

# AN INITIAL INVESTIGATION OF PRESERVICE TEACHERS IN THE UNITED STATES AND POSSIBLE APPLICATIONS TO UKRAINE: PERCEIVED KNOWLEDGE OF RESPONSE TO INTERVENTION

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## **Abstract**

Ukraine and the United States are engaged in education reform movements to improve quality of future teachers. Reform in the United States focuses on the use of evidence-based practices and data-based decision making. Reform in Ukraine focuses on democratic, learner-centered education. Using one university in the United States, this research investigates the degree to which preservice teacher candidates in different teacher training programs (early childhood, elementary, secondary, special education) perceive knowledge of components from the Response to Intervention model, a major focus of school reform. Application of the study to Ukraine is discussed.

**Key words:** *Response to Intervention, data-based decision making, progress monitoring, research-based instruction, preservice teachers, elementary, special education, early childhood, secondary education.*

## **Introduction**

Though there are differences in the structure of formal education between the United States and Ukraine, there are many fundamental similarities. One similarity is the desire to assure that teachers deliver high quality education to their students. Because the delivery of high quality of instruction is a reflection of higher education teacher training programs, programs in the United States and Ukraine are engaged in the process of serious reform to improve teacher quality. In the United States, one focus of the reform is to increase the effectiveness of future teachers in their ability to assure positive educational outcomes for their students. Preservice teacher education candidates are instructed on the Response to Intervention (RTI) model. This model requires that teachers use research-based instruction and frequent data-based progress monitoring of student performance to guide future instruction. The intent is to assure that all students are achieving at expected levels. When students do not meet expectations, teachers will use the RTI model to intervene, change the instructional approach, monitor progress and continue to make instructional decisions based on the data.

Ukraine is involved in a similar reform process. The 2010 Ukraine Country Report (MESU, 2010) indicates that teacher education reform in Ukraine includes both preservice and inservice professional development in the “learner-centered approach” to teaching. A learner-centered approach is one that focuses on the outcomes of the learner, similar to the RTI model.

Ukraine joined the Bologna Process in 2005 in order to offer an education system comparable to other European countries (Bologna Process, 2010). The Bologna Process was a consortium of European countries whose goals are to create a higher education system that employed common standards and expectations for quality assurance for students, graduates, and higher education faculty. Joining this consortium allowed Ukraine to assure that the educational system in place in Ukraine was competitive with other universities in the European region and the world. Ukraine continues to address reform to assure a high quality education for all.

As a well-known systemic change in public schools throughout the United States, RTI effects how students in public schools are identified for supplementary and intensive services and the types of interventions received. Beginning around 2001, RTI moved quickly through schools in the United States as a public school system-wide reform focusing on six key components:

- 1) All students can learn;
- 2) Early intervention is helpful for students who are struggling;
- 3) Decisions should be made using data;
- 4) Student progress should be monitored and used to inform instruction;
- 5) Evidence-based, validated interventions should be used to the greatest extent possible;
- 6) All children should be systematically screened to identify those who may need further intervention.

(National Association of State Directors of Special Education, 2006).

### **Research Aim**

The purpose of this study was to investigate the perceived knowledge level of RTI in the preparation of preservice teachers in the United States at one university. University students in four categories: special education, elementary education, early childhood education and secondary education were the subjects of this initial investigation.

### **Review of Literature**

Hoover et al. (2008) reported that 90% of states were in some stage of discussion or implementation of RTI. Another survey (Marshall, 2009) suggested that 71% of school administrator respondents were implementing RTI within their schools. This survey also reported that inadequate teacher training was one factor that impeded implementation. Teachers in both general and special education are key players in the success and implementation of RTI. If not well-prepared and well-versed on the concepts of RTI, new teachers entering the field from teacher preparation programs could perform in a less-than-adequate manner when carrying out this initiative.

Similar to Ukraine's involvement in the Bologna Process, many programs in special and general education in the United States follow established standards to ensure high quality programs. For example, the National Council for the Accreditation of Teacher Education (NCATE) accredits 656 institutions using rigorous standards for teacher education (National Council for the Accreditation of Teacher Education, 2011). Specialized Professional Associations (SPAs) for many teacher preparation fields hold high standards for preparing teachers in their fields and work through NCATE to nationally recognized programs. NCATE standards and SPA standards incorporate several critical components of RTI. For example, NCATE Standard 1, Element 1d, states that teacher candidates "assess and analyze student learning, make appropriate adjustments to instruction, and monitor student progress..." (National Council for the Accreditation of Teacher Education, 2008). Specialized professional

association standards are aligned with NCATE standards in using assessment for progress monitoring and data-based decision-making to inform instruction (see, for example, National Association for the Education of Young Children, 2010; Association for Childhood Education International, 2007; Council for Exceptional Children, 2002). The Council of Exceptional Children standards (2002) include using assessment to “regularly monitor progress” and promote professional and ethical practice where teachers keep “current with evidence-based practice”. The National Association for the Education of Young Children standards (2010) incorporate using appropriate knowledge, standards and resources to “design, implement, and evaluate developmentally meaningful and challenging curriculum for each child”. In surveying SPA standards, however, it appears that special education (Council for Exceptional Children) standards use more precise language promoted in RTI, e.g., “evidence-based practice”, “regularly monitor progress”, and “ongoing analysis of the individual learning progress”.

Although many institutions of higher education in the United States are accredited and their teacher training programs nationally recognized, the level at which they incorporate important components of RTI appears to be inconsistent. In the state of Illinois, Reschly et al. (2008) reported that 74% of higher education course syllabi reviewed did not show evidence of teaching progress monitoring and 77% did not show evidence of teaching universal screening (critical components of RTI). Other comparable studies show similar results (Smartt & Reschly, 2007; Walsh et al., 2006). As part of a State Personnel Development Grant request for proposals integrating RTI into higher education, Illinois included a study of course syllabi review from preservice and graduate programs and interviews with NCATE coordinators at five public institutions of higher education to determine the extent to which institutions integrated elements of RTI (Illinois State Board of Education, 2011). Syllabi were evaluated to determine the extent of evidence indicating inclusion of five elements of RTI:

- Three-tier problem solving and response to intervention;
- Universal screening and problem identification;
- Scientifically based reading instruction in a three-tier model;
- Scientifically based progress monitoring tools;
- Effective problem solving teams.

Data indicated that two of the five institutions included RTI components in syllabi at a higher level than other institutions, even though the majority of elements were rated lower (i.e., little or no evidence). Even though all institutions showed some degree of implementation, data suggested low levels of RTI content implementation as evidenced in the syllabi reviewed. Interviews with NCATE coordinators suggested that most programs expected candidates to gain RTI knowledge through clinical placements, as opposed to course instruction. Additionally, it was unclear if clinical placements used for candidates implemented RTI practices. The study concluded that institutions of higher education needed to incorporate RTI into coursework more fully.

Despite this evidence, some universities are moving toward integrating components of RTI in teacher education curriculums, but in different ways and with different intensity. In 2006, the University of Utah’s Urban Institute for Teacher Education began refocusing curriculum on a three-tiered model of support for students in elementary and secondary education. The university offers a core set of courses around the tenets of response to intervention. This example is considered atypical for teacher education institutions around the country (Sawchuk, March 2011). Loyola University Chicago requires teacher education students to complete a project demonstrating their knowledge of data-based decision making and progress monitoring, two key components of RTI. Students must also demonstrate successful outcomes for students who require more intensive interventions (Sawchuk, March 2011). At the University of Michigan in Ypsilanti, which houses one of the nation’s largest higher education special education departments, the topic of RTI is not a formal program of study, but components of RTI are

addressed in various courses (Sawchuk, March 2011). In 2011, Illinois was implementing a personnel development grant to a partnership of institutions of higher education to provide professional development on evidence based practices and response to intervention to teacher education deans and faculty (Illinois State Board of Education, 2011). One key component of this grant required collaboration with a similar personnel development grant for public schools so that preservice teachers from universities collaborated with public schools.

The RTI reform is a paradigm shift for most schools, teachers and teacher education programs in the United States. It requires role and responsibility changes for teachers at all levels, placing more responsibility for individual student progress on general education teachers and requiring teachers to be knowledgeable about providing interventions of varying intensity to all students, with and without disabilities. This paradigm shift encompasses significant implications for preservice teacher education programs. For instance, general education preservice teachers will assume more responsibility for individual student outcomes. They need to be well-informed about each student and display the skills and knowledge to choose and implement research-based interventions and strategies, assess students, and monitor student progress over time. General education preservice teachers need to be able to use data to make instructional decisions for individual students. It is critical that these skills be fully embedded in general education teacher preparation programs (Richards, et al. 2007). Likewise, special education teacher preparation programs need to be prepared for the changing roles of special education teachers. Special education teachers need to display knowledge of collaborative consultation with general education teachers, apply intensive interventions for students not identified as having a disability, and assist in developing and implementing school-wide reliable and valid progress monitoring techniques (Richards, et al. 2007).

Education reform in Ukraine is meeting similar resistance from university professors, as well as inservice teachers in the field. There is a “crisis of professional identity of Ukrainian teachers” in the transformation from the Soviet style of education to the European democratic, learner-centered style of education (MESU, p. 17). Teachers in Ukraine appear to display skepticism about this change and their ability to make these changes. Preservice teacher training programs in Ukraine are in the process of making structural and content changes in preservice programs to assure that universities are addressing national standards and quality assurance consistent with the Bologna Process.

In the United States, Weishaar and Weishaar (2012) describe an apparent mismatch between the rapid pace at which public school teachers are implementing RTI, the initial level of RTI awareness and implementation within higher education teacher preparation programs, and the focus of professional associations for teacher preparation programs on meeting explicit standards that include components of RTI. Although public schools are planning and implementing RTI, it appears that schools of education have not kept pace with training candidates in RTI, even though NCATE and SPA standards incorporate the critical aspects of RTI.

### **Research Methodology**

This study involved completion of a survey by preservice candidates at one Midwestern public institution of higher education in the United States to determine perceived knowledge of key RTI components among four groups: elementary education, early childhood education, special education, and secondary education. Data was analyzed using Chi-Square to evaluate differences between the four groups.

#### *Participants*

Participants included 226 preservice candidates enrolled in one of four initial undergraduate teacher education programs at a metropolitan state university in the Midwest.

The university included approximately 14,000 undergraduate students, with 1000 candidates enrolled within the School of Education in both teacher education and non-teacher education programs. The School of Education was accredited by NCATE and all programs nationally recognized by their respective SPA. The 226 participants for this study included all candidates within the programs of special education (20), elementary education (102), secondary education (59), and preschool education (45) who were enrolled in the final courses the semester prior to student teaching (i.e., first semester seniors) during fall 2010.

By first semester of the senior year, candidates in all programs experienced the following common curriculum:

- Passed a required test of basic skills, required by the state, that focused on reading, writing, and mathematics skills;
- Successfully completed an educational psychology course, foundations of education course and exceptional child course;
- Completed some methods courses;
- Completed one course focused on literacy methods;
- Completed at least one practicum experience.

At this point in the programs, there were also some differences in curriculum. Elementary education coursework focused primarily on content-area instruction (e.g., social studies, art, physical education, literature, math, science), while early childhood education coursework appeared more developmentally-focused (e.g., language development, family and community relationships, understanding the pre-primary child). Special education included coursework on collaboration, behavior management, transition, and language development, for example. Secondary education coursework focused primarily on content and did not include additional courses outside of the common education courses.

Candidates within general and special education took educational psychology and foundations of education courses together as a mixed group. All other courses were program-specific. With the exception of secondary education candidates, candidates moved through their programs in cohort groups. Secondary education candidates completed content-related coursework (including methods of teaching a particular content) before proceeding to education-related coursework.

#### *Survey*

Participants completed a 16-item paper/pencil survey about their perceived RTI knowledge and skill level, source of their knowledge and skills, and an overall rating of their knowledge and skills. The first 13 items were intended to assess important elements of RTI and required responses using a 5-point Likert scale.

- 1 = I do not have the knowledge or skill at this time.
- 2 = I have basic knowledge and skills in this area.
- 3 = I have the knowledge, but still need some support to develop skills.
- 4 = I can use this skill with little support.
- 5 = I am skilled in this area and could teach this skill to others.

These 13 items were based on the key elements of RTI as defined by the National Association of State Directors of Special Education (2006) and adapted from surveys used in Illinois as developed by Loyola University Chicago (2008, 2009, 2010).

On item 14, respondents rated the level (all, some, none) of the source for RTI knowledge and skills (university coursework, university practicum, professional development, workshops and personal reading/research). Finally, item 15 asked for an overall rating (none, basic or limited, adequate, advanced/expert) of the respondent's RTI knowledge and skills. The survey questions are detailed in Figure 1.

Please select your program:  
 Elementary Education                       Secondary Education  
 Special Education                               Early Childhood Education

*Figure 1. Survey for Preservice Teachers*

Directions: Please read each statement and evaluate your skill level within the context of implementing Response to Intervention (RTI) at the classroom/school level. Response to Intervention is a federally promoted model for identifying students at-risk of learning problems in the public schools in the United States. Public school educators must be able to provide high quality instruction and interventions based on student need, collect performance data to monitor student progress frequently, and make decisions about changes in instruction based on data collected.

Using the scale below, write the number which best reflects your skill level relative to RTI:

- 1 = I do not have the knowledge or skill at this time.
- 2 = I have basic knowledge and skills in this area.
- 3 = I have the knowledge, but still need some support to develop skills.
- 4 = I can use this skill with little support.
- 5 = I am skilled in this area and could teach this skill to others.

1. Understand the components of a three-tiered model for service delivery.
2. Understand the 4 steps in a data-based problem-solving model.
3. Understand what type of data is obtained from conducting universal screening.
4. Can articulate the relationship between universal screening and data-driven decision-making.
5. Can articulate the relationship between universal screening and early intervention.
6. Understand how frequent data-based progress monitoring is connected to the assessment of student performance.
7. Understand when a specific intervention should continue, change, or discontinue.
8. Knowledge of resources available to determine if your instruction/intervention is research-based.
9. Understand the “Big Five” areas for research-based teaching in reading.
10. Identify strategies for differentiating instruction.
11. Develop strategies to supplement core reading instruction.
12. Understand how to implement progress monitoring at each tier.
13. Understand how to use data to develop progress monitoring goals.
14. How much of your knowledge and skills related to Response to Intervention came from the following sources:
  - 14a. University Coursework
    - All            Some            None
  - 14b. University Practicum
    - All            Some            None
  - 14c. Professional Development Workshops
    - All            Some            None
  - 14d. Personal Reading/Research
    - All            Some            None
15. Overall, how would you rate your skills and general knowledge of RTI?
  - None
  - Basic or Limited

- Adequate
- Advanced/Expert

### *Procedures*

The survey was administered during September 2010 for each group. Preservice teachers completed the survey during a program-specific methods course for each group. Researchers read a scripted statement to each group of participants briefly addressing the purpose of the study, voluntary participation, and protection of anonymity. Candidates in each group were given 10 minutes to complete the survey. Those choosing not to participate turned in blank surveys. Surveys were color coded by program (i.e., early childhood, elementary, secondary, and special education). All students in any one session completed the same color survey.

### **Analysis and Results**

One hundred percent of the preservice teachers (i.e., 226) in four programs completed the survey (i.e., no one returned a completely blank survey, although some questions were not completed by some respondents). Results included 20 special education candidates, 102 elementary education candidates, 59 secondary education candidates, and 45 early childhood education candidates.

Preliminary analysis of data for questions 1–13 (elements of RTI knowledge) indicated that there was a high correlation between items, so it was not possible to distinguish significant differences based on these questions. Additionally, although technically questionable, treating the responses to questions 1-13 as continuous variables, averaging the responses by respondent, and applying ANOVA also yielded results which were consistent with those derived with a categorical analysis (Chi Square) with Q15 overall (knowledge). In other words, the results from questions 1–13 (elements of RTI knowledge) yielded the same results as Q15 (overall knowledge of RTI). Because of this initial analysis, it was determined that conclusions and implications based on the questions 1-13 would not be useful. Because questions 1–13 and Q15 essentially showed the same results, the researchers decided to analyze differences using Q15 as an assessment of RTI knowledge.

Analysis of data was conducted in the following manner: 1) By program (elementary, early childhood, secondary, special education), comparison of question 14a through d (source of knowledge and skills) with question 15 (overall rating of knowledge and skills), and 2) By program (elementary, early childhood, secondary, special education), question 15 (overall rating of knowledge and skills).

The first analysis reviewed results from question 14a through d (i.e., source of knowledge and skills) by program using Chi Square test. This data is summarized in Tables 1–4.

It is notable that on Question 14a (source of RTI knowledge coming from university coursework), there was a significant association between groups and amount of knowledge perceived to be obtained from this source. 65% of special education preservice respondents reported that all of their knowledge came from coursework, while secondary, preschool, and elementary preservice respondents reported that 30%, 34%, and 14%, respectively, all of their knowledge came from coursework. Question 14b (source of RTI knowledge coming from practicum), although significant, must be interpreted with caution because 25% of the cells had expected counts less than 5. However, given this caution, results suggested that respondents in special education, early childhood, and elementary education perceived that a large portion of RTI knowledge came from practicum experiences (52% special education, 70% early childhood, 70% elementary). This was not the case with secondary education respondents, where 54% perceived no knowledge coming from practicum. Questions 14c (source of RTI knowledge coming from professional development) and 14d (source of knowledge coming from workshops) suggested no significant association between source of knowledge and

group. These questions must also be analyzed with caution, because a large percentage (42% for 14c, 33% for 14d) of the cells had expected counts less than 5.

Table 1  
Comparison  
Groups by Question 14a  
Frequency Table of Groups by Question 14a (Source of RTI Knowledge and Skills-University Coursework)

Groups (Program)	All*	Some*	None*	Total
Special Education	13	6	1	20
	5.4222	11.467	3.1111	
	65.00	30.00	5.00	
Secondary	18	35	6	59
	15.996	33.827	9.1778	
	30.51	59.32	10.17	
Early Childhood	15	24	5	44
	11.929	25.227	6.8444	
	34.09	54.55	11.36	
Elementary	15	64	23	102
	27.653	58.48	15.867	
	14.71	62.75	22.55	
Total	61	129	35	225

\*Frequency Expected  
Row Percent  
Column Percent  
Frequency Missing = 3

Statistics for Table of Groups by Question 14a

Statistic	DF	Value	Probability
Chi-Square	6	26.8864	0.0002

Table 2  
Comparison  
Groups by Question 14b  
Frequency Table of Groups by Question 14b (Source of RTI Knowledge and Skills – University Practicum)

Groups (Program)	All*	Some*	None*	Total
Special Education	5	10	4	19
	1.6261	11.725	5.6486	
	26.32	52.63	21.05	
Secondary	2	24	31	57
	4.8784	35.176	16.946	
	3.51	42.11	54.39	
Early Childhood	5	32	8	45
	3.8514	27.77	13.378	
	11.11	71.11	17.78	
Elementary	7	71	23	101
	8.6441	62.329	30.027	
	6.93	70.30	22.77	
Total	19	137	66	222

\*Frequency Expected  
Row Percent  
Column Percent  
Frequency Missing = 6

Statistics for Table of Groups by Question 14b  
(Source of RTI Knowledge and Skills – University Practicum)

Statistic	DF	Value	Probability
Chi-Square	6	30.9523	<.0001

Note: 25% of the cells have expected counts less than 5 and validity of using Chi-Square might be affected.

Table 3  
Comparison  
Groups by Question 14c  
Frequency Table of Groups by Question 14c (Source of RTI Knowledge and Skills – Professional Development Workshops)

Groups (Program)	All*	Some*	None*	Total
Special Education	1	3	15	19
	0.2676	3.7465	14.986	
	5.26	15.79	78.95	
Secondary	0	9	47	56
	0.7887	11.042	44.169	
	0.00	16.07	83.93	
Early Childhood	1	12	28	41
	0.5775	8.0845	32.338	
	2.44	29.27	68.29	
Elementary	1	18	78	97
	1.3662	19.127	76.507	
	1.03	18.56	80.41	
Total	3	42	168	213

\*Frequency  
Expected  
Row Percent  
Column Percent  
Frequency Missing = 15

Statistics for Table of Groups by Question 14c  
(Source of RTI Knowledge and Skills – Professional Development)

Statistic	DF	Value	Probability
Chi-Square	6	6.4822	0.3714

Note: 42% of the cells have expected counts less than 5 and validity of using Chi-Square might be affected.

Table 4  
Comparison  
Groups by Question 14d  
Frequency Table of Groups by Question 14d (Source of RTI Knowledge and Skills – Personal Reading/Research)

Groups (Program)	All*	Some*	None*	Total
Special Education	1	8	10	19
	0.426	9.8834	8.6906	
	5.26	42.11	52.63	
Secondary	1	26	30	57
	1.278	29.65	26.072	
	1.75	45.61	52.63	
	20.00	22.41	29.41	

Early Childhood	0 0.9865 0.00 0.00	27 22.888 61.36 23.28	17 20.126 38.64 16.67	44
Elementary	3 2.3094 2.91 60.00	55 53.578 53.40 47.41	45 47.112 43.69 44.12	103
Total	5	116	102	

\*Frequency  
Expected  
Row Percent  
Column Percent

Frequency Missing = 5

Statistics for Table of Groups by Question 14d  
(Source of RTI Knowledge and Skills – Personal Reading/Research)

Statistic	DF	Value	Probability
Chi-Square	6	4.9810	0.5463

*Note:* 33% of the cells have expected counts less than 5 and validity of using Chi-Square might be affected.

The final analysis of data was performed by comparing question 15 (overall rating of RTI skills and knowledge) across programs using a Chi-Square test. Results are summarized in Table 5.

Table 5  
*Groups by Question 15*  
*Frequency Table of Groups by Question 15 (Self-Rating of Overall Skills)*

Groups (Program)	None/Basic*	Adequate/Expert*	Total
Special Education	4 16.018 20.00 2.21	16 3.9823 80.00 35.56	20
Secondary	47 47.252 79.66 25.97	12 11.748 20.34 26.67	59
Early Childhood	40 36.04 88.89 22.10	5 8.9602 11.11 11.11	45
Elementary	90 81.69 88.24 49.72	12 20.31 11.76 26.67	102
Total	181	45	226

\*Frequency  
Expected  
Row Percent  
Column Percent

Frequency Missing = 2

Statistics for Table of Groups by Question 15

Statistic	DF	Value	Probability
Chi-Square	3	51.7208	<.0001

Results of this test clearly demonstrate the existence of a significant association between groups and self-reported knowledge. There was a significant difference in self-reported overall knowledge of the special education group vs. the early childhood, elementary and secondary education groups. Members of the special education group appeared to consider themselves more knowledgeable than their peers in the other groups. It is notable that the three non-special education groups reported higher rates of “none/basic” and lower rates of “adequate/expert” knowledge compared to the special education group.

## Discussion of Results

### *Implications*

Although this sample was small, there were clear indications of differences between perceived knowledge and source of knowledge between special education, secondary, elementary, and early childhood preservice candidates. The majority of special education candidates (80%) rated themselves as having adequate or expert knowledge and skills in RTI, compared with secondary candidates (20%), early childhood candidates (11%), and elementary candidates (12%). The majority of special education candidates (64%) indicated that *all* knowledge and skills came from coursework, as compared with secondary candidates (30%), early childhood candidates (34%), and elementary candidates (14%). 52% of special education candidates reported that *some* of their RTI knowledge and skills came from field experiences, compared with early childhood candidates (70%) and elementary candidates (70%). Interestingly, 54% of secondary education candidates reported that *none* of their RTI knowledge and skills came from field experiences. Overall, special education candidates rated themselves higher in RTI knowledge and skills and reported the primary source as university coursework.

### *Limitations*

There are several limitations of this study. First, the extent to which results can be generalized is restricted because of the limited sample (i.e., one public university in the Midwest). Second, the survey has not been subjected to validity and reliability studies other than content validity. Third, candidate perception of RTI knowledge and skills may not accurately represent real knowledge and skills. It might be more accurate to assess knowledge and skills using performance-based measures.

## Conclusion and Application to Ukraine

This study begins to clarify perceived RTI (research-based instruction, progress monitoring, and data-based decision making) knowledge and skill differences between preservice teacher preparation programs at the point just before student teaching in early childhood, elementary, special, and secondary education for one institution in the United States. There were clear differences between perceived levels of RTI knowledge by candidates in general education (early childhood, elementary and secondary) and special education. The source of RTI knowledge varied across programs, with special education candidates indicating that knowledge and skills were gained primarily from university coursework, with some from practicum experiences. The source of RTI knowledge for early childhood and elementary candidates came less from university coursework and more from field experiences. Secondary education candidates reported gaining little RTI knowledge and skills from university coursework and half of these candidates reported gaining no RTI knowledge and skills from field experiences.

For future study in the United States, the following areas of investigation might be pursued. The methodology could be strengthened by refining the survey instrument, conducting reliability and validity studies, and broadening the sample to include institutions across the

country. Additionally, performance-based assessment might more accurately reflect RTI knowledge and skills. Analyzing growth of RTI knowledge and skills across time by assessing at various points during candidates' programs might reveal more accurately where information is gained.

In the United States, curriculum in each program area might affect to what extent and when RTI components are introduced and integrated. Study of the curriculums across programs could begin to identify how, where, and when critical RTI components are introduced and mastered. Because curriculum is often closely aligned with state and/or national standards, it would also be beneficial to compare national accreditation standards and program standards with key components of RTI. If an institution is nationally accredited and the program is nationally recognized, to what extent are the standards aligned with critical RTI components? The current study generally surveyed standards and a more in-depth analysis would be useful.

According to 2010 Ukraine Country Report, teachers were "not prepared to assimilate the new democratic approaches" (MESU, 2010 p.17), the focus of reform. Because the new principles were based on western pedagogical theories, teachers experienced difficulty finding ways to incorporate them into their teaching. The extent to which university programs train future teachers could impact the extent to which the reforms are successful in the schools. A study of the perceived knowledge and implementation of the Ukraine reform movement across different preservice teacher candidate programs (elementary school, secondary basic school, and upper school) within the higher education system could be informative. Important elements of school reform could reveal gaps in how preservice teachers are trained. Future studies could address the following questions:

1. How do Ukrainian preservice teachers at institutions of higher education perceive knowledge of the Ukraine reform components?
2. Do preservice teachers in various programs (elementary, early childhood, secondary, special education) at institutions of higher education differ in their self-assessed knowledge of the components of the Ukraine reform efforts?

The answers to these questions could help universities train future teachers and ultimately impact student learning in schools.

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