

Novice Reduction for Gap Closure

Making a Moral Imperative a Reality

The purpose of this paper is to explain the need for novice reduction in Kentucky, the approach that has been taken to address the issue and the plan for deployment that will make this moral imperative into a continuous improvement reality for Kentucky students.

The Need for Novice Reduction

On June 12, 2015 Kentucky Commissioner, Dr. Terry Holliday, laid out the need for novice reduction in Kentucky in his blog post titled, "A Moral Imperative." The text of that post can be found below:

A Moral Imperative

This week, the Kentucky Department of Education (KDE) presented several regulations for final review by the Interim Joint Committee on Education. The regulations are the final step in revisions to the Unbridled Learning Accountability Model that was developed five years ago as a response to requirements in Senate Bill 1 (2009). One of the major changes to the regulations was the addition of a new measure called novice reduction. Several legislators had questions about this new measure and I thought you might be interested in understanding why the new measure was added.

For the past three years, KDE has used the Unbridled Learning accountability model. One of the concerns we have heard from education groups, civil rights groups and conservative groups is that the accountability model was not pushing hard enough on closing achievement gaps. While the accountability model did have a measure of efforts to close the achievement gap, many groups felt that individual groups of students were not as evident as they had been under No Child Left Behind. As I looked at the results from 2014 assessments, I became convinced that we needed more focus on the performance of individual groups of students.

With our state assessments, students receive ratings of distinguished, proficient, apprentice or novice. The novice level is very low and represents student performance that is several levels below college- and career-ready work. Here are some startling numbers.

Percentage Novice Students						
Group	Elementary Reading	Elementary Math	Middle School Reading	Middle School Math	High School English II	High School Algebra II
All Students	21	17	21	17	34	24
African American	38	31	40	33	54	37
Hispanic	28	22	29	22	43	28
Migrant	32	25	39	27	58	35
ELL	43	32	61	43	88	45
Free/Reduced Meals	27	23	29	23	45	32
Individual Education Plan	40	38	51	45	73	55

Percentage Novice Students						
GAP Group	27	23	29	23	45	33

While the percentages are very concerning, the real numbers are even more alarming. We have more than 80,000 students performing at the novice level in reading and more than 60,000 students performing at the novice level in math. These are the students who will be challenged to complete high school. These are the students who will not reach college- and career-readiness. These are the students who will need social services.

These are the students who have a high likelihood of incarceration. These are the students that Kentucky must care more about and provide intervention for before it is too late.

KDE will be focusing efforts on helping schools and districts implement specific strategies to address this high percentage of novice students. We will provide specific support around reading and numeracy programs. We will provide support for positive behavior interventions to address student behavior that interferes with learning. We will provide support for culturally responsive instruction. We will also provide a significant focus on accountability and incentives for schools, districts, and educators for helping move novice students to apprenticeship levels or above.

This issue is moral imperative for our Commonwealth and a major civil rights issue for our communities.

Based on the vision established by the commissioner in this blog, the Kentucky Department of Education (KDE) has identified the following questions to address in its daily work:

1. Do we know what is working to help reduce novice performance and close achievement gaps in Kentucky schools?
2. Are the processes behind those things that work clearly defined?
3. How does and can KDE provide clear messaging and support for closing the gap through novice reduction?
4. Where does intervention for novice reduction fit into what Kentucky knows about the *Characteristics of Highly Effective Teaching and Learning* that are common to all content areas, and the *Kentucky Framework for Teaching*, which is used as a basis for the state's Professional Growth and Effectiveness System?

The following two sections describe the approach KDE has taken with this work and the method of deployment.

The Approach

Step 1: Design the system for improving the work

The department used a SIPOC, a high-level picture that depicts how a given process is servicing the customer. SIPOC is an acronym for Suppliers – Inputs – Process – Outputs – Customers. [Six Sigma: The Science behind Breakthrough Improvements](#) defines these as follows:

- **Suppliers** provide inputs to the process.
- **Inputs** define the material, service and/or information that are used by the process to produce the outputs.
- **Process** is a defined sequence of activities that usually adds value to inputs in order to produce outputs for the customers.
- **Outputs** are the products, services, and/or information that are valuable to the customers.
- **Customers** are the users of the outputs produced by the process.

In more formal terms, a SIPOC can be seen as a high-level process map. It is typically used during the design phase of a process improvement project, to help clearly understand the purpose and the scope of a process. It is a starting point in identifying the voice of the customer (VOC). It gives an initial insight into the vital inputs (or X variables) of a process $[Y = f(X)]$ that have significant impact on critical outputs (or Y variables). It also becomes a primary input to detailed process map construction.

Kentucky Department of Education policy advisors were tasked with identifying all legislation and programs in Kentucky that address customer input and who the suppliers are. The result can be found in the chart below.

Achievement Gaps	KRS 158.6549
Program Reviews	KRS 158.6453 (SB1)
Program Reviews (Instructional Programs and Support)	703 KAR 3:230
Literacy (RTA)	158.792; 704 KAR 3:480
Mathematics	KRS 158.848
	KRS 164.525
	KRS 158.842
	KRS 158.844; 704 KAR 3:530
	KRS 158.847
	KRS 158.803
School Readiness and Early Learning	KRS 157.3175; 704 KAR 3:410
	KRS 157.318
	KRS 157.226; 702 KAR 3:250
	704 KAR 3:420
	704 KAR 3:440

	704 KAR 5:070
Continuous Improvement	703 KAR 5:140
	KRS 158.782; 703 KAR 5:190
	703 KAR 3:205
	KRS 160.346; 703 KAR 5:260
	703 KAR 5:225
Elementary and Secondary Education Act/No Child Left Behind Waiver	Three principles built around meeting the needs of all students and teachers
Title I, II, III requirements including equitable distribution of teachers	<p>All students should have teachers who have the capacity to meet their learning needs. KDE has developed and had approved by USED an equity plan. Strategies include:</p> <ul style="list-style-type: none"> ! Improve educator preparation by increasing the amount of training for pre-service teachers; revising and aligning teacher preparation and accreditation programs; revising the Kentucky Teacher Internship Program (KTIP) to align with the state's Professional Growth and Effectiveness System (PGES) for educators; and work with institutions of higher education to align current education practices. ! Improve recruitment, hiring and placement of educators by improving district recruitment practices; evaluating statutes, policies and procedures that may contribute to inequitable hiring practices; reviewing local teacher and student assignment policies; increasing

	<p>teacher pay for recruitment in high need schools; and increasing the pool of teachers equipped to work with diverse learners</p> <ul style="list-style-type: none"> ! Increase ongoing teacher and principal development by strategically allocating federal funds and reviewing alternative funding streams; developing induction and mentoring programs; implementing a coherent statewide system for professional learning that is aligned with PGES and implemented as a continuous improvement process; and engaging teachers in professional learning experiences that would most impact student achievement ! Improve educator retention by providing educator career pathway opportunities and improving a collaborative culture through effective school leadership.
Kentucky Rising	This Kentucky initiative is underway to ensure students are college/career-ready and globally competitive.
Commissioners Raising Achievement and Closing Gaps Report	These guidelines identify 10 issues that need to be addressed in raising achievement and closing gaps in Kentucky.
Education Trust Report	This report, presented to the Kentucky Board of Education in October 2014, describes the issues with Kentucky gaps.
My Brothers' Keeper initiative	This is a national initiative, implemented in large districts, in which Kentucky is participating.
Our Responsibility, Our Promise	This publication, by the Council on Chief State School Officers (CCSSO), describes state responsibilities.

Step 2: Identify the key core work processes

To define the key core work processes, the definition of work systems as outlined in the *Baldrige Criteria for Performance Excellence Education 2015* (p. 54) was used.

WORK SYSTEMS. *How your organization's work is accomplished, consisting of the internal work processes and external resources you need to develop and produce programs and services, deliver them to your students and other customers, and succeed in your market. Work systems involve your workforce, your key suppliers and partners, your contractors, your collaborators, and other components of the supply chain needed to produce and deliver your programs and services and to carry out your business and support processes. Decisions about work systems are strategic. These decisions involve protecting and capitalizing on core competencies (those things your organization does best) and deciding what should be procured from or produced outside of your organization in order to be efficient and sustainable in your market.*

Key Core Work Processes at KDE

Key Core Work Process and Questions Addressed	Alignment with Kentucky Board of Education Delivery Target
Design and deploy standards. (What should students know and be able to do?)	College and Career Readiness Pathways
Design and deliver instruction. (How will they learn it?)	Integrated Methods for Learning
Design and deliver assessment literacy. (How will we know they have learned it?)	Novice Reduction
Review, analyze and apply data results. (How will we know they have learned it?)	While not a delivery target, this is an essential component for deployment and improvement.
Design, align and deliver support processes with a sub-group focus. (What will we do if they know it already, don't know it or need other support?)	Learning Systems
Establish a learning culture and environment. (What will we do if they know it already, don't know it or need other support?)	Learning Systems
Align community support partners. (How do we engage stakeholders?)	While not a delivery target, this is an essential component for deployment and improvement.
Monitor implementation of legal requirements. (compliance)	While not a delivery target, this will ensure alignment with supplier/ stakeholder requirements.

Step 3: Analyze Status of Current Key Core Work Processes

Experts from each of the key core work processes met to determine how their system is structured. These teams became cross-functional based on job responsibilities aligned with other offices. Beginning with the first six teams, the following were completed:

- A seven-category linkage organizational chart that determines the following:

- Who is leader of the system (who hold the mission, vision and values)?
- Who are the stakeholders and what are their requirements?
- What are the strategic objectives of your system?
- What are the work strands, components, programs and/or strategies in your office that, if it they are truly efficient and effective, would support novice reduction?
- Who is the workforce and what are their requirements?
- How do you manage knowledge and information?
- What are the formative and summative results of your work strands, components, programs, and/or strategies?
 - A matrix to prioritize the most important strands, components, programs and/or strategies to improve.
 - A Plan Do Study Act (PDSA) cycle was conducted for the improvement of the identified strand, component, program and/or strategy to support the spread, scale or clarity of

process and resources within the agency. This also provided districts/schools with a sample/example for planning action based on continuous improvement.

Strands/components/programs/strategies	Why it's crucial:
Literacy Design Collaborative (LDC)	Literacy Design Collaborative (LDC) is an instructional framework to support the implementation of Kentucky's Academic Standards and a means for eliciting evidence of teacher effectiveness in planning, instructing and reflecting. The instructional cycle includes teacher collaboration in designing instruction, analyzing student work and adjusting instructional practice based upon data and lessons learned about students and their needs. LDC empowers teachers to build students' literacy skills in science, history, literature and other important academic content through meaningful reading, writing and other learning experiences. The building block of LDC is the module, a two- to four-week instructional cycle based upon a worthy, and compelling and rigorous student task. Early data from Kentucky middle schools shows promise for African American students as well as all other students when the LDC is implemented with fidelity.
Math Design Collaborative (MDC)	The Math Design Collaborative (MDC) is an instructional framework for supporting the implementation of Kentucky's Academic Standards and a means for eliciting evidence of teacher effectiveness in planning, instructing and reflecting. The instructional cycle includes teacher collaboration in designing instruction, analyzing student work and adjusting instructional practice based upon data and lessons learned about students and their needs. Although MDC specifically targets the math standards, mathematical literacy developed through MDC extends into science, technology, engineering
and other content areas. MDC offers assessment that expose students' mathematical knowledge, reasoning and misconceptions, helping teachers guide them toward improvement and monitor progress. MDC tools are designed to deepen	students' understanding of mathematical concepts and develop their ability to apply that knowledge to nonroutine problems. MDC supports concept development and problem solving using two structures: Classroom Challenges and Formative Assessment Lessons (FALs).

Co-Teaching for Gap Closure (CT4GC)

Co-Teaching for Gap Closure (CT4GC) is a professional learning initiative developed by the Kentucky Department of Education (KDE) in 2012 to help close the achievement gap in Kentucky. It is comprised of four components: co-teaching best practices; continuous classroom improvement; student supports; and English/language arts/ or mathematics instructional strategies. Sustainability is built through a system of coaching from the state level down to the classroom level. The coaching network consists of a state core team, regional educational co-operative consultants, and district/school level internal coaches. The coaching network strengthens capacity building through monthly Professional Learning Communities (PLCs) at each level: state, regional, district/school. CT4GC is a KDE initiative with partners from the University of Kentucky (UK) Human Development Institute (HDI) and the University of Louisville (U of L) Academic and Behavioral Response to Intervention (ABRI) project.

Objectives of co-teaching for gap closure (CT4GC) To increase:

- student engagement
- student achievement
- a teacher's ability to implement with fidelity

To implement four strategic components:

- continuous classroom improvement (CCI)
- co-teaching
- evidence-based instructional strategies focused on reading/language arts and mathematics to support all content areas
- student supports to remove other barriers to learning

The four components are developed around research-based practices.

	<p>Co-teaching is supported through research conducted by Marilyn Friend.</p> <p>Student supports are based on Kentucky’s Individual Learning Plan (ILP), Continuous Instructional Improvement Technology System (CIITS), and Professional Growth and Effectiveness System (PGES) Student Voice Survey to remove barriers to learning for individual students.</p> <p>ELA/mathematics strategies use work from Robert Marzano’s <i>High Yield Instructional Strategies</i>; Stephanie Harvey’s <i>Strategies that Work</i>; ABRI; and resources available through CIITS related to Kentucky Academic Standards (KAS).</p> <p>Continuous classroom improvement is based on Baldrige Criteria for Excellence.</p> <p>Coaching practices are supported by Jim Knight’s work in instructional coaching.</p> <p>The infrastructure of the initiative was built using Dean Fixsen’s and Karen Blasé’s work around implementation science.</p> <p>Training modules were developed using Carol Trivette’s research around professional adult learning systems (PALS).</p> <p>There are three cohorts. Cohort 1 and Cohort 2 were implemented in 2013-14 and Cohort 3 was implemented in school year 2014-15.</p> <p>CT4GC is currently implemented in 30 districts where there are 84 teaching teams in cohorts 1, 2, and 3. This initiative serves approximately 2,100 students.</p> <p>We also have implemented scale-up for the 2015-16 school year. The scale-up will allow existing cohort member schools to add teams in their buildings. The cohorts were chosen based on a set of criteria including district/school performance and ability to build capacity and sustainability of best practices contained in the initiative.</p> <p>Data collection is designed to collect federally reported data to the State Personnel Development Grant (SPDG) and to support closing the achievement gap in the classrooms where</p>
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	<p>the initiative is implemented. Our data collection tools are developed through Harvard Delivery Institute. The data consist of PLC (Professional Learning Community) data reports; classroom level needs assessments to report existing programs/initiatives in the classroom; customer satisfaction surveys; and training evaluation data.</p> <p>Kentucky data on this initiative for students with disabilities is very promising.</p>
<p>Culturally Responsive Climate (Instruction)</p>	<p>According to Dr. Matthew Lynch (2011), culturally responsive instruction is, “a student-centered approach to teaching in which the students' unique cultural strengths are identified and nurtured to promote student achievement and a sense of well-being about the student's cultural place in the world.” This work includes providing support to schools to understand what it is, how to recognize it and how to embed it in day-today classroom lessons and the learning environment.</p>
<p>Review, Analyze, and Use Data</p>	<p>A significant number of requests come to KDE field staff about data analysis. Having a uniform way of reviewing the online School Report Card and knowing what the data say will assist districts and schools in determining how to set goals for the improvement of novice students’ performance.</p>
<p>Assessment Literacy for Principals</p>	<p>James Popham, in a Harvard Education Publishing Blog from 2009, states, “Assessment literacy is present when a person possesses the assessment-related knowledge and skills needed for the competent performance of that person’s responsibilities.”</p> <p>Since 2008, the KDE has supported the development of assessment literacy among district leadership teams (including teacher, school and district leaders). <i>Classroom Assessment for Student Learning: Using it Right, Doing it Well</i> (CASL) and <i>Characteristics of Highly Effective Teaching and Learning</i> (CHETL) have served as the touchstones for developing key capacities in assessment literacy. The key issue that has emerged is, how does a principal lead his/her school to effectively and consistently implement assessment literate processes – both formative processes and summative assessments – using data and information available to actually improve instruction?</p>

Systems for Continuous Improvement	When a district or school reviews the big picture of novice performance across the system, how do the leaders know how to prioritize, communicate, budget and continuously improve instead of starting over with each child, each year?
	Continuous improvement uses data to improve work processes to support student learning. There are some key tools that can be taught and used to do this (Plus/Delta, root cause, priority matrix, linkage, PDSA, data charts, data questions and 30-60-90 day planning, to name a few). KDE anticipates partnership groups will provide specific training in these areas.
Bullying Prevention	A safe environment is a priority.
Positive Behavior Intervention Systems (PBIS)	<p>More than 500 schools in Kentucky have been trained in PBIS. When implemented with fidelity and monitored, the data is excellent on improving school climate.</p> <p>This is an area where partnerships will be crucial to ensuring deployment with fidelity across the Commonwealth.</p>
Academic Support Continuum	Response to Intervention (RtI) is non-negotiable. Every school must have Tier 1, 2, 3 intervention systems for all students. Clearly defined interventions with goals for each student and just-in-time interventions provide support for all students, but especially those performing at the novice level. Learning is a progression. The RtI and Kentucky System of Interventions will make a difference when supported. An intense review of what works will assist schools and districts in setting funding priorities for these purposes.
Behavior Support Continuum	Behavior is about the learning climate of the school. Just as there is a continuum for academic needs there also is a behavior continuum. This strategy will not provide or suggest a program, but will help a school look at its current continuum of services for students. Students and teachers must feel safe for learning to occur.

<p>Teacher and Principal Professional Growth Systems</p>	<p>As the next iteration of the accountability model for Kentucky schools and districts focuses on novice reduction, how can the Teacher and Principal Professional Growth and Evaluation Systems (TPGES and PPGES) support educators to ensure growth goals and school activities move beyond compliance to effective strategies that work?</p> <p>This alignment is essential for educators to continue to understand that all of these are pieces to the learning puzzle that all fit together. Clearly this is where all of the initiatives come together. Coordinated work with partners for understanding and targeted support continues to develop.</p>
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Step 4: Implement the PDSA at the KDE Level

Deliverables for this step include:

- An elevator speech about each selected strand, component, program and strategy to be shared with the Kentucky Department of Education and the Kentucky Board of Education to ensure understanding and alignment of how all roles in the agency support novice reduction
- The development of a webpage for the strands, components, programs and strategies that were chosen in order to have all relevant resources located in a single place along with contact information for the strategy. The webpage will include but is not limited to:
 - title
 - a graphic applicable to the category in which the item fits
 - page description
 - main content including a diagnostic tool districts/schools can use to determine if this is a good strategy for them or if they are moving in the right direction
 - an example 30/60/90 day plan for implementation
 - self-help resources
 - contact at the agency

Step 5: Development of a 30-60-90 day plan

The 30-60-90 day plans are developed as an example of how a district or school might implement the strand, program, component and/or strategy. These will be posted on the website between July and September.

Step 6: Connect with partners

Partners will be consulted to provide feedback. Partners include the Kentucky educational groups, cooperatives and already aligned groups.

Step 7: Launch draft website

The new website and the vision will be launched in September.

Step 8: Coordinate pilot into a few districts to monitor

KDE has hired a coordinator and five regional novice reduction coaches to provide just-in-time support. From September through December, pilots will operate to generate feedback on how to improve KDE's novice reduction coaching processes. All districts will be able to access the website during the pilot period. Based on what is learned, an updated website will roll out in January.

Step 9: Make changes as necessary for quality implementation statewide

Step 10: Continue Plan, Do, Study, Act (PDSA)

Continue deploying the PDSA, monitor for feedback and align with legal requirements.

The Deployment

- There is an overall PDSA for the development and deployment work.
- Each key core work process team has a PDSA for deployment of their specific strategy
 - July: Introduce to partners for feedback
- September: Novice Reduction Plan was rolled out to 600 plus educators at the Continuous Improvement Summit. Currently seven districts are serving in the pilot.
- October 2nd the Novice Reduction Webpage went live. Continuing to present information to Coops and Districts.
 - July-December: Pilot in five districts; roll out website in September; revise in January 2016: Services available to all districts throughout this period.
- The Novice Reduction work has been connected to the work of the Educational Recovery Staff and the Hub Schools.
- November 17th-Over 1,300 educators across the state have be trained in the Novice Reduction process. We are on track to train 2,000 Kentucky educators by December 31, 2015.
- Regional trainings are occurring across the state during November and December and they are at their capacity.

The Appendices

Two appendices are included to provide context with alignment to CHETL and PGES and to present the overall theory of action of novice reduction in Kentucky.

Appendix A

A systems' check to answer the question: Where does intervention for novice reduction fit into what Kentucky already knows about the *Characteristics of Highly Effective Teaching and Learning* that are common to all content areas and the *Kentucky Framework for Teaching* used in the Professional Growth and Effectiveness System (PGES)?

Characteristics of Highly Effective Teaching and Learning (CHETL)	Novice Reduction Work Process Alignment	PGES Alignment <i>Kentucky Framework for Teaching (KfT)</i>	Leverage process/component system for novice reduction
Instructional rigor and student engagement	Instruction; Environment and Support	Domain 1: Planning and Preparation Domain 3: Instruction	Culturally Responsive Instruction; Literacy Design Collaborative (LDC); Math Design Collaborative (MDC); Co-Teaching For Gap Closure (CT4GC); Academic Continuum; Advising
Teacher instructs the complex processes, concepts and principles contained in state and national standards using differentiated strategies that make instruction accessible to all students.	Instruction; Environment and Support	1A-Knowledge of Content and Pedagogy 1E-Designing Coherent Instruction	CT4GC; LDC; MDC; Standards and Curriculum; Continuum for Success; Advising; Continuous Improvement
Teacher scaffolds instruction to help students reason and develop problem-solving strategies.	Instruction; Environment and Support	1E-Designing Coherent Instruction 3A-Communication with Students	CT4GC; LDC; MDC; Academic Continuum
Teacher orchestrates effective classroom discussions, questioning, and learning tasks that promote higher-order thinking skills.	Instruction; Environment and Support	3B-Using Questioning and Discussion Techniques	CT4GC; LDC; MDC; Academic Continuum

Teacher provides meaningful learning opportunities for students.	Instruction; Environment and Support	1E-Designing Coherent Instruction	Assessment Literacy; Academic Continuum; Culturally Responsive Instruction
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Teacher challenges students to think deeply about problems and encourages/models a variety of approaches to a solution.	Instruction; Environment and Support	1E-Designing Coherent Instruction 3C-Engaging Students in Learning	CT4GC; LDC; MDC; Academic Continuum; Culturally Responsive Instruction; Continuous Improvement
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Teacher integrates a variety of learning resources with classroom instruction to increase learning options.	Instruction; Environment and Support	1B-Demonstrating Knowledge of Students 1D-Demonstrating Knowledge of Resources	CT4GC; LDC; MDC; Academic Continuum; Culturally Responsive Instruction; Continuous Improvement
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Teacher structures and facilitates ongoing formal and informal discussions based on a shared understanding of rules and discourse.	Instruction; Environment and Support	3A-Communicating with Students 3B-Using Questioning and Discussion Techniques	Behavior Continuum; Academic Continuum; Continuous Improvement; Assessment Literacy
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Teacher integrates the application of inquiry skills into learning experiences	Instruction; Environment and Support	3C-Engaging Students in the Learning	CT4GC; LDC; MDC; Academic Continuum; Culturally Responsive Instruction; Continuous Improvement
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Teacher clarifies and shares with students learning intentions/targets and criteria for success.	Instruction; Environment and Support	1C-Selecting Instructional Outcomes 3A-Communicating with Students	Continuum For Success; Academic Continuum; Behavior Continuum; Continuous Improvement
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Student articulates and understands learning intentions/targets and criteria for success.	Instruction; Environment and Support	Student Voice	Continuum For Success; Academic Continuum; Behavior Continuum; CT4GC; Continuous Improvement
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Student reads with understanding a variety of texts.	Instruction; Environment and Support	Student Voice	Standards, LDC
Student applies and refines inquiry skills.	Instruction; Environment and Support	Student Voice	LDC; MDC; Assessment Literacy; Continuous Improvement; Culturally Responsive Instruction

Instructional Relevance	Instruction; Environment and Support; Curriculum and Standards; Continuous Improvement; Assessment	Domain 1: Planning and Preparation Domain 2: Classroom Environment Domain 4: Professional Responsibilities	Culturally Responsive Instruction; LDC; MDC; CT4GC; Deploying Standards; Career Pathways; Continuum for Success; Academic Continuum; Advising; Data Analysis; Continuous Improvement
Teacher designs learning opportunities that allow students to participate in empowering activities in which they understand that learning is a process and mistakes are a natural part of the learning.	Instruction; Environment and Support Curriculum and Standards Continuous improvement and assessment	1E--Designing Coherent Instruction 2B--Establishing a Culture for Learning	LDC; MDC, Culturally Responsive Instruction, CT4GC
Teacher links concepts and key ideas to students' prior experiences and understandings, uses multiple representations, examples and explanations.	Instruction; Environment and Support Curriculum and Standards Continuous improvement and assessment	1B--Demonstrating Knowledge of Students	Standards and Curriculum

Teacher incorporates student experiences, interests and real life situations in instruction.	Instruction; Environment and Support Curriculum and Standards Continuous improvement and assessment	1B--Demonstrating Knowledge of Students	Standards and Curriculum; Culturally Responsive Instruction
Teacher selects and utilizes a variety of technology that support student learning.	Instruction; Environment and Support; Standards and Curriculum; Continuous Improvement; Assessment	1D--Demonstrating Knowledge of Resources 1E--Designing Coherent Instruction	Standards and Curriculum; Continuum for Success

Teacher effectively incorporates 21st Century Learning Skills that prepare students to meet future challenges.	Instruction; Environment and Support; Curriculum and Standards; Continuous Improvement; Assessment	1E--Designing Coherent Instruction	Standards and Curriculum, Continuum for Success
Teacher works with other teachers to make connections between and among disciplines.	Instruction; Environment and Support; Standards and Curriculum; Continuous Improvement; Assessment	4D--Participating in a Professional Community 4E--Growing and Developing Professionally	Data Review, Analysis and Use; Continuous Improvement
Teacher makes lesson connections to community, society and current events.	Instruction; Environment and Support; Standards and Curriculum; Continuous Improvement; Assessment	1D--Demonstrating Knowledge of Resources	Standards and Curriculum; Culturally Responsive Instruction; Advising

Student poses and responds to meaningful questions.	Instruction; Environment and Support; Standards and Curriculum; Continuous Improvement; Assessment	Student Voice and engagement	Culturally Responsive Instruction; Standards and Curriculum; LDC; MDC; CT4GC
Student uses appropriate tools and techniques to gather, analyze and interpret information from quantitative and qualitative evidence.	Instruction; Environment and Support; Standards and Curriculum; Continuous Improvement; Assessment	Student Voice and engagement	Standards and Curriculum; Assessment Literacy; Tiered Academic Interventions; Continuous Improvement

Student develops descriptions, explanation, predictions and models using evidence.	Instruction; Environment and Support; Standards and Curriculum; Continuous Improvement; Assessment	Student Voice and engagement	Standards and Curriculum; Assessment Literacy; Tiered Academic Interventions; Continuous Improvement
Student works collaboratively to address complex, authentic problems, which require innovative approaches to solve.	Instruction; Environment and Support; Standards and Curriculum; Continuous Improvement; Assessment	Student Voice and engagement	Standards and Curriculum; Assessment Literacy; Tiered Academic Interventions; Continuous Improvement; LDC; MDC; CT4GC
Student communicates knowledge and understanding in a variety of real-world forms.	Instruction; Environment and Support; Standards and Curriculum; Continuous Improvement; Assessment	Student Voice and engagement	Standards and Curriculum; Assessment Literacy; Academic Continuum; Continuous Improvement; LDC; MDC; CT4GC

Student communicates knowledge and understanding for a variety of purposes.	Instruction; Environment and Support; Standards and Curriculum; Continuous Improvement; Assessment	Student Voice and engagement	Standards and Curriculum; Assessment Literacy; Academic Continuum; Continuous Improvement; LDC; MDC; CT4GC
Knowledge of Content	Standards and Curriculum; Instruction; Environment and Support	Domain 1: Planning and Preparation Domain 2: Classroom Environment Domain 3: Instruction Domain 4:	Deploying Standards; Career Pathways; Continuum For Success; Culturally Responsive Instruction; LDC; MDC; CT4GC; Academic Continuum; Advising

		Professional Responsibilities	
Teacher demonstrates an understanding and in depth knowledge of content and maintains an ability to convey this content to students.	Standards and Curriculum; Instruction; Environment and Support	1A-Demonstrating Knowledge of Content and Pedagogy 3A-Communicating with Students	Standards and Curriculum; LDC; MDC; CT4C; Academic Continuum
Teacher maintains on going knowledge and awareness of current content developments.	Standards and Curriculum; Instruction; Environment and Support	1A-Demonstrating Knowledge of Content and Pedagogy 4E-Growing and Developing Professionally	Standards and Curriculum; Continuous Improvement

Teacher designs and implements standards based courses/lessons/units using state and national standards.	Standards and Curriculum; Instruction; Environment and Support	1E-Designing Coherent Instruction	Standards and Curriculum; Continuous Improvement; Culturally Responsive Instruction
Teacher uses and promotes the understanding of appropriate content vocabulary.	Standards and Curriculum; Instruction; Environment and Support	1A-Demonstrating Knowledge of Content and Pedagogy	Standards and Curriculum; Continuous Improvement; Culturally Responsive Instruction
Teacher provides essential supports for students who are struggling with the content.	Standards and Curriculum; Instruction; Environment and Support	3C-Engaging Students in the Learning 3E-Demonstrating Flexibility and Responsiveness	Academic Continuum; Assessment Literacy; Advising; Continuous Improvement; Culturally Responsive Instruction, Behavior Continuum
Teacher accesses a rich repertoire of instructional practices, strategies, resources and applies them appropriately.	Standards and Curriculum; Instruction; Environment and Support	1A-Demonstrating Knowledge of Content and Pedagogy 1E-Designing Coherent Instruction	Academic Continuum; Assessment Literacy; Advising; Continuous Improvement; Culturally Responsive Instruction; Behavior Continuum

Student demonstrates growth in content knowledge.	Standards and Curriculum; Instruction; Environment and Support	Student Voice and engagement	Academic Continuum; Assessment Literacy; Advising; Continuous Improvement; Culturally Responsive Instruction; Behavior Continuum; Standards and Curriculum
Student uses and seeks to expand appropriate content vocabulary.	Standards and Curriculum; Instruction; Environment and Support	Student Voice and engagement	Academic Continuum; Assessment Literacy; Advising; Continuous Improvement; Culturally Responsive Instruction; Behavior Continuum; Standards and Curriculum

Student connects ideas across content areas.	Standards and Curriculum; Instruction; Environment and Support	Student Voice and engagement	Academic Continuum; Assessment Literacy; Advising, Continuous Improvement; Culturally Responsive Instruction; Behavior Continuum; Standards and Curriculum
Student uses ideas in realistic problem situations.	Standards and Curriculum; Instruction; Environment and Support	Student Voice and engagement	Continuum for Student Success; Standards and Curriculum
Learning Climate	Instruction; Environment and Support	Domain 1: Planning and Preparation Domain 2: Classroom Environment Domain 3: Instruction	Academic Continuum; Advising; Bullying Prevention; Positive Behavioral Interventions and Supports (PBIS); Behavior Continuum; Culturally Responsive Instruction; LDC; MDC; CT4GC
Teacher creates learning environments where students are active participants as individuals and as members of collaborative groups.	Instruction; Environment and Support	2B--Establishing a Culture for Learning	Academic Continuum; Advising; Bullying Prevention; PBIS; Behavior Continuum; Culturally Responsive Instruction
Teacher motivates students and nurtures their desire to learn in a safe, healthy and supportive environment which develops compassion and mutual respect.	Instruction; Environment and Support	2A--Creating an Environment of Respect and Rapport 2E--Organizing Physical Space	Academic Continuum; Advising; Bullying Prevention; PBIS; Behavior Continuum; Culturally Responsive Instruction

Teacher cultivates cross cultural understandings and the value of diversity	Instruction; Environment and Support	1B--Demonstrating Knowledge of Students 2A--Creating an Environment of Respect and Rapport	Culturally Responsive Instruction; Continuous Improvement
Teacher encourages students to accept responsibility for their own learning and accommodates the diverse learning needs of all students.	Instruction; Environment and Support	1C--Selecting Instructional Outcomes 2B--Establishing a Culture for Learning	Academic Continuum; Advising; Bullying Prevention; PBIS; Behavior Continuum; Culturally Responsive Instruction; Continuous Improvement
Teacher displays effective and efficient classroom management that includes classroom routines that promote comfort, order and appropriate student behaviors.	Instruction; Environment and Support	2C--Managing Classroom Procedures 2D--Managing Student Behavior	Academic Continuum; Advising; Bullying Prevention; PBIS; Behavior Continuum; Culturally Responsive Instruction
Teacher provides student equitable access to technology, space tools and time.	Instruction; Environment and Support	1D--Demonstrating Knowledge of Resources 2E--Organizing Physical Space	Academic And Behavior Continuum, LDC; MDC; CT4GC
Teacher effectively allocates times for students to engage in hands on experiences, discuss and process content, and make meaningful connections.	Instruction; Environment and Support	2C--Managing Classroom Procedures 3C--Engaging Students in the Learning	Academic Continuum; Advising; Bullying Prevention; PBIS; Behavior Continuum; Culturally Responsive Instruction
Teacher designs lessons that allow students to participate in empowering	Instruction; Environment and Support	1E--Designing Coherent Instruction	Academic Continuum; Advising; Bullying Prevention; PBIS;

activities in which they understand that learning is a process and mistakes are a natural part of learning.		2B--Establishing a Culture for Learning	Behavior Continuum; Culturally Responsive Instruction
Teacher creates an environment where student work is valued, appreciated and used as a learning tool.	Instruction; Environment and Support	2B--Establishing a Culture for Learning 3D--Using Assessment in Instruction	Academic Continuum, Advising, Bullying Prevention, PBIS, Behavior Continuum, Culturally Responsive,
Student accepts responsibility for his/her own learning	Instruction; Environment and Support	Student Voice and engagement	Academic Continuum; Advising; Bullying Prevention; PBIS; Behavior Continuum; Culturally Responsive Instruction
Student actively participates and is authentically engaged.	Instruction; Environment and Support	Student Voice and engagement	Academic Continuum; Advising; Bullying Prevention; PBIS; Behavior Continuum; Culturally Responsive Instruction
Student collaborates/teams with other students	Instruction; Environment and Support	Student Voice and engagement	Academic Continuum; Advising; Bullying Prevention; PBIS; Behavior Continuum; Culturally Responsive Instruction
Student exhibits a sense of accomplishment and confidence	Instruction; Environment and Support	Student Voice and engagement	Academic Continuum, Advising, Bullying Prevention, PBIS, Behavior Continuum, Culturally Responsive,
Student takes educational risks in class.	Instruction; Environment and Support	Student Voice and engagement	Academic Continuum; Advising; Bullying Prevention; PBIS; Behavior Continuum; Culturally Responsive Instruction

Student practices and engages in safe, responsible and ethical use of technology.	Instruction; Environment and Support	Student Voice and engagement	Academic Continuum; Advising; Bullying Prevention; PBIS; Behavior Continuum;
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			Culturally Responsive Instruction; Continuous Improvement
Classroom Assessment and Reflection	Assessment Literacy; Data, Analysis and Use	Domain 1: Planning and Preparation Domain 2: Classroom Environment Domain 3: Instruction Domain 4: Professional Responsibilities	Continuous Improvement; Assessment Literacy
Teacher uses multiple methods to systematically gather data about student understanding and ability.	Assessment Literacy; Data, Analysis and Use	1F--Designing Student Assessment 3D--Using Assessment in Instruction 4A--Reflecting on Teaching	Assessment Literacy; Data Review, Analysis and Use; Continuous Improvement
Teacher uses student work/data, observations of instruction, assignments and interactions with colleagues to reflect on and improve teaching practice.	Assessment Literacy; Data, Analysis and Use	1F--Designing Student Assessment 3D--Using Assessment in Instruction 4A--Reflecting on Teaching	Assessment Literacy; Data Review, Analysis and Use; Continuous Improvement

Teacher revises instructional strategies based upon student achievement data.	Assessment Literacy; Data, Analysis and Use	1F--Designing Student Assessments 3D--Using Assessment in Instruction 4A--Reflecting on Teaching	Assessment Literacy; Data Review, Analysis and Use; Continuous Improvement; Academic Continuum
Teacher uncovers students' prior understanding of the concepts to be addressed and addresses students'	Assessment Literacy; Data, Analysis and Use	1F--Designing Student Assessments 3D--Using Assessment in Instruction	Assessment Literacy; Data Review, Analysis and Use; Continuous Improvement; Academic Continuum

misconceptions/incomplete conceptions.			
Teacher co-develops scoring guides/rubrics with students and provides adequate modeling to make clear the expectations for quality performance.	Assessment Literacy; Data, Analysis and Use	1C--Selecting Instructional Outcomes 3D--Using Assessment in Instruction	Assessment Literacy; Data Review, Analysis and Use; Continuous Improvement; Academic Continuum
Teacher guides students to apply rubrics to assess their performance and identify improvement strategies.	Assessment Literacy; Data, Analysis and Use	2B--Establishing a Culture for Learning 3D--Using Assessment in Instruction	Assessment Literacy; Data Review, Analysis and Use; Continuous Improvement; Academic Continuum
Teacher provides regular timely feedback to students and parents that moves learners forward.	Assessment Literacy; Data, Analysis and Use	3D--Using Assessment in Instruction 4C--Communicating with Families	Assessment Literacy; Data Review, Analysis and Use; Continuous Improvement; Academic Continuum
Teacher allows students to use feedback to improve their work before a grade is assigned.	Assessment Literacy; Data, Analysis and Use	3D--Using Assessment in Instruction 3E--Demonstrating Flexibility and Responsibility	Assessment Literacy; Data Review, Analysis and Use; Continuous Improvement; Academic Continuum

Teacher facilitates students in self- and peerassessments.	Assessment Literacy; Data, Analysis and Use	2B--Establishing a Culture for Learning 3D--Using Assessment in Instruction	Assessment Literacy; Data Review, Analysis and Use; Continuous Improvement; Academic Continuum
Teacher reflects on instruction and makes adjustments as student learning occurs.	Assessment Literacy. Data, Analysis and Use	3D--Using Assessment in Instruction 3E--Demonstrating Flexibility and Responsibility 4A--Reflecting on Instruction	Assessment Literacy; Data Review, Analysis and Use; Continuous Improvement; Academic Continuum
Student recognizes what proficient work looks like and determines steps necessary for improving his/her work.	Assessment Literacy; Data, Analysis and Use	Student Voice and engagement	Assessment Literacy; Data Review, Analysis and Use; Continuous Improvement; Academic Continuum
Teacher and student monitors progress toward reaching learning targets.	Assessment Literacy; Data, Analysis and Use	Student Voice and engagement	Assessment Literacy; Data Review, Analysis and Use; Continuous Improvement; Academic Continuum
Student develops and/or uses scoring guides periodically to assess his/her own work or that of peers.	Assessment Literacy; Data, Analysis and Use	Student Voice and engagement	Assessment Literacy; Data Review, Analysis and Use; Continuous Improvement; Academic Continuum
Student uses teacher and peer feedback to improve his/her work.	Assessment Literacy; Data, Analysis and Use	Student Voice and engagement	Assessment Literacy; Data Review, Analysis and Use; Continuous Improvement; Academic Continuum
Both teacher and students reflect on work and make adjustments as learning occurs.	Assessment Literacy; Data, Analysis and Use	Student Voice and engagement	Assessment Literacy; Data Review, Analysis and Use; Continuous Improvement; Academic Continuum

Appendix B

Theory of Action

- If KDE uses as a foundation the *Characteristics of Highly Effective Teaching and Learning*, and
- If KDE aligns key core novice reduction work systems with the Teacher and Principal Professional Growth and Effectiveness Systems, and
- If KDE identifies the desired outcomes for students performing at the novice level, and
- IF KDE identifies the key core work processes at KDE that contribute to continuous improvement toward the desired outcomes, and
- IF KDE clearly defines the component parts of the management system behind each key core work process, and
- IF KDE prioritizes the operations within the key core work processes, and
- IF KDE conducts a PDSA for continuous improvement of the operational component (activity/program/strategy) over time, and
- IF KDE clearly defines the research base and elements necessary for ensuring proper support for the identified intervention components, and
- IF KDE develops a communications and delivery plan for the components or interventions to include:
 - professional learning following Professional Learning Guidelines including measuring and monitoring implementation
 - a webpage specific to the intervention identified
 - clear, quality communication products required by the plan and approved by the KDE Division of Communications
 - assistance in identifying and guiding direction for necessary resources for various stakeholders to be successful
 - partners as a part of the delivery mechanism (as appropriate)
 - clearly defined specific measures both within the process as well as aligned results, and
- IF vital partners (cooperatives, districts, schools, classrooms, non-profit and for-profit organizations) assist with using the KDE-identified processes and interventions as outlined,

RESULTS

- **THEN** the numbers of students scoring at the novice level, most notably those in gap groups, will decline continuously through establishment of high performing, effective systems of delivery and support.

White paper compiled by Dr. Kelly Foster, Associate Commissioner, KDE, November, 2017.

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