s) in my same grade level (24-1; 25-1); I usually talk to teacher(s) with more years of teaching (24-2; 25-2); I search internet (e.g.,

Google) (24-3; 25-3); I look up books about teaching/assessing ELLs (24-4; 25-4); I contact an ELL specialist at the school or district level (24-5; 25-5); I contact school administrators (24-6; 25-6); I contact school staff (24-7; 25-7); I contact family members (24-8; 25-8); I contact friends outside school (24-9; 25-9); Other (open ended answer) (24-10; 25-10).

The percentage table (Table 11) of Question 24 and Question 25 shows that when the mean is greater than 0.5, it means more teachers clicked “Yes” (1) than “No” (0).

Table 11. Response Choice Selection of “Yes” or “No” in Q24 and Q25

	Q24	Q25
1. Talk to teachers(s) in the same grade	.78	.72
2. Talk to teacher(s) w/ more years of teaching	.57	.54
3. Search internet	.54	.39
4. Look up books	.35	.28
5. Contact an ELL specialist	.91	.87
6. Contact school administrators	.63	.70
7. Contact school staff	.70	.57
8. Contact family members	.39	.20
9. Contact friends outside school	.22	.17
10. Other	.13	.09

Except “search internet,” the teachers have similar response patterns. If they clicked more “Yes” in Question 24, they also clicked more “Yes” in Question 25. However, for “search internet” choice, more teachers said they search internet when they have questions about teaching ELLs (more Yes for Q24-3), but fewer teachers search the internet when they have questions about assessing ELLs (more No for Q25-3). For the choice of “I usually talk to teacher(s) with more years of teaching,” about half of teachers answered “Yes” and the other half answered “No.”

The linear regression results between teachers’ ESSA knowledge score (DV) and their response on where they typically turn to for help when they have questions or concerns about teaching their ELLs (Q24) show that there is no difference when put all together. However, to improve the model by deleting the most insignificant variables, some variables (Q24-3; Q24-4) became significant. Either Q24-3 or Q24-4 is sufficient to explain the variation in the score individually since either one was significant (Q24-3, $p = .237$; Q24-4, $p = .099$). However, when they are put into the model together, Q24-4 (i.e., Look up books) shows a significant relationship with their score. The teachers who said they look up books about teaching ELLs scored

significantly higher than teachers who did not look up books ($p = .022$). Each teacher who selected “Yes” that they look up books, their average score increased by 2.189 points.

Furthermore, in relation to their response on where they typically turn to for help when they have questions or concerns about assessing their ELLs (Q25) and their ESSA knowledge score (DV), the linear regression results show that there is no difference when put all together except Q25-4 and Q25-10 (Table 12). Therefore, to improve the model, the insignificant variables were deleted. The model was found to be more stable when putting together only 25-4 (i.e., Look up books) and 25-10 (i.e., Other) in the model since the model had better goodness of fit (Table 13).

Table 12. A Regression Analysis of the Full Model of Q25 (i.e., where they typically turn to for help when they have questions or concerns about assessing their ELLs)

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Model		B	Std. Error	Beta		
1	(Constant)	3.027	1.318		2.296	.028
	Q25-1	-.920	1.147	-.145	-.802	.428
	Q25-2	-.711	1.062	-.124	-.669	.508
	Q25-3	-1.287	1.156	-.221	-1.114	.273
	Q25-4	2.272	1.078	.359	2.107	.042
	Q25-5	1.933	1.414	.229	1.367	.180
	Q25-6	-.014	1.172	-.002	-.012	.991
	Q25-7	.083	1.097	.014	.076	.940
	Q25-8	2.037	1.482	.284	1.374	.178
	Q25-9	.939	1.548	.125	.606	.548
	Q25-10	-4.838	2.279	-.479	-2.123	.041

Table 13. Improved Model that Only Contains the Significant Variables from the Full Model

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Model		B	Std. Error	Beta		
1	(Constant)	3.576	.478		7.474	.000
	Q25-4	2.424	1.034	.383	2.346	.024
	Q25-10	-3.250	1.652	-.322	-1.968	.056

For Q25, the teachers who look up books about assessing ELLs (Q25-4) scored higher in general whereas the teachers who said they turn to “Other” tend to score lower (Table 13). Indeed, it can be inferred that turning to the “Other” resource (e.g., translator) only is not positively related to scoring higher.

Then, I created a treemap for each of the ESSA knowledge score groups in response to their answer selections in Question 24 and Question 25 (Figure 30). The same 10 response choices (Same grade teacher(s), More experienced teacher(s), Internet, Books, ELL specialist, Administrators, Staff, Family, Friends, Other) were given to the teachers to select “Yes” or “No” by asking where they typically turn to for help when they have questions or concerns about teaching (Q24) and assessing (Q25).

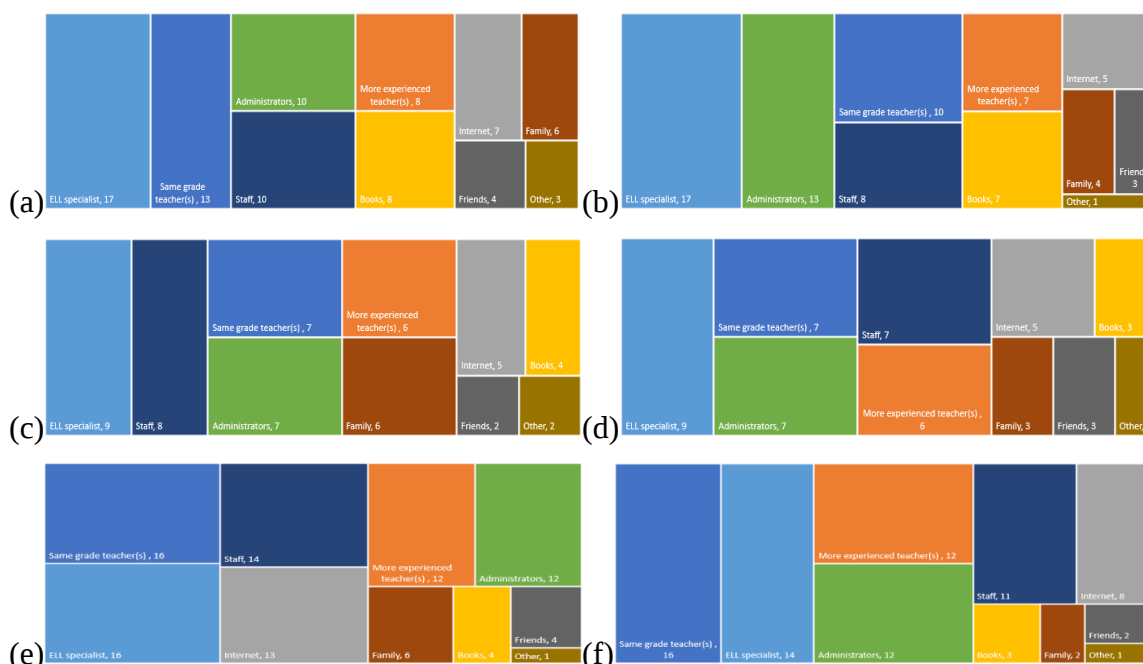


Figure 30(a) The Above Average group’ response in Q24 (b) The Above Average group’ response in Q25 (c) The Average group’ response in Q24 (d) The Average group’ response in Q25 (e) The Below Average group’ response in Q24 (f) The Below Average group’ response in Q25

The teachers who scored above average typically turn to an ELL specialist the most when they have questions or concerns about teaching and assessing the ELLs. This pattern is also seen in the average group. However, the teachers who scored below average turn to a same grade teacher(s) the most when they have questions or concerns about assessing ELLs, and turn to a same

grade teacher(s) and an ELL specialist the most when they have questions or concerns about teaching their ELLs. The bottom 5 fewer choices selected by all teachers in three groups also display similar pattern (Books, Internet, Family, Friends, Other).

While the above average teacher group typically turn to “Books” more than the “Internet,” the average group and below average group typically turn to the “Internet” more than “Books” when the teachers have questions or concerns about either teaching or assessing ELLs. Interestingly, the teachers with the below average score typically search the Internet (top 4 choice selected) when they have questions or concerns about teaching ELLs. Another notable pattern is that all teachers in three groups talk to teacher(s) in the same grade more than to teacher(s) with more years of teaching. In general, the teachers in all groups typically contact school staff and school administrators more than talking to teacher(s) with more years of teaching.

Preparedness to teach and assess ELLs under ESSA

Next, whether the teacher have received some training in teaching (Q27) and assessing (Q28) ELLs after receiving a bachelor’s degree or ELL licensure or not were asked. A larger number of teachers (34; 75.9%) claimed that they had received some training in teaching ELLs (Q27), yet only 21 out of these 34 teachers also claimed that they had received some training in assessing ELLs (Q28). Nonetheless, 2 teachers who reported that they did not receive some training in teaching ELLs (Q27) claimed that they have received some training in assessing ELLs (Q28). Statistically whether teachers have received some training in teaching ELLs (Q27) and assessing ELLs (Q28) after earning BA degree were not significantly related to their ESSA knowledge score.

Statistically, while their feeling of preparedness to teach ELLs based on the amount of training they received (Q29) was not significant, their feeling of preparedness to assess ELLs based on the amount of training they received (Q30) found to be significant. The linear regression result of Question 30, *Based on the amount training I have received, I feel prepared to assess ELLs in classroom*, was statistically significantly related to their ESSA knowledge score ($F_{1,44} = 7.625$; $p = .008$). The teachers who claimed that they feel more prepared to assess ELLs based on the training they received (Q30) scored significantly higher ($p = .008$). For each level increase of the preparedness, the teacher would score on average 1.293 higher. For example, if a teacher selected “adequately prepared,” this teacher would score 1.29 higher than another teacher who selected

"very little prepared" and would score 2.59 points (1.29*2) higher than a teacher who answered, "not at all prepared." This result suggests that those who feel more prepared to assess ELLs with the amount of trainings they received would be more knowledgeable of the specifics of ESSA requirements for ELLs.

Beyond statistical analysis results, in relation to their feeling of preparedness to teach (Q29) and assess (Q30) ELLs based on the trainings they received after completing their bachelor's degree or ELL licensure, a majority of teachers answered "Adequately prepared" for both teaching (28 teachers) and assessing (21 teachers) ELLs in their classrooms based on the training they received. In fact, very few teachers feel "Very prepared" to either teach (7 teachers) or assess (6 teachers) ELLs in their classrooms despite receiving some training. This answer pattern recognizes the necessity to provide more effective trainings that would support the teachers to feel more prepared with their actual classroom practices of teaching and assessing ELLs.

More specifically, only about half of the teachers (22 out of 46 teachers) have received some training in both teaching and assessing ELLs after receiving their bachelor's degree or ELL licensure (Figure 31). Roughly one fourth of the teachers (10 out of 46 teachers) reported that they have not received any training or are not sure whether they received training after earning their bachelor's degree or ELL licensure. It is also notable that there may have been fewer opportunities to receive training in assessing ELLs than teaching ELLs.

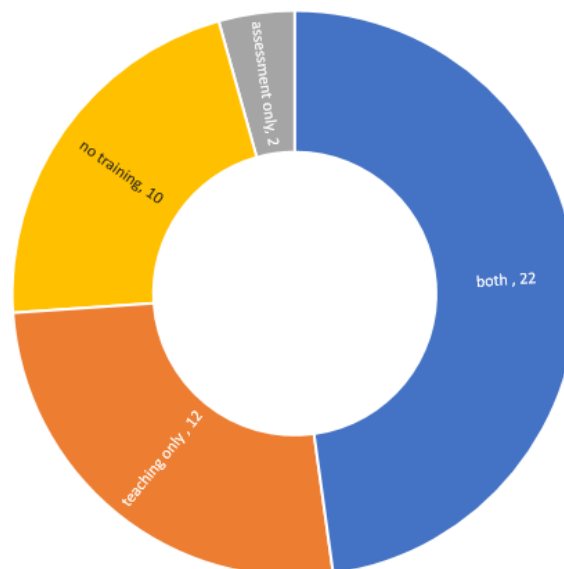


Figure 31. The Number of Teachers by the Trainings Received

For those who answered that they have received some training in teaching ELLs (Q27) and assessing ELLs (Q28), they were asked to describe the training they received in an open-ended prompt. The types of trainings they reported are shown in Figure 32.

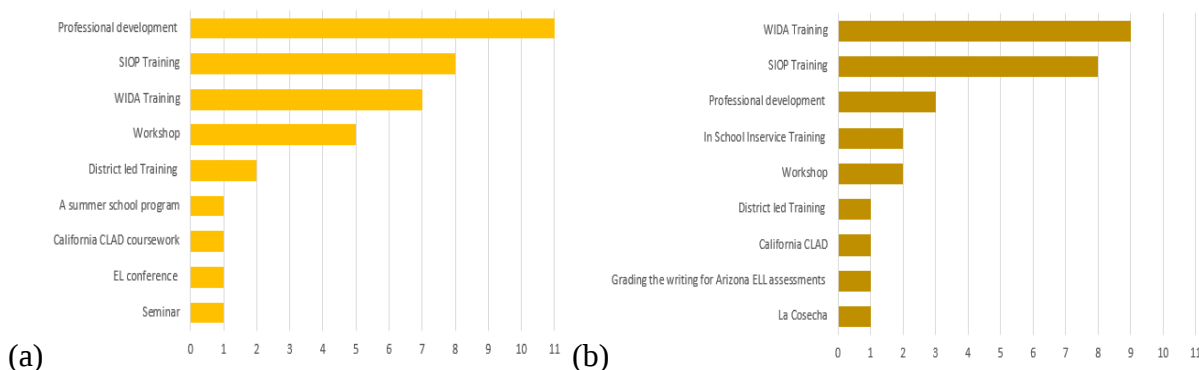


Figure 32. Reported Trainings the Teachers Received (a) in teaching ELLs (b) in assessing ELLs

Overall, the teachers reported the WIDA and SIOP trainings, and PD the most as part of their trainings received in relation to both teaching and assessing ELLs. A notable trend here is that there are more PD opportunities about teaching than assessing ELLs. This trend might be also related to the fact that fewer teachers claimed that they feel prepared to assess than to teach ELLs in their classrooms. Providing more PD or workshops that are tailored to effectively assess ELLs in classrooms should be considered.

In short, more teachers reported that they received some training in assessing ELLs than teaching ELLs. Despite the fact that teaching precedes how and what teachers assess ELLs in their classroom assessments, about 22% of teachers received no training in relation to both teaching and assessing ELLs. Furthermore, about half of the teachers have not received training in both since only 48% of teachers received trainings in both after receiving their bachelor's degree or ELL licensure. Only 4 out of 46 teachers received an ELL licensure, but how recently they received trainings remains unknown and could vary.

For the first time, ELLs' academic achievement is included under Title 1 under ESSA. However, it is unfortunate that less than half of the teachers claimed that they have received some training in both teaching and assessing ELLs in their classrooms. There is a need for not only informing teachers about the specific requirements of ESSA for ELLs, but also providing them with essential trainings of teaching and assessing ELLs in classrooms in order to see how the

educational policy requirements are implemented effectively at the classroom level, benefiting all students with the intended goal of the new educational policy.

This finding is extremely unfortunate that it is still not regularly practiced even after Darling-Hammond (1990) had pointed out about three decades ago that “policy must be better communicated if it is to be well understood. Meaningful discussion and extensive professional development at all levels of the system are critical components of such communication” (p. 346). Darling-Hammond (1990) also stated that policymakers need to be mindful of teachers’ knowledge in order to change their teaching practice and devoting attention to teachers to as “change-agents, to grapple with transformations of ideas and behavior” (p. 346). I echo her sentiments and want to emphasize the need to support teachers through a long standing dedication to help teachers who are at the frontline to implement the changes in the ESSA only when they know what and how to change their classroom practices reflecting ESSA requirements for ELLs. I want to further assert that this support must be offered before a new educational policy starts to be implemented and students’ academic achievement is taken into consideration under the accountability of that new educational policy.

If the specific requirements of ESSA are not well practiced at the classroom level by teachers, the transition of one educational policy to another at the federal and state levels will be no more obvious to students than a mere change of title of the educational policy. Policy analysis often focuses on whether or not the academic achievement gaps among student groups have been narrowed down during the era of certain educational policy. Nevertheless, policy makers must first acknowledge whether or not policy requirements have been adequately implemented in classroom and the teachers were given the means of support to make changes in their classroom practices in order to effectively narrowing the students’ academic achievement. In this way, informing and supporting teachers through professional development and workshops need to be guaranteed and precede the implementation of a new educational policy instituted at the federal level.

Research Question 3 Findings and Discussion

In this section, I present and discuss findings related to Research Question 3, which is *How do the dynamics of ecological systems between teachers’ personal and contextual factors influencing their awareness of ESSA specific requirements in relation to ELLs vary in different regions of Indiana?*

Out of 46 teachers, 2 teachers are from Region 3, 17 teachers are from Region 5, and 27 teachers are from Region 6 (Figure 33). With the sample size of the each region, no statistical analysis could have been performed between these three regions in relation to teachers' ESSA knowledge score.

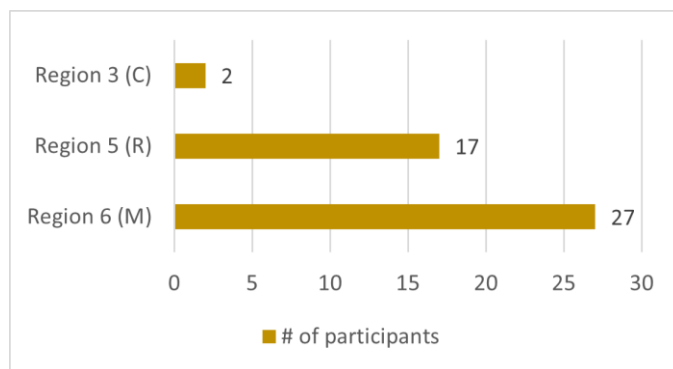


Figure 33. The Number of Participants by Region

The individual teacher's ESSA knowledge score distribution chart (Figure 34) displays that fewer teachers have participated in Region 3, and also that they scored lower in comparison to the majority of the teachers in Region 6. The teachers in Region 6, a metropolitan area, participated in the survey in greater numbers, and they both reported awareness at a greater rate and displayed higher ESSA knowledge scores. The average ESSA knowledge score of each region is as follows: 1 (Region 3); 3 (Region 5); 5 (Region 6).

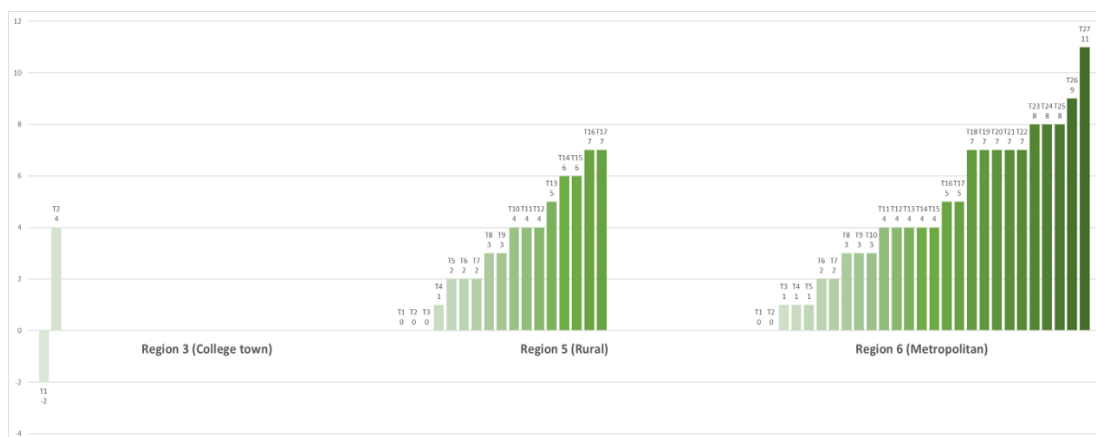


Figure 34. Individual Teacher's ESSA Knowledge Score Distribution by Region

In fact, the number of teachers who reported that they are aware of the specific requirements of ESSA for ELLs to some degree differs (Figure 35). In Region 3, 50% (1 out of 2) of teachers, in Region 5, 76.5% (13 out of 17) of teachers and in Region 6, 81.5% (22 out of 27) of teachers claimed that they are aware of the ESSA requirements for ELLs to a certain extent.

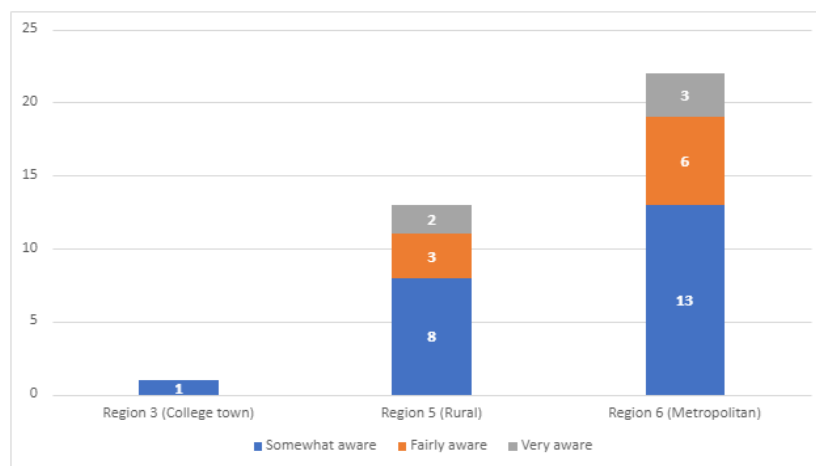


Figure 35. 36 Teachers Responses by Category in Q2. I am aware of the specific requirements of ESSA for ELLs

To look at how teachers in the different regions indicated on what helped them to become aware of the specific requirements of ESSA for ELLs (Q2 sub questions), I created a heatmap (Figure 36). In regard to what helped them to be aware of the specific requirements of ESSA for ELLs (Q2) among the three regions are displayed by a heatmap in Figure 36.

	Teacher(s)	Principal/ Administrators	School/ district emails	IDOE emails	Articles	TV news	Internet news	Education websites	Newspaper	Social media	ELL specialists(s)	Conferences	Friends	Family	Volunteers	PD (district)	Staff meeting	Classes	Other
Region 3 (College town; 1 teacher)	0	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0
Region 5 (Rural; 13 teachers)	8	8	5	7	3	3	3	6	1	5	8	1	3	1	1	6	9	2	0
Region 6 (Metropolitan; 22 teachers)	12	16	10	9	7	2	1	4	0	5	14	6	3	0	0	13	12	3	0

Figure 36. 36 Teachers' Response to the People and/or Sources of Information that Helped Them to Become Aware of the Specific Requirements of ESSA for ELLs (Q2 sub questions) by Region

The number of participants from each region differs, 1 teacher in Region 3, 15 teachers in Region 5, 22 teachers in Region 6. Still there are some observable similar trends on their responses in regard to who and what allowed them to become aware of the specific requirements of ESSA for

ELLs. For instance, “Principal/Administrators,” “ELL specialist(s),” “Staff meeting,” “School/district emails,” and “IDOE emails” were selected more by teachers across the three regions. Interestingly, while several teachers in Regions 5 and 6 indicated “Teacher(s)” and “PD (district)” as helpful sources of information that helped them to become aware of ESSA requirements for ELLs, the one teacher in Region 3 did not indicate these as helpful sources of information.

Furthermore, when comparing the teachers between Region 5 and Region 6 by their ESSA knowledge score groups (i.e., Below Average, Average, and Above Average), the teachers in different score groups indicated the helpful resources with varying degrees for certain sources of information (i.e., ELL specialist and PD) (Figure 37). For instance, “ELL specialist” and “PD (district)” were selected the most by the above average group in Region 5 yet by the below average group in Region 6.

		Teacher(s)	Principal/ Administrators	School/ district emails	IDOE emails	Articles	TV news	Internet news	Education websites	Newspaper	Social media	ELL specialists(s)	Conferences	Friends	Family	Volunteers	PD (district)	Staff meeting	Classes	Other
Region 5	Below	6	5	3	3	1	0	0	0	0	1	3	1	1	0	0	3	4	0	0
(Rural; Avg		1	4	1	1	1	0	0	1	0	1	3	1	0	0	0	2	2	0	0
13 teachers)	Above	5	7	6	5	5	2	1	3	0	3	8	4	2	0	0	8	6	3	0
Region 6	Below	4	3	1	2	2	2	1	2	0	3	4	0	1	0	0	4	4	1	0
(Metropolitan; Avg		2	2	2	1	1	1	1	2	1	2	2	1	1	1	1	1	2	1	0
22 teachers)	Above	2	3	2	4	0	0	1	2	0	0	2	0	1	0	0	1	3	0	0

Figure 37. Region 5 and 6 Teachers’ Response to Question 2 Sub Questions and their ESSA Knowledge Score

In short, as shown with the teachers’ ESSA knowledge score distribution by region in Figure 34, the majority of teachers in all three regions scored average and below. In line with the findings and discussions in the previous sections, considering that the average score is low, it is clear that the teachers in all three regions need to be informed of the specific requirements of ESSA for ELLs far greater than as of now. In addition, the teachers in each region indicated the sources of information that helped them to be aware of ESSA specific requirements for ELLs similarly at large, yet there is slightly different patterns of helpful resource choices between the above average and below average groups amongst Region 5 and Region 6. Whether these choices were selected due to personal preferences or due to possibility of given environmental situations in different regions is not clear, nevertheless, some trends may be worth noticing.

Expanding on what I have argued in the earlier sections of the findings, I want to reiterate the points made by De Jong and Harper (2005) that it is important to prepare mainstream teachers to be able to effectively teach ELLs in their classrooms. I further assert the importance of also including in the policy document the knowledge and skills that teachers need in order to effectively enact the ESSA specific requirements for ELLs in their classrooms mirroring Harper and DeJong's (2004) statement that "recommendations in the national standards documents do not specify the knowledge and skills teachers need related to linguistic diversity" (p. 156). In this case, the district level PD or school workshops can focus on these skills and knowledge in addition to informing the highlights of a new educational policy requirements to teachers.

In this way, such helpful resources including PD, staff meeting, other teachers, principal and administrators would help teachers not only to be aware of the specific requirements of ESSA for ELLs, but also to have necessary skills and knowledge to teach ELLs under ESSA. Without explicitly informing the necessary skills and knowledge to teach ELLs, merely informing teachers of the ESSA requirements for ELLs alone is insufficient. This opportunity, then, will prepare teachers, as agents, to go beyond simply adopting what they have been told and rather will fully engaged in effectively implementing the new educational policy requirements in their classrooms.

CHAPTER 5. CONCLUSION AND IMPLICATIONS

Conclusion and implications

Based on the 46 teachers' responses to my online ESSA survey, the overall major finding of this study is that the teachers are not well informed of the ESSA specific requirements for ELLs and are therefore not adequately prepared to teach and assess ELLs in their classrooms under ESSA. In particular, only 1 out of 46 teachers correctly responded that the use of AYP is no longer part of ESSA, and only 5 out of 46 teachers were aware of that 100% of students, including ELLs, passing the state standard tests is no longer required under ESSA. This demonstrates that most teachers are not aware of the major changes from NCLB to ESSA since the majority of the teachers still think accountability under ESSA includes 100% of students passing the state standard tests and the use of AYP. Without knowing the changes of the educational policy, teachers will not adjust their classroom practices accordingly and will likely continue ineffective test-preparation focused instruction (i.e., teach to the test). As such, the effectiveness of ESSA at the classroom level will not be observed. A summary of the major finding corresponding to each of the three research questions is discussed below.

Research Question 1 asks, "How aware are teachers of ESSA, and what are the dynamics of ecological systems influencing teachers' awareness of ESSA specific requirements in relation to ELLs?" Among the 46 participants, a higher number of teachers claimed that they are aware of the specific requirements of ESSA for ELLs (78%) than they are aware of the transition from NCLB to ESSA (67%) to some degree. While more teachers are aware of the transition from NCLB to ESSA to some degree, the teachers who claimed that they are "Very aware" have higher ESSA knowledge score and the teachers who claimed that they are "Not at all aware" scored lower. Similarly, the teachers who responded that they are more aware of the specific requirements of ESSA did score higher. Indeed, the average ESSA knowledge score of the 46 teachers is 3.978 out of a possible highest score of 15. This indicates that very few teachers were highly informed of the ESSA specific requirements for ELLs. While the possible scores range from -15 to 15, only 5 out of 46 teachers scored more than 50% correct (more than 7.5 out of 15). Regarding the dynamics of ecological systems influencing their awareness of ESSA specific requirements in

relation to ELLs, with these 46 participants, no personal factors (e.g., years of teaching, educational level, possessing an ELL licensure) were found to be influencing statistically significant to their ESSA knowledge score. In fact, the following contextual factors in the microsystem of the ecological system theory that helped them to be aware of the specific requirements of ESSA for ELLs to some degree are (a) “Principal/School administrators”; (b) “ELL specialist”; (c) “Staff meeting”; (d) “Other teacher(s)”; and (e) “Professional Development (PD) at the district level”.

Next, regarding the Research Question 2. “To what extent do contextual factors and teachers’ personal factors influence their awareness of ESSA in relation to instructing and accessing ELLs?,” there seems to be no specific personal factors that influence teachers’ awareness of ESSA in relation to instructing and assessing ELLs in their classrooms. The contextual factors influencing the teachers’ awareness of ESSA in relation to instructing and assessing ELLs slightly varies among different ESSA knowledge score groups. For instance, the teachers who scored below average tend to turn to the same grade teachers(s) the most for help when they have questions or concerns about assessing ELLs, whereas, if they have questions or concerns about teaching their ELLs, they tend to turn to not only the same grade teacher(s) but also the ELL specialist(s) the most. Nonetheless, the teachers in Above Average group and Average group generally turn to an ELL special the most when they have questions or concerns about both teaching and assessing the ELLs.

In terms of their self-rating of feeling of preparedness to teach and assess ELLs based on the amount of training they received, those who claimed that they feel more prepared to assess ELLs scored significantly higher, yet, their feeling of preparedness to teach ELLs was not statically significant in relation to their ESSA knowledge score. Apart from the statistical analysis results, only limited number of teachers reported that they feel “Very prepared” to either assess (6 teachers) or teach (7 teachers) ELLs in their classrooms even though they received some training. Hence, it is important to provide more practical and helpful trainings that will allow the teachers to feel more prepared to teach and assess in relation to their classroom practices.

According to the teachers’ responses, overall, more teachers received some training in assessing ELLs in comparison to teaching ELLs. In fact, only about half of the teachers (22 out of 46 teachers) responded that they have received some training in both teaching and assessing ELLs after earning their bachelor’s degree or ELL licensure. Thus, it signifies the necessity to offer

trainings for teachers to teach and assess ELLs under ESSA along with informing them with the ESSA requirements for ELLs in order to witness the effective implementation of ESSA at the classroom level. In doing so, it is also necessary to keep in mind to offer a more customized professional development or workshops for teachers since the extent to which contextual and personal factors could influence their instruction and assessment practices for ELLs may vary.

Lastly, no statistical analysis was conducted due to small sample size among the three regions for Research Question 3, which asks, “How do the dynamics of ecological systems between teachers’ personal and contextual factors influencing their awareness of ESSA specific requirements in relation to ELLs vary in different regions of Indiana?” The average score of each region varies: 1 (Region 3; 2 teachers), 3 (Region 5; 17 teachers), and 5 (Region 6; 27 teachers). Among 46 participants, the teacher who scored lowest (i.e., -2) is from Region 3, and the teacher with the highest score (i.e., 11) is from Region 5. In fact, only 1 out of 2 teachers in Region 3, 13 out of 27 teachers in Region 6, and 22 teachers out of 27 teachers in Region 5 reported that they are aware of the ESSA specific requirements for ELLs to some degree. Among these teachers in Region 5 and 6, regardless of their ESSA knowledge score, principal and school administrators, other teachers, ELL specialists and staff meeting were claimed to be helpful contextual factors in the microsystem that influenced their awareness of the ESSA specific requirements for ELLs.

In both Region 5 and 6, a greater number of teachers with above average ESSA knowledge scores than the teachers with average and below ESSA knowledge scores claimed that IDOE emails are a helpful resource that influenced them to be aware of the ESSA specific requirements for ELLs. Interestingly, the teachers in the above average group in Region 5 and the teachers in the below average group in Region 6 both claimed professional development at the district level as a helpful resource much higher than the teachers in different ESSA knowledge score groups in their respective regions. This demonstrates that individual teachers from not only different ESSA knowledge score groups, but also in different regions of the state can claim different contextual factors in the microsystem as a helpful resource to a varying degree.

Through investigating the current standpoint of teachers’ awareness of ESSA and ELLs in relation to their personal as well as contextual factors influencing their ESSA knowledge, what seems most salient is that teachers claimed school principal/administrators and ELL specialists—people who are geographically close to them—as the most helpful resources for them to be aware

of the specific requirements of ESSA for ELLs. Connecting to the Bronfenbrenner's Ecological Systems theory, the microsystem, the immediate layer outside the individual at the center, is noticeably influencing individual teacher's understanding of ESSA. As the school principals/administrators and ELL specialists were found to be the most helpful resources for the teachers, this physical proximity of local resource can be helpful only when adequate staffing members are available in the same school building. Considering that not all of the three districts had a licensed ELL specialist in the schools, it is critical that there be well-trained and ESL licensed ELL specialists and teachers at the school level.

At the same time, there is an evident disconnection between the individual teacher at the center (e.g., ESSA knowledge and practices at the classroom level) and the exosystem at the outer layer (e.g., policy level at the federal and state, school district, mass media, and IDOE). Unfortunately, based on the survey results, the policy level decisions (Exosystem) were never clearly explained to the individual teacher. Even more unfortunate, not knowing specific knowledge about ESSA would impact teachers' instruction and assessment practices with ELLs in their classrooms because the teachers would be teaching and assessing ELLs in the same way as under NCLB despite changes made under ESSA.

ESSA still requires the same testing requirements for the grades and subjects tested under NCLB. However, under ESSA, AYP is replaced with state defined goals for students and student subgroups. Additionally, the NCLB's school accountability goal of all students meeting grade level proficiency in reading and math is no longer required under ESSA. Instead, states can include their long term as well as interim goals, and the state-defined goals should include academic achievement on state assessment, graduate rates, and English language proficiency for ELLs. Knowing these amendments will allow the teachers to truly become professionals with agency who can change their instructional and assessment practices for ELLs under ESSA based on their ESSA knowledge. Furthermore, if teachers are aware of certain ESSA specific requirements, then teachers would be more likely to provide better instruction focused on students' English language development and less on test preparation. These certain ESSA specific requirements include 1) AYP no longer part of ESSA, 2) 100% of students passing the state standard tests no longer required under ESSA, and 3) test scores for newcomer ELLs do not count in the first year and that only their growth scores count in the second year. Accordingly, when teachers make changes to their instruction and assessment of ELLs in classrooms due to their better understating of the

specific changes made under ESSA in relation to ELLs, the notion of “teaching to the test” will be less prominent and perhaps eventually phased out under ESSA.

For this reason, even though the individual teacher did not have any active role making the decisions at the state and federal policy level, it should not be overlooked that the individual teacher is an active agent who can implement the decisions made at the district, state, and federal levels in their classrooms. Despite that the exosystem refers to an environment where the individual is not directly involved, it is clear that the environmental elements at the exosystem level could considerably influence the individual teacher.

Thus, creating more direct interactions at the mesosystem layer would allow better connection between the layers of exosystem (e.g., IDOE, school district) and microsystem (e.g., workshop, school staff) since mesosystem refers to the interconnections between microsystems (e.g., an ELL specialist who has ESSA knowledge could influence the individual teacher who may not have had a direct training opportunity to gain ESSA knowledge). If at all possible, it will be best if each and every individual teacher can attend a workshop or receive some trainings regarding the changes made to ESSA in relation to teaching and assessing ELLs. In this manner, an individual teacher’s critical role in effectively implementing ESSA at the classroom level through knowing how ESSA specific requirements for ELLs differ from NCLB will become more apparent.

Recommendations

All in all, I suggest distributing at least a brief summary brochure of the ESSA specific requirements for ELLs (see Appendix B) for teachers by the state department of education to help teachers to be more aware of the changes from the NCLB to ESSA. To be more effective, it is essential to systematically offer professional development and workshops regarding the ESSA specific requirements and training sessions on teaching and assessing ELLs under ESSA at the district level. Indiana has a rapid increase of the number of ELLs in many school districts and considering many of ELLs are in the primary grades, it is vital to support the teachers in elementary school to be aware of the ESSA specific requirements for ELLs.

Based on the study results, the majority of the teachers who claimed they are aware of the ESSA specific requirements for ELLs to some degree reported ELL specialists along with the principal and school administrators as the most helpful people who helped them to become aware of the specific requirements of ESSA for ELLs. Most of the teachers also reported that they

typically turn to for help to ELL specialists when they have questions or concerns about teaching and assessing their ELLs. I also suggest having a knowledgeable ELL specialist in each school to be required by the state so that there is continued support for teachers on-site as they would have questions and concerns about teaching and assess ELLs.

In fact, less than half of the teachers claimed that they have received some training in both teaching and assessing ELLs in their classrooms after receiving their bachelor's degree or ELL licensure. Hence, there is a need for not only informing teachers of the specific requirements of ESSA for ELLs, but also for providing essential trainings to teach and assess ELLs in their classrooms in order to observe how the educational policy requirements are implemented effectively at the classroom level, benefiting all students as is the intended goal of the new educational policy. Even if the stakeholders at the district level (e.g., superintendent) and at the school level (e.g., principal) are highly aware of the transition from NCLB to ESSA and the changes made to the current educational policy, if those changes are not delivered and practiced by the teachers at the classroom level, how are we going to prove that the new educational policy requirements are implemented in classrooms with the hope of supporting every student to succeed in school? I argue that the intended effectiveness of changes made from NCLB to ESSA can only be successful when these changes are implemented via teachers in their classrooms as they teach and assess students daily.

To the students in classroom, if the specific requirements of ESSA are not well practiced at the classroom level by teachers, the transition of one educational policy to another at the federal and state levels will be no different than relentlessly changing the title of the educational policy. Many policy analysis studies examine the state standardized test results to see if the academic achievement gaps among student groups have been narrowed down during the era of certain educational policies. The effectiveness of a new educational policy should thoroughly examine whether the new policy requirements have been adequately implemented in classrooms to be effective for narrowing the academic achievement gaps between diverse students. To do so, informing and supporting teachers through professional development and workshops need to come first before the beginning of the implementation of a new educational policy instituted at the federal level.

Limitations of the study and future studies

While this study may be subject to several limitations, the primary limitation is the generalization of the results. Given the small sample size, these 46 teachers may not be representative of teachers in the regions of Indiana. The small sample size may have affected the statistically insignificant findings of the relationship between teachers' ESSA knowledge score and their personal factors (e.g., years of teaching, educational level, completion of an ELL licensure). With a larger sample size, significant associations between teachers' ESSA knowledge score and their personal factors could have been found. Moreover, the exclusion of follow-up interviews pose further limitations to more comprehensively investigate teachers' ESSA knowledge score. Currently, this study offers a narrow scope of how both personal and contextual factors influence teachers' awareness of ESSA in relation to the ecological system theory. Follow-up interviews are critical to thoroughly investigate how the personal and contextual factors interdependently influence teachers' awareness of ESSA specific requirements for ELLs.

Another pressing limitation was the lack of direct access to the contact list of the teachers who received my online survey link in one of the districts (Region 6). I requested the link to be sent to the elementary school teachers but the link may have been distributed to all K-12 teachers in the district. Thus, some teachers without elementary school licensure may have completed the survey. With a follow-up interview opportunity, I could have gained a deeper understanding of teachers' responses and their answer choices made including the demographic data. For instance, a survey question asked in what year the teacher had received an elementary school licensure and a teacher indicated that she/he received a middle school licensure, but I do not know if this teacher is currently teaching any ELLs in K-6. Also, some teachers seem to be teaching at multiple elementary schools as ELL specialists rather than classroom teachers, but their responses were included in this study regardless of their current status as classroom teachers in Region 6.

For future study, the current online survey can be revised by adding more precise demographic questions. Also, distributing online survey link in a specific district would more comprehensively explore and enable better representation of teachers' awareness of ESSA for ELLs and their teaching and assessment practices for ELLs in that district. This will also allow me to inform the district to realistically come up with more customized Professional Development sessions for the individual teachers with varying levels of awareness of ESSA as well as experiences with teaching and assessing ELLs. If the study can be done for each school district

with a significant number of ELLs in Indiana, ultimately, these studies will provide a more meaningful representation of many Indiana teachers in the schools with greater number of ELLs. Furthermore, this future research will offer a clearer picture of Indiana teachers' awareness of the specific requirements of ESSA for ELLs and what would help them to be more aware of ESSA and to teach and assess ELLs in their classrooms. Based on these data, more resources for teachers can be developed to prepare and support them throughout the educational policy implementation in each year at the classroom level. With this data-driven support for teachers, the rapidly increasing number of ELLs in Indiana, especially at the elementary school level, will benefit learning content and English language in school.

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APPENDIX A

Paper Copy of ESSA Online Survey Instrument

Thank you for taking this survey. The purpose of this survey is to better understand if and how teachers are informed of the federal and state educational policy requirements for English Language Learners (ELLs). Your participation in this survey will be kept confidential. Survey results will only be reported in the aggregate.

1. I am aware of the recent transition of federal educational policy from NCLB to Every Student Succeeds Act (ESSA).

- ☐ Not at all aware
- ☐ Somewhat aware
- ☐ Fairly aware
- ☐ Very aware

2. I am aware of the specific requirements of ESSA for ELLs.

- ☐ Not at all aware
- ☐ Somewhat aware
- ☐ Fairly aware
- ☐ Very aware

(If somewhat, fairly, or very aware),

Indicate below the people and/or sources of information that helped you to become aware. Click a value below (Yes/No).

- ☐ Other teacher(s)
- ☐ School principal or other school administrators
- ☐ School or district e-mails, memos, documents, etc.
- ☐ Indiana Department of Education e-mails, memos, documents, etc.
- ☐ Articles in education newspapers, newsletters, magazines, journals, etc.
- ☐ TV news
- ☐ Internet news sites
- ☐ Education related websites (e.g. school, district, state, federal, professional organizations, blogs, etc.)
- ☐ Local newspaper
- ☐ Social media (e.g., Facebook, Twitter, Pinterest, online discussion group, e-mail list serve, text chats, etc.)
- ☐ School or district ELL/ESL specialist(s) or other district administrators
- ☐ Local, state, or national conference(s)

- ☐ Friends
- ☐ Family members
- ☐ Volunteers
- ☐ Professional development workshop at the school district level
- ☐ Staff meeting at the school
- ☐ Class(es) at college or university
- ☐ Other (Blank—Must write to go on)

3. How prepared do you feel to best instruct your ELL students as required by ESSA?

- ☐ Not at all prepared
- ☐ Somewhat prepared
- ☐ Adequately prepared
- ☐ Very prepared

Indicate below the people and/or sources of information that helped you to feel prepared to instruct ELLs. Click a value below (Yes/No).

- ☐ from undergraduate teacher education ELL course(s)
- ☐ from graduate ELL teacher licensure course or program
- ☐ from a graduate ELL certificate program (non-licensure)
- ☐ from a professional development workshop or training at the school district level
- ☐ from a workshop at school or during school staff meeting
- ☐ from attendance at local, state, or national professional conferences
- ☐ from my own reading, study, and past ELL teaching experience
- ☐ other (open ended answer)

4. How prepared do you feel to best assess your ELL students as required by ESSA?

- ☐ Not at all prepared
- ☐ Somewhat prepared
- ☐ Adequately prepared
- ☐ Very prepared

Indicate below the people and/or sources of information that helped you to feel prepared to assess ELLs. Click a value below (Yes/No).

- ☐ from undergraduate teacher education ELL course(s)
- ☐ from graduate ELL teacher licensure course or program
- ☐ from a graduate ELL certificate program (non-licensure)
- ☐ from a professional development workshop or training at the school district level
- ☐ from a workshop at school or during school staff meeting

- ☐ from attendance at local, state, or national professional conferences
- ☐ from my own reading, study, and past ELL teaching experience
- ☐ other (open ended answer)

5. Under ESSA, the required statewide tests include the following: annual testing in English Language Arts/Reading and Math in grades 3-8 and once in high school for all students, and annual English language proficiency assessments in grades K-12 for all ELLs.

- ☐ Yes
- ☐ No
- ☐ Not sure

6. Under ESSA, individual schools are held accountable for ELL progress in attaining English language proficiency.

- ☐ Yes
- ☐ No
- ☐ Not sure

7. Under ESSA, ELLs are defined in part as students whose difficulties in speaking, reading, writing, or understanding the English language may prevent them from achieving successfully in classrooms where the language of instruction is English.

- ☐ Yes
- ☐ No
- ☐ Not sure

8. Under ESSA, 100% of students, including ELLs, are expected to pass state ELA/Reading and Math tests by 2023.

- ☐ Yes
- ☐ No
- ☐ Not sure

9. Under ESSA, a system of adequate yearly progress (AYP) is used to hold schools accountable for ensuring that all students, including ELLs, ultimately pass state ELA/Reading and Math Tests.

- ☐ Yes
- ☐ No
- ☐ Not sure

10. ESSA requires that all students who may be ELLs need to be assessed within 30 days of enrollment in a school within the state.

- ☐ Yes
- ☐ No
- ☐ Not sure

11. Under ESSA, newcomer ELLs' annual test results are handled the same as all other students for school accountability purposes.

- ☐ Yes
- ☐ No
- ☐ Not sure

12. Under ESSA, for Indiana newcomer ELLs who are in their first year of enrollment in a U.S. school, their ELA/Reading and Math tests (ILearn) scores will not be included in school accountability determinations.

- ☐ Yes
- ☐ No
- ☐ Not sure

13. Under ESSA, for Indiana ELLs who are in their second year of enrollment in a U.S. school, only their growth on state ELA/Reading and Math tests (ILearn) will be included in school accountability determinations.

- ☐ Yes
- ☐ No
- ☐ Not sure

14. Under ESSA, for Indiana ELLs who are in their third year of enrollment in a U.S. school, their state ELA/Reading and Math test (ILearn) scores will only be partially included in school accountability determinations.

- ☐ Yes
- ☐ No
- ☐ Not sure

15. Under ESSA, school accountability is determined solely by the percentage of students who pass annual state ELA/Reading and Math tests.

- ☐ Yes
- ☐ No
- ☐ Not sure

16. Under ESSA, states must provide appropriate accommodations, including, to the extent practicable, assessments in the native languages of ELLs.

- ☐ Yes
- ☐ No
- ☐ Not sure

17. Under ESSA, Indiana will move away from an A-F grading system and instead will use the following ratings based on the school's performance against long-term performance goals: Exceeds Expectations; Meets Expectations; Approaches Expectations; Does Not Meet Expectations.

- ☐ Yes
- ☐ No
- ☐ Not sure

18. Under ESSA, the academic progress (i.e., growth) in English/Language Arts and Math is one of the measurements of school accountability in Indiana.

- ☐ Yes
- ☐ No
- ☐ Not sure

19. ESSA requires states to use federal funds to increase the English language proficiency of ELLs by providing effective language instruction educational programs that increase **both** language proficiency (e.g., ESL; ELD) and student academic achievement (e.g., content-area instruction).

- ☐ Yes
- ☐ No
- ☐ Not sure

20. I have made changes to my instruction practices for ELLs in my classroom in response to the new ESSA requirements.

- ☐ Yes
- ☐ No

(If Yes),

What is changed? How is it changed?

- ☐ Blank (Open ended answer)

21. I have made changes to my assessment practices for ELLs in my classroom in response to the new ESSA requirements.

- ☐ Yes
- ☐ No

(If Yes),

What is changed? How is it changed?

- ☐ Blank (Open ended answer)

22. In general, my school allows students and teachers to use languages other than English for social and academic purposes.

- ☐ Allowed inside the classroom only
- ☐ Allowed outside the classroom only
- ☐ Allowed both in and outside of the classroom
- ☐ Not allowed inside or outside of the classroom

23. I allow my ELL students to use their home languages in my classroom.

- Never
- Rarely
- Occasionally
- Frequently

24. Where do you typically turn to for help when you have questions or concerns about **teaching** your ELL students? Click a value below (Yes/No).

- ☐ I usually talk to teacher(s) in my same grade level
- ☐ I usually talk to teacher(s) with more years of teaching
- ☐ I search internet (e.g., Google)
- ☐ I look up books about teaching ELLs
- ☐ I contact an ELL specialist at the school or district level
- ☐ I contact school administrators
- ☐ I contact school staff
- ☐ I contact family members
- ☐ I contact friends outside school
- ☐ Other (open ended answer)

25. Where do you typically turn to for help when you have questions or concerns about **assessing** your ELL students? Click a value below (Yes/No).

- ☐ I usually talk to teacher(s) in my same grade level
- ☐ I usually talk to teacher(s) with more years of teaching
- ☐ I search internet (e.g., Google)
- ☐ I look up books about assessing ELLs
- ☐ I contact an ELL specialist at the school or district level
- ☐ I contact school administrators
- ☐ I contact school staff
- ☐ I contact family members
- ☐ I contact friends outside school
- ☐ Other (open ended answer)

26. I have earned state licensure for teaching ELLs.

- Yes
- No
- Currently in an ELL licensure program

(If Yes),

How long ago did you compete your ELL licensure?

- 1-2 years ago
- 3-5 years ago
- 6 or more years ago

27. I have received some training in **teaching** ELLs after receiving my bachelor's degree or ELL licensure.

- ☐ Yes
- ☐ No
- ☐ Not sure

(If Yes),

Please describe the training you received:

- ☐ Blank (Open ended answer)

28. I have received some training in **assessing** ELLs after receiving my bachelor's degree or ELL licensure.

- ☐ Yes
- ☐ No
- ☐ Not sure

(If Yes),

Please describe the training you received:

- ☐ Blank (Open ended answer)

29. Based on the amount of training I have received, I feel prepared to teach ELLs in classroom.

- ☐ Not at all prepared
- ☐ Very little prepared
- ☐ Adequately prepared
- ☐ Very prepared

30. Based on the amount training I have received, I feel prepared to assess ELLs in classroom.

- ☐ Not at all prepared
- ☐ Very little prepared
- ☐ Adequately prepared
- ☐ Very prepared

31. Do you speak more than one language?

- ☐ Yes
- ☐ No

(If Yes),

Please list each language and indicate your level of proficiency:

- ☐ Blank (Open ended answer)

32. What is your highest degree obtained?

- ☐ Bachelor's degree
- ☐ Master's degree
- ☐ Doctoral degree (PhD; EdD)
- ☐ Other (Open ended answer)

33. Which year did you obtain your elementary education teaching license?

- ☐ Blank (Open ended answer)

34. How long have you been teaching in your current school?

- ☐ Blank (Open ended answer)

35. What grade do you currently teach?

- ☐ KG-6th grade drop down
- ☐ Blank (Open ended answer)

36. How long have you been teaching this grade?

- ☐ Blank (Open ended answer)

37. How many ELLs are in your current classroom?

- ☐ Blank (Open ended answer)

38. Approximately how many ELLs have you taught throughout your career?

- ☐ Less than 10
- ☐ 10 – 20
- ☐ 21 – 30
- ☐ 31 – 40
- ☐ 41 – 50
- ☐ 51-100
- ☐ Over 100

39. Where is your school district? Please reference the graphic below and select the region number of your district in the dropdown list:



40. I would really appreciate the opportunity to talk to you more in-depth about your experience teaching and assessing your ELL students. Would you be willing to participate in an approximately one-hour interview for this study? Your participation will be anonymous to the public including your school. Please note that this is the last question in this survey. THANK YOU for your time and feedback! After you submit this question, you will be automatically taken to the drawing form for a Starbucks gift card.

- ☐ Yes
- ☐ No

(If Yes),

“Please provide your contact information.”

Name:

Email:

“Thank you and the researcher will contact you soon.”

If you wish to be included in the drawing to win one of fifty \$5 Starbucks gift cards (odds for winning 1:3), please proceed to the link below and provide your email one more time. This is necessary so that your survey answers will not be linked to your email address entered for your chance to win a gift card.

(If they click the link)

Once again, your participation in this survey is confidential! Your email address in this page will only function as a raffle ticket number to be drawn to win a gift card.

Email address:

(If No),

“Thank you for your participation.”

APPENDIX B

Summary of ESSA Requirements for ELLs in Indiana

1. Under ESSA, the required statewide tests include the following: annual testing in English Language Arts/Reading and Math in grades 3-8 and once in high school for all students, and annual English language proficiency assessments in grades K-12 for all ELLs.

Yes, in terms of testing requirements, ESSA still requires the same testing requirements for the grades and subjects tested under NCLB. ESSA also continues to maintain 95% of students to be tested and requires states to include the participation rate in its accountability system. However, under ESSA, states can create “opt out” policies.

2. Under ESSA, individual schools are held accountable for ELL progress in attaining English language proficiency.

Yes, under ESSA, ELLs’ English language proficiency will now be counted in a school’s overall accountability calculation under Title I. Under NCLB, English proficiency was addressed under Title III and only used for accountability at the school-district and state level.

3. Under ESSA, ELLs are defined in part as students whose difficulties in speaking, reading, writing, or understanding the English language may prevent them from achieving successfully in classrooms where the language of instruction is English.

Yes, ESSA includes this definition of ELLs. Unlike NCLB, ESSA no longer uses the term “Limited English Proficient” but rather uses the term “English learner.”

4. Under ESSA, 100% of students, including ELLs, are expected to pass state ELA/Reading and Math tests by 2023.

No. NCLB had the unrealistic goal that all students, including English learners, were expected to show annual yearly progress toward 100 percent proficiency by 2014. ESSA allows states to set rigorous but more realistic and attainable goals for ELLs and other students.

5. Under ESSA, a system of adequate yearly progress (AYP) is used to hold schools accountable for ensuring that all students, including ELLs, ultimately pass state ELA/Reading and Math Tests.

No. Under ESSA, AYP is replaced with state defined goals for students and student subgroups.

6. ESSA requires that all students who may be ELLs need to be assessed within 30 days of enrollment in a school within the state.

Yes, this is required under ESSA.

7. Under ESSA, newcomer ELLs’ annual test results are handled the same as all other students for school accountability purposes.

No. Under ESSA, states can test newcomer ELLs in their first year on math and reading but not include their scores in relation to a school’s accountability system. In the second year, states can test the newcomer ELLs, and their math and reading tests results will be factored into a school’s accountability system only as a measure of growth between Years 1 and 2. In Year 3, ELL students score are treated like all other student test scores in school accountability systems.

8. Under ESSA, for Indiana newcomer ELLs who are in their first year of enrollment in a U.S. school, their ELA/Reading and Math tests (ILearn) scores will not be included in school accountability determinations.

Yes, ESSA explicitly allows this option for newcomer ELLs, and Indiana has selected this option in its ESSA Plan.

9. Under ESSA, for Indiana ELLs who are in their second year of enrollment in a U.S. school, only their growth on state ELA/Reading and Math tests (ILearn) will be included in school accountability determinations.

Yes, ESSA explicitly allows this option for newcomer ELLs, and Indiana has selected this option in its ESSA Plan.

10. Under ESSA, for Indiana ELLs who are in their third year of enrollment in a U.S. school, their state ELA/Reading and Math test (ILearn) scores will only be partially included in school accountability determinations.

No. In year three and beyond, ELL achievement and growth scores on statewide annual assessment in English/language arts are included in accountability calculations and determinations.

11. Under ESSA, school accountability is determined solely by the percentage of students who pass annual state ELA/Reading and Math tests.

No. The multiple performance indicators measured in the accountability system under ESSA in Indiana for grades K-8 include the following: (1) Academic Achievement (English/Language Arts & Math); (2) Academic Progress (English/Language Arts & Math); (3) English Language Proficiency Progress for English Learners; (4) Addressing Chronic Absenteeism; (5) Closing Achievement Gaps (English/Language Arts & Math).

12. Under ESSA, states must provide appropriate accommodations, including, to the extent practicable, assessments in the native languages of ELLs.

Yes. ELLs must be assessed in a reliable and valid manner with appropriate accommodations in order to yield accurate assessment on what they know in the content area assessed. Some states offer assessments in ELLs' native language (e.g., Spanish).

13. Under ESSA, Indiana will move away from an A-F grading system and instead will use the following ratings based on the school's performance against long-term performance goals: Exceeds Expectations; Meets Expectations; Approaches Expectations; Does Not Meet Expectations.

Yes, this is new change in Indiana under ESSA.

14. Under ESSA, the academic progress (i.e., growth) in English/Language Arts and Math is one of the measurements of school accountability for elementary and middle schools in Indiana.

Yes. As explained above (#11), not only their academic achievement but also their academic progress is included as part of school accountability measurements.

15. ESSA requires states to use federal funds to increase the English language proficiency of ELLs by providing effective language instruction educational programs that increase both language proficiency (e.g., ESL; ELD) and student academic achievement (e.g., content-area instruction).

Yes, under ESSA, providing effective instruction to improve ELLs' English language proficiency and content area academic achievement is highlighted. Effective language instruction educational programs may include dual language and other forms of bilingual English.