

Comments of the Independent Regulatory Review Commission



State Board of Education Regulation #6-347 (IRRC #3303)

Academic Standards and Assessment

August 5, 2021

We submit for your consideration the following comments on the proposed rulemaking published in the June 5, 2021 *Pennsylvania Bulletin*. Our comments are based on criteria in Section 5.2 of the Regulatory Review Act (RRA) (71 P.S. § 745.5b). Section 5.1(a) of the RRA (71 P.S. § 745.5a(a)) directs the State Board of Education (Board) to respond to all comments received from us or any other source.

1. RRA Section 2 – Reaching of consensus.

The Board proposes to amend Chapter 4 (relating to academic standards and assessment) in order to update the Science, Environment, Ecology, Technology and Engineering academic standards, along with related and technical amendments. We acknowledge the effort of the Board in developing these new standards, including stakeholder engagement sessions, surveys, and work by Steering and Content Committees.

A significant number of comments have been received on this regulation from legislators, the Department of Conservation and Natural Resources, the Conservation and Natural Resources Advisory Council, members of the Steering and Content Committees, a wide range of educators, county conservation districts, environmental organizations, professional associations and the public. Their comments raise numerous concerns regarding the academic standards, many focusing on the omission of Environment, Ecology and Agriculture, and calling for additional standards to strengthen science instruction.

Legislators urge the Board to provide members of the Steering and Content Committees with additional time to continue their efforts. Members of the Steering and Content Committees comment that they are unclear as to the extent to which research on disciplinary learning was considered, and state that the academic standards were written by a small group outside of scheduled meetings. Further, agriculture science teachers advocate for continued conversations with educators and context experts.

In light of these comments, we draw attention to a key component of the regulatory review process as stated in Section 2(a) of the RRA: “To the greatest extent possible, this act is intended to encourage the resolution of objections to a regulation and the reaching of a consensus

among the commission, the standing committees, interested parties and the agency.”
71 P.S. § 745.2(a).

We urge the Board to actively seek input from all interested parties, including legislators and educators, as it develops the final-form regulation. Should the Board determine that revisions to the academic standards are necessary, we suggest the Board consider publishing an Advance Notice of Final Rulemaking to provide an opportunity for the regulated community and the public to evaluate the academic standards prior to submission of the final-form regulation.

2. Section 4.12. Academic standards. – Reasonableness.

Under subsection (i), the Board will review academic standards and assessments to determine if they are appropriate, clear, specific and challenging no sooner than every five years and no later than every 10 years. The Board explains in the Preamble that the current provision requiring a three-year review may not provide school entities with enough time to implement and evaluate updated academic standards before beginning the review process for a subsequent set of standards. A commentator supports a five-year review and expresses concern with a 10-year review, noting that “[s]cience and technology progress so rapidly that many topics are outdated by the time they reach the K – 12 curriculum.” We ask the Board to explain why it believes a 10-year review period is appropriate and reasonable.

3. Section 4.24. High school graduation requirements. – Reasonableness of requirements, implementation procedures and timetables for compliance by the public and private sectors; Clarity and lack of ambiguity.

Subsection (b) sets forth high school requirements through the 2015 – 2016 school year and subsection (c) sets forth high school graduation requirements that will begin in the 2022 – 2023 school year. We have two concerns with the implementation of this section.

First, graduation requirements for the 2016 – 2017 through the 2021 – 2022 school years are not stated in this section. For purposes of the regulatory record, the Board should clarify this section to include the high school graduation requirements for the omitted years.

Second, subsection (c)(1)(iii) requires school districts, charter schools, cyber charter schools, and area career and technical schools to adopt and implement requirements for high school graduation that demonstrate proficiency with the Science, Environment and Ecology academic standards in Appendix B-1 beginning in the 2022 – 2023 school year. However, Appendix B-1 will not be effective until July 1, 2024. Appendix B will be in effect until it sunsets on June 30, 2024. To ensure that the timetables for compliance are accurately stated, we ask the Board to revise subsection (c)(1)(iii) to reference Appendices B and B-1, along with their respective effective dates.

4. Section 4.51. State assessment system. – Reasonableness of requirements, implementation procedures and timetables for compliance by the public and private sectors; Clarity and lack of ambiguity.

Under subsection (a)(6), the State assessment system shall be designed to assess student proficiency in Science, Environment, Ecology, Technology and Engineering as set forth in Appendix B-1. As explained in Comment #3, Appendix B-1 will become effective on July 1, 2024. To ensure that the timetables for compliance by schools are accurately stated, we ask the Board to revise subsection (a)(6) to reference Appendices B and B-1, along with their respective effective dates, or explain why it is unnecessary to do so.

This comment also applies to Sections 4.51a(b) and 4.51b(a)(3) (relating to Pennsylvania System of School Assessment; and Keystone Exams).

5. Appendix B. – Implementation procedures; Clarity and lack of ambiguity.

Appendix B will sunset on June 30, 2024. Will the Board reserve this appendix at that time? We ask the Board to explain how it will ensure that the regulated community is using the appropriate academic standards in the *Pennsylvania Code* when the final-form regulation is codified.

6. Appendix B-1. – Consistency with statute; Clarity, feasibility and reasonableness of the regulation.

Appendix B-1 contains the following academic standards: Pennsylvania Integrated Standards for Science, Environment, Ecology, Technology and Engineering (Grades K – 5); Pennsylvania Integrated Standards for Science, Environment and Ecology (Grades 6 – 12); and Technology and Engineering Standards (Grades 6 – 12). The Board explains that these academic standards provide integration of Environment, Ecology, Science, Engineering and Technology education in one document for kindergarten through grade 5, and grade bands for grades 6 – 8 and 9 – 12 so that there is greater flexibility in course design and progression. This represents “a shift to the integration of Science with Environment and Ecology for grades 6 – 12, encouraging integration across the Science disciplines while promoting equity by ensuring the Environment and Ecology content is included in Science instruction for all students across all grades.” The Board goes on to state that this appendix “considers the Pennsylvania context with clear connections to agriculture, career readiness and sustainability.”

Commentators have numerous concerns, questions and recommendations relating to these academic standards, including the following:

- The policies in Section 2 of the Environmental Education Act stating the duties of the Board for environment and ecology curriculum and the Department of Education for formal environmental education are not met in the proposed standards; 35 P.S. § 7522;
- The following performance expectations, disciplinary core ideas and appropriate learning progressions from the current standards and the Next Generation Science Standards

(NGSS) are omitted or not connected: watersheds and wetlands; renewable and nonrenewable resources; environmental health; agriculture and society; integrated pest management; ecosystems and their interactions; threatened, endangered and extinct species; humans and the environment; and environmental laws and regulations;

- The standards are adapted from the performance expectations in the NGSS, but do not include disciplinary core ideas, cross-cutting concepts, and science and engineering practices. As such, the performance expectations are not specific enough to show teachers and assessors the level of knowledge and achievement necessary to attain the standard, and students cannot attain the performance expectations if the disciplinary core ideas, cross-cutting concepts, and science and engineering practices are not part of the standards;
- The following topics from North America Association for Environmental Education Guidelines are not included: human systems; decision-making and action skills; and personal and civic responsibility;
- The standards for grades 6 – 12 should be revised to include Environment, Ecology and Agriculture as a separate, fifth domain with associated performance expectations to provide a level of specificity and application that makes the standards meaningful and effective;
- There was not an attempt to crosswalk the standards for Science, Environment and Ecology for grades 6 – 12 to the National Agriculture, Food, and Natural Resources standards to provide clarity and guidance to agriculture science teachers;
- The following Environment and Ecology standards should be added to reinforce the connections between humans and the natural world: systems thinking; human health; diversity, equity and inclusion; direct experience; expanding environmental science and ecology principles across disciplines; critical and creative thinking; and sustainability;
- Suggestions for additional standards addressing climate change, alternative energy sources, Pennsylvania-specific standards focused on the environment and ecosystems, environmental literacy and applied science; and
- Environment and Ecology standards overlap heavily with the performance expectations by grade, including those that relate to human activity, impact and decision making about the environment and its protection.

We ask the Board to explain how the academic standards in Appendix B-1 adequately integrate standards for Science, Environment, Ecology, Technology, Engineering and Agriculture. We also ask the Board to explain how students will achieve competency under these standards in order to be properly prepared for the Science, Technology, Engineering and Mathematics economy and the 21st century workforce. We will review the Board's explanations and responses to the commentators' concerns when determining if the regulation is in the public interest.

7. Miscellaneous clarity.

- The response to Regulatory Analysis Form Question # 29 regarding the effective date of the final-form regulation should be updated.
- Sections 4.24(c)(1)(iii)(B)(I) and 4.51(a)(6) include “Civics and Government,” which are no longer included in the Keystone Exams. Should references to these academic standards be deleted?
- The U.S.C.A. citation should be added following cross-reference to the Elementary and Secondary Education Act of 1965 in Section 4.24(j).
- The Board should review cross-references to Section 4.51b to ensure citations reflect renumbering.
- The Board should consider clarifying Section 4.51b(j) by specifically citing the Every Student Succeeds Act (Pub. L. No. 114-95) as the successor federal statute to the No Child Left Behind Act of 2001 (Pub. L. No. 107-110).
- Section 4.51c should be corrected by deleting the subsection “(a)” designation in accordance with Section 2.1(e) of the *Pennsylvania Code and Bulletin Style Manual*.
- The *Purdon’s* citations to sections 121 and 121.1 of the Public School Code of 1949 (24 P.S. §§ 1-121 and 1-121.1) should be corrected in Sections 4.24, 4.51b, 4.51c and 4.51d.