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3-6-2017

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Abstract

This study used an embedded mixed method design to examine teachers' experiences with a state-mandated kindergarten readiness assessment during its inaugural year. Participants were 143 kindergarten teachers from one county in a Midwestern state. In general, teachers did not perceive the Kindergarten Readiness Assessment as useful for one of its intended purposes of guiding instruction. Our findings did not indicate an adversity to assessment in general. Rather, perceptions that the new KRA was less useful for practice seemed to stem from administration issues, problems with the content assessed by the KRA, and participants' misunderstandings regarding the purpose of the KRA. Furthermore, participants reported that the KRA took away valuable time needed to help students adjust to their first time in formal schooling and needed to create a classroom community. Implications for creating and implementing kindergarten readiness and other assessments as well as preparing teachers to use readiness assessments are discussed.
Keywords: Kindergarten readiness, policy, assessment

Evidence suggests that data-based decision-making can improve teaching practice and students' learning (Connor et al. 2009; Fuchs, Fuchs, and Stecker 2010). Many recent policy initiatives have sought to provide teachers with

more access to information about their students (Basford and Bath 2014). This includes access to kindergarten readiness data, consisting of information concerning incoming kindergarteners' skills and abilities that predict long-term academic outcomes (Claessens, Duncan, and Engel 2009; Duncan et al. 2007) with the intent that data from these assessments are used to inform instruction. For example, in 2014, the U.S. Department of Education (DOE) announced its Race to the Top – Early Learning Challenge initiative (RTT–ELC), allocating $250,000,000 to support early education programming provided that states implement a kindergarten readiness assessment. Currently, 33 states are utilizing readiness assessments (U.S. Department of Education and U.S. Department of Health and Human Services 2014). Although policies establishing kindergarten readiness as well as other assessments are guided by research evidence and intended to support teaching practice, little is known about how these assessments are perceived and used within school contexts by teachers (Costenbader, Rohrer, and Difonzo 2000; Little 2012; May and Kundert 1992). Teachers are important stakeholders in assessment-related policies (Desimone 2006) as they must integrate new assessments into their existing practice, both administering the assessments and using data to make decisions about instruction. In light of this, the purpose of the present study was to understand the experiences of teachers during the implementation of a new kindergarten readiness assessment in one U.S. state.

Purpose of kindergarten readiness assessments

Kindergarten readiness has been broadly conceptualized as the skills that students must develop as they enter their first formal year of schooling (Meisels 1998; Snow 2006). These often represent the foundational skills for literacy, numeracy, and social competence that students need to be successful throughout schooling. Children are continually developing academic-related skills over time (Clements et al. 2011; Greenfield et al. 2009; National Early Literacy Panel 2008) and kindergarten readiness assessments can help teachers both identify and plan for developing these skills in young students. Notably, evidence has shown that scores on beginning of kindergarten assessments correlate moderately to highly with students' later academic outcomes (Claessens, Duncan, and Engel 2009; Duncan et al. 2007; Pianta et al. 2009).

One important purpose of kindergarten readiness assessments is to help teachers purposely plan for their students as they begin formal schooling. Teachers may use data from beginning of the year assessments to target whole class as well as individual students' learning needs (Meisels 1998; National Association for the Education of Young Children 2009). This ability to

support students' individual learning needs is especially important given that students vary widely in their early learning experiences prior to kindergarten entry. This can make the transition to kindergarten difficult for some (Rimm-Kaufman, Pianta, and Cox 2000) and providing early individualized support can have lasting effects on students' school success (Brooks-Gunn 2003; Datnow, Park, and Wohlstetter 2007). Moreover, readiness assessments can also serve as screening tools that help teachers identify individual students who may need additional assessment.

From a policy perspective, assessing kindergarten readiness through formal assessments is intended to serve multiple functions. For those states that received RTT–ELC grants (20 in total), it was required that a state's readiness assessment be 'aligned with the Early Learning and Development standards... with the goals of informing efforts to close the school readiness gap at kindergarten entry and informing instruction and services in the early elementary school grades' (ODE 2015a). Thus, the federal government outlines multiple purposes for readiness assessments. In addition to informing instruction at the individual student and class level through the provision of data to teachers, readiness assessments are intended for use at the district and state levels to better understand the population of students entering kindergarten and track efforts to close the achievement gap. Both of the latter have important implications for long-term policy initiatives at the state level; thus, it is also in the state's interest to ensure that readiness data collected is reliable and useful in understanding patterns across new kindergarten students.

Teachers' perspectives on using mandated assessments

For teachers, polices introducing readiness assessments mean that they must integrate these new assessments into their practice. In addition to administering the assessments, teachers are expected to use the data to inform instruction. This is fundamental to ensuring the usefulness of kindergarten readiness assessments for teachers. Currently, little is known about how kindergarten readiness assessments are perceived and used by teachers within school contexts, and it is unclear if teachers are achieving the goals intended by policies supporting readiness assessments (Costenbader, Rohrer, and Difonzo 2000; Little 2012; May and Kundert 1992). It is crucial to understand this as, although kindergarten readiness assessments may provide valuable information for teachers, such information is only useful so long as assessment data is integrated into their practice.

One way to anticipate how teachers might use readiness assessments is to examine their use of other mandated assessments. However, there is limited research regarding teachers' use of assessments to inform instruction (Datnow, Park, and Wohlstetter 2007). Although evidence suggests

that teacher engagement in data-based decision-making is associated with positive impacts for students (Connor et al. 2009; Fuchs, Fuchs, and Stecker 2010), there is also evidence that teachers need support in actually using data to inform their instruction (Swaminathan et al. 2014; Young 2006). Emerging research seems to indicate that contextual variables, such as scheduling or access to coaches, can influence teachers' use of assessment data (Roehrig et al. 2008) and mandates about curriculum can change teachers' instructional practices (Alvestad and Duncan 2006; Watanabe 2007). This may suggest that policies regarding the use of readiness assessments can shift data-use practices. Together, these studies seem to indicate variability in how mandated assessments may be incorporated into practice; yet more information is needed about teachers' experiences with readiness assessments.

The current study

The purpose of this study was to understand teachers' experiences with a kindergarten readiness assessment during its inaugural year in the state of Ohio. In 2014, Ohio developed a new kindergarten readiness assessment in order to align with federal recommendations (ODE 2015a). Previously, the state used the Kindergarten Readiness Assessment-Literacy (KRA-L) to help teachers understand students' language and literacy skills at kindergarten entry.

There were several differences between the old KRA-L and the new KRA. **Table 1** presents a side-by-side comparison of the assessments based on publicly available information shared by the Ohio DOE. According to the state, the KRA differed from the KRA-L in that it added additional content areas and also included indirect assessment items completed via teacher observation during classroom activities (ODE 2015a). The KRA met the content standards proposed by the U.S. DOE (ODE 2015a) in that it focused on language and literacy, math, science, social studies, social skills, and physical well-being/motor development whereas the KRA-L only assessed language and literacy. In its inaugural year the KRA contained 63 items; 34 direct response items and 29 observation-based rubric scores (ODE 2015d) compared to the KRA which contained 29 items. Teachers received a one-day training on the KRA prior to the start of the school year.

All kindergarten students were administered the KRA between the first day of school in September and November 1 (MSEA 2014). Ohio's rollout of the KRA provided an opportunity to better understand teachers' experiences with and perspectives on implementing the new assessment and fulfilling the proposed purposes for such assessments. We used an embedded

mixed-method design (Creswell and Plano Clark 2011) integrating primary survey data with supplementary qualitative focus group data in order to address two questions:

(1) What were teachers' experiences with implementing the new state-mandated KRA?
(2) How did teachers perceive the KRA as a tool for informing instructional decision-making?

Table 1. Elements of the KRA and the KRA -L.

	KRA	*KRA-L*
Content	• Language and literacy • Math• Science • Social studies • Social skills • Physical well-being/motor development	• Language and literacy
Test designer	Ohio, Maryland, researchers	Ohio (with consultation from researchers)
Number of years administered	One	Ten
Items	63 items	29 items
	• 34 student participation items (selected response and performance tasks) • 21 observation-based items (teacher scores with rubrics based on student observations) • 20 items needed to be administered one-on-one with student"	• All student participation items (selected response and performance tasks)
State-reported length of administration	• 20–60 mins/student for one-on-one items • 20–30 mins/small group for observational items	• Approximately 15 mins
Data entry and storage	Teachers hand entered individual item scores for most items into a state-wide online data entry system. 12 items could be directly completed on an iPad	Teachers or administrators reported total scores to districts who reported the data to the state

Sources: Ohio (2011), ODE (2015a), (2015b), (2015c), (2015d), MSEA (2014).

Method

Participants

All kindergarten teachers (*N* = 438) working in public elementary schools from one county in Ohio were invited to participate in the study. This was a purposive sample. We selected this county because it was the second largest city in the state and the 15th largest city in the country. As such, it included 16 diverse school districts, urban and suburban, serving a variety of students. Given the size of this district and the diversity of students attending these schools, we believed this sample to include a range of teachers whose experiences could be relatable to other teachers working in both urban and suburban settings as well as high-poverty to high-income districts.

Within the four-week study period, 143 kindergarten teachers (33% of invited teachers) representing each of the districts responded to the survey. Although we offered incentives to all participants, teachers from one district were not able to accept these incentives due to district policy. *T*-tests revealed that the non-incentive sample had more years of experience teaching than the incentive participants, $t(131) = -2.12$, $p = .036$; however, there were no other significant differences between samples (*t*-values from −1.36 to .99, *p*-values from .181 to −.811). On average teachers had 15.15 years of teaching experience (SD = 9.43), and 79% reported having administered the KRA-L (*n* = 113). Participants were distributed among suburban districts, 50.4% (*n* = 73), and urban districts, 44.8% (*n* = 60); 7.0% of participants (*n* = 9) did not report district affiliation. This was fairly representative of the county which was comprised of half urban and half suburban districts (ODE n.d.). Teachers were all required to attend training on the KRA prior to administration. The majority of participants reported spending under 4 h in training (58.0%), with some reporting spending 4–8 h (13.3%), 8–16 h (23.8%), or more than 16 h (2.0%) in training, 2.9% unreported.

Data collection

The embedded mixed-method design allowed for the collection of two strands of data, with the understanding that a single strand of data was not necessarily sufficient to answer the research questions (Creswell and Plano Clark 2011).

Online survey

The first strand of data collection consisted of an online survey. In March of 2015, teachers were notified via mail about a forthcoming online survey regarding their experiences with the KRA. In April of 2015, four months after

the KRA administration deadline, all teachers in the county were emailed with the link to the online survey. This timing was such that teachers would have completed the assessment, received the data, implemented instruction, and had time to reflect on the KRA. The survey remained open for one month with weekly reminders sent to those email addresses for which there was no corresponding survey response.

The survey consisted of two types of questions, listed in Tables 2–5. Fixed-response questions asked about training opportunities, KRA administration, and how data were used in instructional decision-making. Similar questions were asked about the KRA-L for comparison purposes. In addition, the survey included five open-response questions about participants' experiences with the KRA. The goal of these questions was to obtain a more nuanced understanding of participants' experiences with the KRA and to elicit additional information about fixed-response answers, allowing participants to describe their experiences in their own words. For example, participants were asked, 'Do you have any additional comments about the KRA?' and 'How does the KRA improve instruction?'

Focus group data

The secondary strand consisted of data collected through focus group interviews and was used to triangulate and elaborate the initial research findings. At the end of the online survey, participants were asked if they were interested in participating in focus groups regarding the KRA. From those responding yes, two additional Likert-scale items were administered to identify participants for a focus group consisting of teachers who expressed strong negative opinions about the KRA and a group consisting of teachers with moderate opinions about the KRA. Our initial intention had been to conduct a focus group of participants with positive responses to the KRA; however, there were no participants meeting this criterion. A third focus group with only participants from the most high-need district in the county was recruited to determine if there were differences in responses by district type. After grouping potential participants, we randomly selected individuals to invite to the focus groups until we had a maximum of six participants per group. We purposefully selected smaller, homogenous groups to promote within-group dialog (Freeman 2006; Krueger and Casey 2002). All focus group participants received an additional incentive.

Each focus group was asked the same four questions about their experiences with the KRA. The questions were intended to solicit information that could be used to supplement that from the online survey, both triangulating and elaborating the findings (Patton 2002). The focus groups were conducted by the first two authors at a university research center, with each session lasting about an hour. All focus group interviews were audio-recorded and transcribed for analysis

Data analysis

Descriptive statistics were used to summarize responses to the fixed-choice items, presented in Tables 2–4. We also investigated whether there were differences in participants' responses based on previous experiences with the KRA-L by comparing the responses of participants to similar questions about the KRA and the KRA-L.

Each open-choice question was answered by at least 90% of participants indicating that open-comment items reflected the experiences of the sample as a whole. The first two authors independently reviewed participants' responses for patterns related to the research questions following a thematic analysis method (Braun and Clarke 2006). They then met and generated a list of themes for each question, subsequently used to code the responses. The resulting codes were examined in relation to convergence, corroboration, expansion, and elaboration of the findings from the fixed-response survey questions (Greene, Caracelli, and Graham 1989). More information about the coding is provided in the online Supplementary material. Importantly, a single response could receive more than one code. For example, the response to the question regarding additional comments about the KRA, 'It was much too long and required teachers to be out of the classroom or working individually with students when they should have been building classroom community,' received one code for administration difficulties and another for taking away time from beginning of the year routines (i.e. building community).

Two steps were taken in order to interpret the open-comment data in concert with the fixed-choice responses. First, to understand how common themes were in participants' responses, we calculated the percentage of participants whose comments reflected each theme. As part of this process, we observed that there were overlapping themes in participants' responses across questions. As such, we looked for broader patterns across the open-comment questions, collapsing these codes into overarching themes for ease of contextualizing the fixed-choice data, presented in Table 5.

We also used these overarching themes to explore the focus group transcripts for confirming, disconfirming, and elaborating patterns (Greene, Caracelli, and Graham 1989). Although we looked for differences in participants' reports based on their specific focus group, except for how the KRA measured learning standards, participants across groups generally provided similar responses. Overall, these data were mostly confirmatory of the survey findings; however, they were also elaborative.

Table 2. Mean and standard deviation or percent (%) of responses on fixed-item questions.

Question	Responses
On average, how long did it take you to administer the KRA to a single student?	
Up to 1 h	48%
1.25–2 h	30%
More than 2 h	18%
How many total hours did the KRA take to administer?	
Up to 15 h	6%
15.25–20 h	8%
20.25–25 h	18%
25.25–30 h	15%
More than 30 h	45%
To what extent do you agree with the following statements: (strongly agree =1, agree = 2, neither agree nor disagree = 3, disagree = 4, strongly disagree = 5)	
The KRA is simple to use	3.63 (1.24)
The KRA administration technology was easy to use	4.10 (1.41)
*The KRA data entry progress was not difficult	3.87 (1.40)
Data from the KRA helps improve instruction	4.19 (1.10)
*The KRA ensures growth opportunities for students	3.97 (1.23)
The KRA ensures growth opportunities for very low achieving students	3.91 (1.20)
The KRA ensures growth opportunities for very high achieving students	4.20 (1.02)
*The KRA increases student learning	4.11 (1.16)
*The KRA helps teachers be more effective	4.14 (1.20)
Overall, the KRA was beneficial to me as a teacher	4.28 (1.07)
Overall, the KRA was beneficial to my school	4.00 (1.31)

Notes: Participants had the option to leave items blank, thus for this and subsequent tables percentages do not add up to 100%, nor do the reported *n*'s total the overall sample size.
*Denotes items that have been reverse coded for ease of interpretation.

Table 3. Percent (%) of teachers who reported using data from the KRA to inform instruction.

	Physical /motor (%)	Language and literacy (%)	Math (%)	Science (%)	Social studies (%)	Social skills (%)
Planning	8	31	23	3	3	16
During teaching	6	40	6	5	6	14
Working with individual students	4	33	4	5	4	21
Integrated with other assessments	5	35	28	4	3	9

Table 4. Comparison of participants' (n = 113) experiences with the KRA -L and KRA on matching items.

	KRA-L	KRA comparison
On average how long did it take you teacher to administer the KRA-L?		
Up to 1 h	89%	50%
1.25–2 h	6%	31%
More than 2 h	5%	19%
To what extent do you agree with the following statements: (strongly agree =1, agree = 2, neither agree nor disagree = 3, disagree = 4, strongly disagree = 5)		
The KRA-L was simple to use	1.94 (1.20)[1]	4.22 (1.11)[1]
The KRA-L helped improve instruction	2.60 (1.38)[2]	4.33 (.99)[2]
*The KRAL increases student learning	2.40 (1.62)[3]	3.70 (1.22)[3]
Overall, the KRA-L was beneficial to me as a teacher	2.69 (1.43)[4]	4.16 (1.08)[4]
Overall, the KRA-L was beneficial to my school	3.34 (1.46)[5]	4.01 (1.26)[5]

Notes: Average length of administration and the Likert items are all based responses from only those participants who had experience administering the KRA .
*Denotes items that have been reverse coded for ease of interpretation.
1. $t(107)$ = 13.41, $p < .001$, 2$t(107)$ = 11.85, $p < .001$, 3$t(107)$ = 5.54, $p < .001$, 4$t(107)$ = 11.72, $p < .001$, 5$t(107)$ = 9.44, $p < .001$.

Table 5. Overarching themes with examples from focus group data.

Code	Definition	Example
Purpose	Discussion focused on how teachers were unclear about the purpose of the KRA	"And what's the purpose? You know, I think that needs to be asked, too.'
Beginning of the year	Discussion focused on how the KRA took away from beginning of the year activities	"It was bad for the teachers. It was bad for the kids, and it lasted a very, very long time. … As it is, with kindergarten students, they need –you know, they're the most dependent kids in an elementary school. … I mean that's really hard at the beginning of the year before kids know routines, before they know anything about the classroom …"
Content assessed by the KRA	Discussion focused on the content assessed by the KRA	"You know, there's 52 letters, how many can you identify, and that wasn't on there and I just couldn't believe that.'
Other assessments	Discussion focused on the use of other assessments in addition to the KRA	"So in addition to the stuff that was not helpful at all, we were doing the things we knew we needed to do as, you know, good kindergarten teachers, gathering that information so that we can move forward with, you know, figuring out where everybody's beginning and where we need to go.'
KRA-L	Discussion compared the KRA to the KRAL	"I mean, it was more informative. I think the KRA-L, – "because you did all the letters, you did all the uppercase letters – … So I think the KRA-L actually had better information.'
Timing	Discussion focused on when the KRA should have been given (either before kindergarten or in preschool) or how the results were outdated by November	"Yes, because if you assess somebody in August and then somebody at the end of October – … it's way different.'
Positive	Discussion focused on a positive aspect of the KRA	"I do think it's nice to meet with each child one-on-one, like it was nice to have those few minutes with that child.'

Results

The basic descriptive statistics for the fixed-choice items and the frequency of themes in the open-choice items are presented in Tables 2–5. Using our embedded mixed-method design, we analyzed and subsequently discuss our findings by integrating the multiple strands of data, using the focus group data to elaborate the survey data.

In general, participants did not perceive the KRA as beneficial to instruction. Teachers reported that at best the KRA minimally improved instruction, but most tended to disagree with statements about the KRA being beneficial and agreed with statements regarding the lack of benefit of the KRA for teachers and students. In response to the open-choice question regarding how the KRA improved instruction, 28% of participants reported that it did not improve instruction and almost 10% of participants reported that it took away from instruction. Moreover, teachers rarely reported using the KRA to inform instruction (Table 3). The KRA was viewed as most informative for language and literacy instruction for planning (34%), during teaching (25%), and in integrating with other assessments (34%). It was used the least for science and social studies teaching activities (3–5% across items). This pattern was confirmed by focus group participants who reported that the KRA minimally improved instruction. One focus group teacher commented, '… the frustrating part was it didn't inform my instruction.'

These issues with the KRA's utility for instruction seemed to be tied to three major themes across the data: the administration process, the content of the KRA, and the purpose of the KRA.

Administration

One reason why the KRA was not viewed as beneficial to instruction may be related to participants' reports regarding difficulties with administration. The majority of teachers reported that it took one to two hours per student (78%) to administer the KRA. It is important to note that, on average, teachers had about 30 students in their classroom (SD = 12.23) and almost half of participants (45%) reported that the KRA took over 30 h to administer. When contextualizing this data with the focus group responses, the considerable time commitment necessary for administering the KRA to all students in a classroom became more evident. For example, one focus group participant said,

> It was so time consuming, and you're working so much one-on-one that the other 24, 25 kids are not able to be instructed.… they lost all that instructional time. So they weren't

as far along academically – within [*sic*] the standards as they should have been because it took 60, 80 hours to administer and that's several, several – that's a month of kindergarten that was lost.

Whereas the survey responses to the Likert items about administration seemed to suggest that participants were fairly neutral about the ease of KRA use (*M* = 3.63, SD = 1.24), in their additional comments on the KRA, 70.4% of participants reported that they had general administration issues with the assessment, frequently related to the time that it took to administer. This administration time may have been due to reports concerning the coordination of multiple materials needed to administer the assessment as one focus group participant said, 'it's a logistical nightmare managing all of the parts and pieces.'

These problems with administration created broader concerns for participants and their instruction. 44% of participants expressed concerns that the KRA took away from important beginning of the year activities such as acclimating children to school, establishing routines, and building community. Some of the open comments noted, 'It takes valuable time that should be used to get to know your students and get them adjusted to classroom routines,' and similarly, 'It really impacted the beginning of the year in terms of building routines and relationships with students.'

Content of the KRA

Participants' comments about the content of the KRA may also contribute to why the KRA was not viewed as useful for informing instruction. In open-comment responses, 41% of participants reported that the KRA was intended to measure content that should have been covered in preschool. For example, one participant wrote, 'The KRA assesses end of Pre-K skills ... once I gave the KRA, I began focusing on student growth in learning the kindergarten objectives for the year.' This was reflected in two of the three focus groups in which participants seemed to think that the KRA assessed preschool skills and reported being unclear about how the KRA mapped onto the kindergarten curriculum. In the high needs district focus group, teachers reported that the KRA measured end-of- kindergarten content. As one teacher from this district said, '... its questions go towards things that we would teach at the end of the year. What we want to know with our kids coming in is, can you write your name? Can you count to ten? Can you do a one-to-one match? Can you make sense of a common direction?' Thus, it seemed that some teachers thought the KRA assessed end of preschool skills whereas others thought it targeted end of kindergarten skills.

There were mixed reports about whether the content assessed by the KRA enhanced teachers' knowledge about students. Twenty-three percent of participants reported that the KRA did not improve instruction because the data were incomplete and that they needed to supplement the KRA with other assessments. One common example of this 'incompleteness' reported across open comments and the focus groups was related to students' letter knowledge. Whereas the KRA only asked about a few letters, participants frequently reported that they needed to know students' knowledge of all uppercase and lowercase letters as they were responsible for teaching this in kindergarten. Some teachers (11%) also reported that the KRA did not benefit their instruction because other assessments they administered, often also mandated by the state or district, actually provided better information.

Purpose of the KRA

The lack of clarity about the content of the KRA, in terms of what it was assessing, may be linked to our findings regarding participants' understanding of the purpose of the KRA. Importantly, only one-third of participants responded that the KRA was intended to provide baseline data and only 14% noted that it was for 'state purposes,' two of the stated intents of the assessment. Other important patterns in participants' responses, which did not align with stated purposes, were that the KRA was to 'assess' skills developed in preschool and to determine if students were ready for kindergarten. Interestingly, many teachers reported the assessment as a 'gatekeeping' mechanism but then commented that the KRA did not keep students out of kindergarten. For example, one participant wrote, 'To determine if students are ready for kindergarten. However, if it proves they are not there is no real follow up...' This lack of clarity about the intent of the KRA may have prevented teachers from using the data to inform instruction.

The focus group interviews revealed that the KRA was also being used for other purposes. Specifically, teachers reported using the KRA as part of the assessments for the state's identification of students who might not be able to read in 3rd grade, as a means for determining students who were 'at-risk,' and as a state-required teacher-created assessment focused on learning goals for the specific students in their classroom. These additional uses seemed to be coming from the teacher, school, and district levels.

General use of assessment

In order to understand teachers' perceptions of assessment use overall as well as rule out general biases against assessment, we examined their survey responses regarding the previous state-mandated assessment, the KRA-L, presented in Table 4. Overall, participants agreed the KRA-L was simple to

use (*M* = 1.94, SD = 1.20) and that it somewhat helped improve instruction and benefitted teachers (*M* = 2.60, SD = 1.38, and *M* = 2.69, SD = 1.43, respectively) and were neutral about its benefit to the school (and *M* = 3.34, SD = 1.46). When comparing participants' responses on the same questions concerning the KRA and the KRA-L, participants always responded more favorably regarding the KRA-L (Table 4) confirming their more positive perceptions of the KRA-L. Participants also used other assessments in their teaching, reported in both the open comment and focus group data. Indeed, focus group participants reported that they were required by their districts to administer additional assessments along with the KRA. Thus the teachers were using many different assessments in their practice and it did not seem that participants were, in general, averse to using assessments to inform instruction. Only the KRA was perceived as not useful. As one focus group participant commented, 'So it didn't actually give you – it didn't give us the information we needed in order to give us accurate information. I think that a kindergarten readiness test is fine. I think that that's a great idea.'

Discussion

The purpose of the present study was to understand teachers' experiences during the inaugural year of a state-mandated, kindergarten readiness assessment. This study adds to our limited knowledge about how readiness assessments, along with assessments in general, are perceived and used in schools and how these perceptions are related to teachers' take-up of mandated policies. By focusing on teachers this study provides unique insight that can inform policy-makers' ongoing development and implementation of such assessments.

Although policies regarding readiness assessments are based on evidence of the skills students need to be successful in school (Claessens, Duncan, and Engel 2009; Duncan et al. 2007) as well as evidence that teachers can successfully use data to improve student outcomes (Connor et al. 2009; Fuchs, Fuchs, and Stecker 2010), these policies are for naught if teachers do not actually use readiness assessments to inform instruction. By focusing on the perspectives of teachers, this study demonstrated that the KRA did little to inform teachers' reported data-based decision-making. Thus one intended policy aim of the KRA did not seem to be met.

Equally central in our findings were participants' explanations as to why the KRA did not inform instruction as these reasons suggest ways to make assessment-related policies more efficacious in achieving their intended outcomes. The participants did not seem to be averse to assessments; rather they seemed to be averse to the KRA. In fact, teachers frequently discussed the use of other assessments as more informative for instruction, including

the previous kindergarten assessment KRA-L. As this was the inaugural year, we anticipated some issues related to administration. However, our findings extended beyond difficulties with administration to larger challenges faced by teachers as they attempted to integrate the use of assessment data into practice. Based on participants' reports, there seemed to be several needs related to improving assessments provided to teachers. This includes providing actionable assessment data while improving training and streamlining multiple assessment processes. The findings from this study can inform policies related to the creation and refinement of assessments, as well as supporting teachers in the data-use process.

Providing teachers with actionable assessments and data

In order to achieve the benefits of data-use, teachers must find the data useful for instruction. This did not seem to be the case with the present readiness assessment. This was, in part, related to the length of administrative process as well as the actual content of the assessment.

Arguably, the administration time may diminish over time and with assessment familiarity as other researchers have demonstrated with assessment use (Jacobs et al. 2009); however, many participants in this study were concerned about the length of time taken. As this is the time when students first enter formal schooling, much of the beginning of kindergarten is dedicated to helping students learn to 'do school' (Perry and Weinstein 1998). Given the length of the administration process, coupled with other required assessments, beginning of the year activities typical to these teachers were delayed. This may not only prove challenging for establishing classroom routines but, as many teachers noted, also delay meaningful instruction, thus undermining potential positive benefits to teachers and students from the KRA. Given the likely increase in the use of assessments for students as they enter formal schooling (Basford and Bath 2014), coupled with teachers' concerns, more attention by both policy-makers and researchers as to how assessments function and influence these unique contexts is particularly important. Thus, more attention is needed to the role of assessments in early learning and the practicality of implementing such assessments.

Importantly, teachers reported a range of beliefs regarding what the KRA assessed, suggesting that stakeholders need to provide more clarity regarding the content of assessments. By this we mean that there was confusion as to how the content assessed via the KRA fit into the context of the kindergarten learning standards. Many participants reported believing that the KRA measured preschool skills or what instruction was occurring in preschool and as such was not necessarily beneficial for informing their work. In contrast, other participants, particularly those in the focus group from the highest-need district, reported that the KRA assessed content that would

not be covered until the end of kindergarten. It seems then, that for some teachers, the KRA measured content that they were no longer interested in; whereas for others, it measured content that teachers were not intending to cover until later. This problem of content alignment with learning standards was underscored by one focus group participant who reported that she could not find any of the content covered in the KRA within the Ohio Kindergarten through Grade 3 Learning and Development Standards (ODE 2010). This suggests that policy-makers could improve the use of readiness data by providing more clarity regarding the content of readiness assessments and how that content is linked to learning standards. Thus demonstrating for teachers how data from readiness or any assessments fits into the overall curriculum and learning goals for students. Furthermore, if teachers had a better understanding of the overall purpose of the KRA this may help them interpret how its content was related to overall learning goals. These steps could include more teacher-friendly documentation (easier to read documents as well as a wider availability of formats) as well as more effective training.

Regardless, most participants found that the KRA did not provide them with immediate, actionable data. Balancing the multiple purposes of readiness assessments to both inform instruction and provide government-level data should also be considered in light of the information that teachers wish to learn about their students. Teachers, particularly those in the focus groups, noted that the KRA was missing valuable assessment information. For example, focus group participants noted that the assessment only tested receptive language and not expressive language. They were concerned that students were not asked to produce words or sounds, as had been required on the KRA-L. Additionally, there were many teachers who focused on how the KRA only contained six or seven items assessing letter knowledge. At the administrative levels, this type of information is particularly beneficial for understanding the skills of students entering kindergarten and tracking efforts to close achievement gaps. For teachers, sampling letters to assess the broader construct of letter knowledge can provide preliminary information about students. However, instructional planning may require additional follow up for low-performing students, using an assessment containing all letters (Piasta 2014). Based on participants' responses it seems that they did not understand the KRA as a tool that could help direct them to additional assessments; rather they viewed it as either a replacement or an extra assessment. Thus, in general, it does not seem that the KRA always addressed readiness content that teachers were interested in knowing and they were not supported in understanding how to use the resulting data. Other researchers have also reported that teachers of varying grade levels are open to the use of data to improve practice (Pyle and DeLuca 2013) but were concerned about the kinds of data that are available from mandated

assessments (Ingram, Louis, and Schroeder 2004), suggesting that this may be a larger problem. Thus, policy-makers must balance state-level data collection needs with the needs of teachers and should consider ways to create assessments that provide teachers with data that helps them plan instruction and that are also clearly aligned with state-level learning standards.

Providing training and streamlining the readiness assessment process

In order for teachers to use readiness data as intended, it appears that there needs to be more communication about that intent. In the case of participants in this study, there were many explanations as to the purpose of the KRA, only a few of which actually aligned with state and national aims. Policy-makers should help teachers develop better understandings regarding the intent of assessments so that teachers recognize how they are supposed to be using data.

Notably, other researchers have found that providing time for teachers to examine data and supporting them in interpreting that data has led to successful changes in data use practices (Roehrig et al. 2008; Swaminathan et al. 2014; Young 2006). The limited time that teachers reported spending in training may have contributed to their inability to use the data to inform instruction. Therefore, as policy-makers consider how to support teachers in the use of readiness assessments they may need to expand upon the traditional one-day training model to other formats of training and support.

Finally, many participants reported using other assessments in addition to the KRA suggesting that the new KRA was being integrated into an existing assessment structure. Importantly, participants reported that existing assessments were equally if not more informative, while also having the advantage of being easier to use. Part of this explanation could be related to familiarity with the pre-existing measures, such as our finding that teachers administering the KRA-L typically had more negative responses to the KRA than those who had not. However, given that participants reported that some of these assessments were more informative, this should still be addressed by policy-makers. Whereas having a more robust assessment battery could be beneficial for teachers (Piasta 2014; Lonigan, Allan, and Lerner 2011), there are limitations to teachers' time and resources; thus it is imperative to consider how assessments can be used to get the most benefit without diminishing instructional efficacy.

Limitations and future directions

One main limitation of this study is that the data were only collected in one county; thus caution must be used in interpreting these findings beyond

these participants. It is important to note that our response rates were, on average, typical for online surveys (Deutskens et al. 2004; Shih and Fan 2009) although lower than may be reported for other types of surveys, and that our participants were representative of the county. Moreover, our findings mirror and expand upon those found from respondents in Maryland regarding their views on implementing the same KRA (MSEA 2014). Another limitation of this study is that we were unable to conduct a focus group of participants who thought favorably about the KRA. Perhaps we only heard from people who felt strongly about the KRA, a possible bias in this type of survey method (Shih and Fan 2009), although we took steps to ameliorate this by offering a sizeable incentive and were able to interpret our findings in the context of participants' responses regarding the previous KRA-L.

This study could not empirically explore the utility of the KRA as it compared to locally created assessments or any other assessments that teachers reported using. Indeed, although teachers reported that their existing assessment systems were at best redundant with the KRA, the range in types of 'other' assessments was such that it was difficult to disentangle teachers' perspectives by assessment type. For example, focus group participants reported using district-level assessments, school-level assessments, as well as their own assessments at the beginning of the year and this seemed to vary across teachers. Thus, more research is needed to understand how teachers perceive the utility of different types of assessment. Additionally, there is a long-standing debate regarding the benefit of formative assessments over state-mandated or standardized assessments (Black and Wiliam 1998; Dorn 2010). It is unclear from the present analyses how the use of the KRA may change teachers' use of local and formative assessments. More research regarding the change in teachers' assessment practices over time due to such policies and the efficacy of these changes for improving student outcomes should be explored. We also reiterate that these findings were teachers' responses to the first year of the KRA implementation. Indeed, there is evidence that teachers' use of data in mandated testing contexts develops over time, such that there are stages of data-use that become more complex with familiarity (Jacobs et al. 2009); therefore, it may be possible that teachers may find the KRA more beneficial over time. However, based on our data this would at least require developing teachers' understanding of the KRA while also addressing concerns related to the content of the KRA. Although this was the first year for KRA, it was not the first year for using a kindergarten readiness assessment in general so teachers already had some familiarity with using readiness data. More research is needed to understand teachers' perspectives on readiness assessments over several years of implementation.

Conclusion

This study provided insight into teachers' perspectives on the implementation and use of a new kindergarten readiness assessment. As key stakeholders expected to implement this policy, teachers were strategic to fulfilling the multiple purposes of readiness assessments. Our results demonstrating that teachers did not find the KRA beneficial for practice suggest that this was related to administration and content problems as well as a lack of clarity regarding the purpose of the KRA. Policymakers and assessment creators should strive to develop assessments that are quicker to administer and provide timely and actionable data to teachers while balancing this with the need to collect large-scale student data. Moreover, consistent training that adequately informs teachers about the purpose of assessments is crucial in ensuring that mandated assessments are implemented and used as intended. Finally, by understanding the perceptions of teachers, we underscore the need for more discussion among policymakers, researchers, and those in the field charged with implementing policies in order to improve the process and shift instruction such that it has meaningful impacts for students.

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