COORDINATED CURRICULUM IN SCHOOL DISTRICT SYSTEMS

ACT 173 TECHNICAL GUIDANCE

Issued October 14, 2020



Introduction

This document is designed to provide additional technical assistance and guidance around curriculum coordination. This is the third of a series of four supporting guidance documents the Agency of Education (AOE) has developed to provide supplemental information to the Education Quality Standards (EQS) rules and practices as they pertain to the change in practices necessary to implement Act 173 of 2018. In a document entitled Developing Systems to Support the Success of All Students released on Aug. 26, 2019, the AOE identified four areas of focused activity for school districts and supervisory unions (SU/SDs) under Act 173:

- Educational Support Teams (ESTs);
- Local Comprehensive Assessment System;
- Coordinated Curriculum; and
- Needs-based Professional Development.

The AOE will be publishing supplemental guidance documents for each of these focus areas regularly through 2020. When taken together, the goal of these guidance documents is to build coherence among educational stakeholders about the work involved to successfully implement Act 173 . As a result of COVID-19 and school closure, collective coherence and focus will be essential as we shift our work to identifying, supporting and scaling best practices across an educational system that needs to be responsive and adaptive to a constantly changing world.

How to Read Act 173 Technical Guidance Documents

All supporting technical guidance documents in this series follow a similar structure. Section one will contain a definition of the focus area so there is clarity about how it is situated in the current regulatory and practice context. Section two will describe why the focus area is a major systems lever for the successful implementation of Act 173. Systems lever is defined as an organizational structure that can be used to quickly bring about the alignment of instructional support activities to enhance the effectiveness, availability, and equity of services provided to students who require additional supports among all schools in a district. Section three will describe how to implement the focus area in the context of a school district system. This is an important consideration, since SU/SD policies emanating from the state have pointed to centralizing key instructional systems at the SU/SD level. Section four will outline how the AOE plans to provide leadership, support, and oversight relative to the focus area in the coming months. Additionally, a Resources section will be appended to these guidance documents to provide an easy reference to related technical concepts.

It is important to consider when reading these documents how they intersect, support, and build from one another. For instance, an effective local comprehensive assessment system (LCAS) will inform the development of a strong, standards-based coordinated curriculum. Both, in turn, will provide clear information to support needs-based professional learning. Whenever possible, we will seek to draw attention to these intersections for your consideration.

Act 173 Technical Guidance: Coordinated Curriculum in School District Systems (Revised: Oct. 14, 2020) VERMONT AGENCY OF EDUCATION

Section One: Coordinated Curriculum in the Context of Current Regulation and Practice

This section defines what is meant by a curriculum and a coordinated curriculum, and the basis for both in statute and rule.

What is Curriculum?

Although it is difficult to definitively answer this question in a manner that satisfies all education stakeholders, it is important to lay out the definition that informs this document. In a proficiency-based system, many educators equate "curriculum" with the standards from which the proficiencies are drafted. This is a common misconception. The Common Core State Standards (CCSS) for English Language Arts (ELA) remind us that "[t]he Standards define what all students are expected to know and be able to do, not how teachers should teach [...]The Standards must therefore be complemented by a well-developed, content-rich curriculum consistent with the expectations laid out in this document" (p. 6). Curriculum, therefore, is not just a scope-and-sequencing of skills and content, but how those skills and content lead to the desired outcome of proficiency, as well as how specific activities in the classroom or course align with the development of those skills and content. Accordingly, we define curriculum as the umbrella for the integration of the content, concepts, skills, and process by which students achieve proficiency. Simply put, curriculum is defined as the content and instructional activities within a course of study or school. Curricula should be clearly documented and readily available to students, families, board members and other educators.

What is a Coordinated Curriculum?

According to Robert Marzano (2003), a "guaranteed and viable curriculum is the #1 school-level factor impacting student achievement." To this end, it is important to have a common language that connects expectations and practices across all schools in a supervisory union or school district (SU/SD). A "guaranteed and viable" curriculum means that all students are afforded the time – based on student need — and access to learn rigorous content, no matter the **instructor**. In Vermont, this means that curricula should be standards-based, teachable, accessible to all students, and able to be assessed.

Coordinating curriculum helps students and educators to know where they are going as well as where they have been. Since there are many ways to achieve proficiency in a personalized system, the curriculum should support learning with flexibility in the form of varied educational experiences and high-quality instruction that leads to the same outcome. Additionally, the "ultimate aim of a curriculum is independent transfer; i.e., for students to be able to employ their learning, autonomously and thoughtfully, to varied complex situations, inside and outside of school" (McTighe & Wiggins, 2013, p. 10). Therefore, it is essential for skills and concepts to be revisited over time and reassessed as tasks become more complex and students more autonomous. Being clear about those skills and concepts across grade levels and buildings is what turns a curriculum into a coordinated curriculum.

Page 3 of 13

Act 173 Technical Guidance: Coordinated Curriculum in School District Systems



Why is a Coordinated Curriculum More Important Now Than Ever?

In 16 V.S.A. §261a(a)(1), and as stated in the Vermont Education Quality Standards, Vermont has defined coordinated curriculum as a written and delivered curriculum that is:

"aligned with the standards approved by the State Board of Education; coordinated across all grades to prepare students for graduation; coordinated across the supervisory union, including sending high schools and technical centers; informed by ongoing review of new research, changing learning opportunities, and updates to the standards approved by the State Board of Education; designed to enable all students to achieve the graduation requirements; and integrated with technology across all disciplines." (EQS 2120.6)

These words drafted nearly seven years ago seem especially pertinent today. Remote learning in the time of COVID-19 has shown that a coordinated curriculum can mean a safety net for both students and teachers. It can allow for a sharper vision around strengthening technology skills, implementing authentic learning and allowing for changes in structure or personnel to happen more smoothly. As we move forward into an even more rapidly changing education environment, it is important for curricula to reflect these goals and be designed in a way that makes curriculum more adaptable and allows for learning to take place both inside and outside of the classroom.

The AOE's theory of action is that if each SD/SU implements a coordinated curriculum then Vermont's SD/SUs will enhance the effectiveness, availability, and equity of services provided to all students.

What Does It Look Like When a Coordinated Curriculum Is Done Well?

When done well, a strong standards-based coordinated curriculum has the following six attributes.

Vertical and Horizontal Alignment

The most obvious component of a coordinated curriculum is vertical and horizontal alignment. Vertical alignment is achieved when the curriculum builds upon existing learning and extends or develops new learning across progressions in a manner that is research-based and deemed developmentally appropriate. Heidi Hayes Jacobs (2010) advocates for the use of curriculum mapping to facilitate this alignment across the SU/SD so that each educational experience builds on the one before it. According to Caroline Messenger with Competency Works (2013), "knowledge and skills [should be] presented as foundational and become the prior knowledge all students share" followed by "multiple opportunities to practice, refine, and grow skills by building on their knowledge base [...]. The end of a unit of study shouldn't be the last word on a subject or skill set. Future units should require the use of those skills to move forward in order to build understanding." This is demonstrated when a curriculum is vertically aligned. With horizontal alignment, students are exposed to the same standards, content, concepts, and skills across a grade level, regardless of classroom or context. Horizontal alignment, therefore,

VERMONT AGENCY OF EDUCATION

Act 173 Technical Guidance: Coordinated Curriculum in School District Systems (Revised: Oct. 14, 2020) supports equity and consistency of learning across the SU/SD. This consistency provides for more flexibility in when and where learning can take place, but also creates a safety net for students and teachers if the learning environment must change suddenly.

Backward Design

The term "curriculum" comes from the Latin for "course to be run," which suggests that it is not the end in itself but the means by which to get there. Jay McTighe and Grant Wiggins (2013) explain to educators that "the first step in translating the Common Core Standards into engaging and outcome-focused curriculum involves a careful reading of the documents in order to insure clarity about the end results and an understanding of how the pieces fit together" (p. 8). This is true of all <u>state-adopted standards</u>, including the <u>Common Core State Standards</u> (CCSS) for English and Mathematics; the Next Generation Science Standards (NGSS); the SHAPE America Physical Education Standards; the National Health Education Standards; the College, Career, and Civic Life (C3) Framework for Social Studies State Standards; the Vermont Early Learning Standards (VELS); the National Core Arts Standards (NCAS); the Jump\$tart Standards in K-12 Personal Finance Education; and the American Council on the Teaching of Foreign Languages (ACTFL) World-Readiness Standards for Learning Languages. Regardless of the content area, educational leaders and teachers need to be clear about the expected student outcomes of a learning progression. Following this, "curriculum and related instruction must be designed backward from an analysis of standards-based assessments; i.e., worthy performance tasks anchored by rigorous rubrics and annotated work samples" (McTighe & Wiggins, p. 15). With the end in mind, educators can work backward to identify learning progressions that develop the content knowledge and skills necessary for students to be able to meet specified proficiencies.

High-Quality Instruction and Assessment

Curriculum, instruction, and assessment are interwoven, both at the macro and micro levels. Curriculum maps can serve as a tool to zoom in and out of an overarching curriculum (Jacobs, 2010). At the macro (SU/SD) level, leadership can help develop long-term goals for curriculum. This is where a Localized Comprehensive Assessment System (LCAS) helps with aligning curriculum across an SU/SD and holding all learners accountable for meeting high expectations. Meanwhile smaller teams or individual educators can work on fine-tuning their curricula at the micro (classroom) level by creating meaningful learning opportunities and assessments. When planning instruction, educators should begin with the "end" in mind and design their activities to that end ensuring that all students can achieve proficiency.

Personalized Learning

According to the Education Quality Standards (EQS), "Schools shall ensure all students in grades seven through 12 shall have a Personalized Learning Plan [...] which shall describe the scope and rigor of learning opportunities and support services necessary for the student to achieve college and career readiness prior to graduation, and to attain a high school diploma"

Act 173 Technical Guidance: Coordinated Curriculum in School District Systems



(EQS 2120.4). Personalized Learning Plans (PLPs), or learner profiles, serve to help students inform and co-design their own paths to proficiency, and to take responsibility for their own learning. Through PLPs, students learn more about themselves – their personal and academic goals, their strengths and growth areas, their habits of mind and work – and to actively participate in designing an educational path to achieve their goals. PLPs allow students to discuss and share this learning with educators, family members and peers, receive input and guidance as they progress down their educational path, and develop self-reflection strategies – critical to future learning and success. A coordinated curriculum provides a map that can be used to guide decisions during the personalized learning planning process and enable learners to meet clearly defined proficiency-based graduation requirements through multiple means and pathways. This type of coordinated curriculum, combined with a robust personalized learning environment, will create a system that is flexible enough to meet student needs while also providing predictability for students, families, and educators.

Flexible Pathways

Now more than ever, coordinated curricula must reflect the importance of flexible learning pathways for students. Flexible pathways are the embodiment of deepening student learning by incorporating each student's interests, strengths and needs - including student voice and choice in what, how, when and where they learn – to achieve the goals of active engagement, academic success, and preparation for post-secondary opportunities. The EQS state that schools "must provide students the opportunity to experience learning through flexible and multiple pathways" and that students "must be allowed to demonstrate proficiency by presenting multiple types of evidence" (EQS 2120.1). A coordinated curriculum that focuses on concept and skill development rather than a traditional emphasis on rote learning is the only way to allow students multiple ways to achieve and demonstrate proficiency, not all of which require time spent inside a traditional classroom setting.

Integration and Transfer

A strong interdisciplinary approach is necessary when the goal is to foster students' ability to transfer skills and knowledge. Learning opportunities that integrate multiple content areas **and** embed transferable skills – including technology use/literacy -- are representative of the real world, engaging, and challenge the idea that academic disciplines exist in isolation. In order to be career and college ready, students need to be able to *apply* their learning in multiple settings and situations. A coordinated curriculum that focuses on the essential skills and concepts that will be of value to students beyond the present and that have crossover application to other content areas is essential for student success.

Section Two: Coordinated Curriculum as a Major Systems Lever for Act 173

The purpose of Act 173 of 2018 is to enhance the effectiveness, availability, and equity of services provided to all students who require additional support in Vermont's schools.

Page 6 of 13

Act 173 Technical Guidance: Coordinated Curriculum in School District Systems



Act 173 also directs the AOE to undertake specific tasks furthering the programmatic goals outlined in the Act. The Agency is required to assist supervisory unions to expand and improve their delivery of services to students who require additional supports. Furthermore, the AOE is directed to provide technical assistance with the goal of fostering best practices, as described in Act 173, for the delivery of services provided to all students who require additional supports in Vermont's schools.

Those best practices include:

- 1. ensuring core instruction meets most needs of most students;
- 2. providing additional instructional time outside core subjects to students who require additional support, rather than providing interventions instead of core instruction;
- 3. ensuring students who require additional support receive all instruction from highly skilled teachers;
- 4. creating and strengthening a systems-wide approach to supporting positive student behaviors based on expert support; and
- 5. providing specialized instruction from skilled and trained experts to students with more intensive needs.

A coordinated curriculum demonstrating the six key attributes is essential to any SU/SD committed to "enhance[ing] the effectiveness, availability, and equity of services provided to all students who require additional support in Vermont's schools" (Act 173 of 2018). This type of alignment creates a level of consistency across the SU/SD.

An effectively delivered curriculum that is comprised of standards-based learning outcomes and is vertically and horizontally aligned across the SU/SD ensures that all students within that SD/SU are receiving the same quality education in preparation for graduation. The result is a consistent education, regardless of the town or school that the student lives in or is attending, or the classroom **or context (i.e., flexible pathway)** in which the student is working toward proficiency. Such consistency provides more equitable access to students from different sending schools as well as those whose families move around within the SU/SD, thus limiting the potential for learning gaps.

A coordinated curriculum also enables educators and students to design learning opportunities that are informed by and build upon past learning experiences of their students. Since "[e]ffective instruction depends on understanding the complex interplay among learners' prior knowledge," it is important for educators to understand what their students know and can do when they enter their classrooms, and a coordinated curriculum makes this possible (National Academies of Sciences, Engineering, and Medicine 2018). A strong curriculum builds over time, both in depth and complexity. This type of learning trajectory is essential when we look at the science behind how the brain works.

Additionally, having a coordinated curriculum comprised of learning progressions can aid in the development of "instruction and assessment because they represent a goal for summative assessment, indicate a sequence of activities for instruction, and can guide the design of formative assessment processes that provide indicators of students' understanding (Corcoran et



al., 2009; Songer et al., 2009)" (National Academies of Sciences, Engineering, and Medicine, 2018). Because of the interwoven nature of curriculum, instruction, and assessment, coordination of these educational components leads to a more complete educational experience within an SU/SD. Investing in Needs-Based Professional Learning that allows for systems to develop and refine their coordinated curriculum can serve to identify further investments in improving instructional and assessment practices.

Finally, a coordinated curriculum provides a level of transparency to students, educators, parents, and stakeholders so that everyone involved has a clear understanding of the expectations for learning within the educational system. Such transparency facilitates the scaling and strengthening of cross-disciplinary experiences and technology integration, as it allows for greater collaboration within and across buildings within an SU/SD.

Section Three: Implementation of Coordinated Curriculum in Supervisory Districts/Unions

In order to support the development or refinement of a coordinated curriculum that demonstrates the six attributes described in Section One, the AOE recommends the following strategies:

Communicate the Relationship Between Curriculum, Instruction, and Assessment

It is essential for all educators engaged in this work to understand how curriculum, instruction, and assessment reinforce, support, and inform each other. A coordinated curriculum that is both coherent and nimble provides educators with a solid framework on which to build their instructional activities and assessment opportunities, while allowing them the flexibility to use their professional expertise to design the best educational environments for their individual students. A systems-wide coordination of curriculum ensures all students across the SU/SD are exposed to content and concepts aligned to standards, develop skills through high quality core instruction, and are thus held to the same high standards for performance on multiple types of assessments.

Identify Foundational Components

In developing a curriculum that is coordinated across an SD/SU, it is helpful to start with certain foundational components. Having an agreed-upon definition of career and college ready students, such as a Portrait of a Graduate (PoG), that illustrates the SD/SU's collective vision of college and career readiness is an excellent place to begin. A PoG can inform an SD/SU's development of Proficiency-Based Graduation Requirements (PBGRs) and ensure that proficiencies truly reflect the key content, concepts, and skills today's students will need for future success. Drawing from the identified PBGRs, an SD/SU can develop proficiencies based upon standards, which include academic standards as well as transferable skills. Not all standards are created equal, so there may be an emphasis on certain standards over others as required for graduation (and in accordance with EQS 2120.5), or a distilling to critical proficiencies that support cross-application in a multidisciplinary world.

Act 173 Technical Guidance: Coordinated Curriculum in School District Systems



The next step along the path of curriculum coordination is to break down the standards into performance indicators, which provide more information about the expectations surrounding achieving proficiency for each standard. They describe or define what learners need to know, understand, and be able to do to demonstrate proficiency related to standards. Performance indicators are also measurable and allow learners to demonstrate proficiency over time. Each performance indicator should then be further clarified with a set of learning targets that show a finer level of detail regarding what a student must know or be able to do in order to meet that particular indicator.

Once the SD/SU has a common understanding of these foundational components, it becomes much easier to construct a coordinated curriculum.

Select Materials, Instructional Programs, and Professional Development

While a curriculum is not a specific program or set of materials, it is still necessary to select such tools to deliver the curriculum to students. It is easier to determine which tools to use within a curriculum that is coordinated at the SD/SU level, as resources can be explored collectively and shared across the SD/SU. Considerations regarding implicit bias and equity literacy at the SD/SU level also ensure that all students across the system engage in an inclusive curriculum that is responsive and reflective of diverse communities of learners. To align with personalized and blended learning scenarios, instructional materials should reflect the need for modularity; this will create space for student input in curriculum and assessment design and allow for students to create with technology, not simply consume it.

It is important to note that an educational program is only as good as the teacher delivering it, so more important than the selection of the program is the preparation of teachers to teach the curriculum. This creates an opportunity for SD/SUs to leverage needs-based professional learning in service to preparing teachers adequately. In an SD/SU with a coordinated curriculum "[...] leadership ensures sufficient infrastructure to support educators learning together with and from experts from inside or outside the school" (EQS, 2121.3). The goal is to build a culture that provides the supports that enable educators across an SD/SU to continually improve and meet the needs of their students.

Use Data to Drive Curriculum Development

Data is a powerful driving force in the improvement of educational practices. Within a coordinated curriculum, SD/SUs can use statewide and interim assessment data to inform curricular revisions. SD/SUs should leverage their ESTs and LCAS to inform decision-making about student outcomes and curricular decisions to improve student outcomes. In general, a coordinated curriculum supports and is supported by all components of MTSS.

Utilize Opportunities for Collaboration

An asset of a coordinated curriculum is that it lends itself to professional collaboration across an SD/SU. Educators working within the same grade band and/or content area have the opportunity to work together to plan common units, share materials and ideas for lessons, and

Act 173 Technical Guidance: Coordinated Curriculum in School District Systems



brainstorm interventions when students struggle. If teachers are sharing materials and engaging in similar instructional activities, they will also have common student work that they can review collaboratively. This also aids ESTs in determining the correct course of intervention for students who may struggle. In the case of emergencies like illness or other rapidly changing scenarios, a coordinated curriculum allows teachers to work together across classrooms to provide continuity for their students.

Ensure Personalization

In a personalized learning system, student agency is essential. Therefore, the curriculum must support students' opportunity to set goals, engage their interests, access flexible pathways, and inform how they ultimately meet graduation requirements. Personalized Learning Plans (PLPs) can aid in capturing and communicating prior learning and allow for student agency and input around what it means to demonstrate proficiency. Personalized learning is also a major contributor to student engagement and independence. As we move forward in implementing structures that both can and must embrace a wide range of learning spaces, student input on learning experiences that incorporate their abilities, aptitudes and dispositions will make learning outside of the classroom easier to understand and more meaningful. While there are certain curricular requirements in place in a coordinated curriculum, there should still be space for students to co-design and inform how and when they meet those requirements.

Section Four: AOE Leadership, Support and Oversight

In order to support the development of a coordinated curriculum, the AOE is providing leadership by:

- developing tools, such as the upcoming Vermont Portrait of a Graduate, to support a shared understanding with the field regarding the purpose and goals of a coordinated curriculum;
- 2. partnering with stakeholders, particularly curriculum directors and groups such as the VT Curriculum Leaders Association, to identify the components of a coordinated curriculum that is connected to and aligned with Common Core State Standards, and that promotes the role and function of PBGRs; and
- 3. working with groups of stakeholders to develop and identify prototypical district-level coordinated curricula across various content areas, building from exemplar PBGRs and incorporating personalized learning and flexible pathways.

The AOE is providing support by:

- 1. developing a single-point rubric to obtain baseline information on where school districts are in developing formal written curriculum, including a system-wide literacy plan;
- 2. researching the components of coordinated curricula in personalized, proficiency-based systems;

Page **10** of **13**

3. working to collect and provide models of coordinated curricula; and

VERMONT AGENCY OF EDUCATION

4. publishing specific technical guidelines on how to develop and enact a system-wide coordinated curriculum through such tools as the upcoming Portrait of a Graduate.

The AOE is providing oversight through:

- 1. identifying metrics for evaluating the State's response to Act 173; and
- 2. refining and expanding upon our existing accountability system.

References:

EQS 2120.5. Curriculum Content, and 2120.6. Curriculum Coordination

How People Learn II: Learners, Contexts, and Cultures. The National Academies Press, 2018.

Jacobs, Heidi Hayes., and Heidi Hayes. Jacobs. Curriculum 21: Essential Education for a Changing World. ASCD, 2010.

Marzano, Robert J. What Works in Schools: Translating Research into Action. Association for Supervision and Curriculum Development, 2003.

McTighe, Jay, and Grant Wiggins. "From Common Core Standards to Curriculum: 5 Big Ideas." WASCD Highlighter, 2013, pp. 6–15.

Messenger, Caroline. "Curriculum Model for Mastery-Based Learning " Competency Works." Competency Works: Learning for the Cutting Edge, Competency Works, 9 Dec. 2013, https://www.competencyworks.org/reflections/curriculum-model-for-mastery-based-learning/.

Partnership, Great Schools. "Curriculum Definition." The Glossary of Education Reform, 12 Aug. 2015, https://www.edglossary.org/curriculum/.

Resources

For further information from the Agency of Education about specific content areas and related standards, click on the links below:

- <u>Digital Learning</u>
- Driver Education
- English Language Arts
- Financial Literacy
- Global Citizenship
- Health Education
- Mathematics
- Physical Education
- Science
- Visual and Performing Arts

For additional resources from the Agency to support Coordinated Curriculum in Student-Centered Education, visit the following pages:

• <u>Assessments</u>



- Early Education
- Education Quality Standards (EQS)
- Flexible Pathways
- Glossary
- Personalized Learning
- Proficiency-Based Learning
- Special Education
- Vermont Multi-Tiered System of Supports (VTmtss)

Research

"Beliefs and Practices of Proficiency-Based Learning." Great Schools Partnership, https://www.greatschoolspartnership.org/proficiency-based-learning/about-pbl-simplified/beliefs-and-practices-of-proficiency-based-learning/.

Burns, Rebecca Crawford. "Curriculum Mapping." Curriculum Handbook, ASCD, http://www.ascd.org/publications/curriculum-handbook/421/chapters/Overview.aspx.

Deye, Sunny. A Look at Competency-Based Education in K-12 Schools, National Conference of State Legislatures, Aug. 2018, http://www.ncsl.org/research/education/a-look-at-competency-based-education-in-k-12-schools.aspx.

Hammonds, Virgil. "4 Ways to Choose a Better Curriculum." KnowledgeWorks, 20 June 2016, https://knowledgeworks.org/resources/4-ways-to-choose-a-better-curriculum/.

LeGeros, Life. "8 Ways Feedback Makes Proficiencies Work." Innovation: Education, Tarrant Institute of Innovative Education, 20 Aug. 2019, https://tiie.w3.uvm.edu/blog/make-proficiencies-work/?highlight=grace#.XebE7W5Fzu-.

McTighe, Jay, and Greg Curtis. Leading Modern Learning: a Blueprint for Vision-Driven Schools. Solution Tree Press, 2019.

Patrick, S., Worthen, M., Frost, D., & Truong, N., Current to Future State: Issues and Action Steps for State Policy to Support Personalized, Competency-Based Learning, 2017.

"Proficiency-Based Education." Innovation: Education, Tarrant Institute of Innovative Education, 2019, https://tiie.w3.uvm.edu/blog/proficiency-based-education/#.XebGAW5Fzu-.

"Research Evidence." Great Schools Partnership,

https://www.greatschoolspartnership.org/proficiency-based-learning/research-evidence/.

Sturgis, Chris. "What Is Competency Education?" Reaching the Tipping Point: Insights on Advancing Competency Education in New England, Oct. 2016, https://www.competencyworks.org/resources/briefing-papers/.

The Role of Learning Progressions in Competency-Based Pathways. Achieve, 2015.

Truong, N. (2019). Aligning education policy with the science of learning and development. Vienna, VA: iNACOL.



Vander Ark, Tom. "What is Curriculum? From Managed Instruction to Personalized Learning." Vander Ark on Innovation, Education Week, 2 Jan. 2017.

Wiggins, Grant P., and Jay McTighe. Schooling by Design: Mission, Action, and Achievement. Association for Supervision and Curriculum Development, 2007.

Wiggins, Grant P., and Jay McTighe. Understanding by Design. Association for Supervision and Curriculum Development, 2008.

Page 13 of 13

AGENCY OF EDUCATION

Act 173 Technical Guidance: Coordinated Curriculum in School District Systems (Revised: Oct. 14, 2020)