

## H.274 Nutrition and Agriculture Education

### Supplemental Information to March 31, 2023, Testimony

Thank you for the opportunity to provide additional information on the topic of nutrition and agriculture education. On March 31, 2023, the Agency of Education provided testimony on H.274 highlighting the following:

- Nutrition education is already a required component of comprehensive health education as defined by statute.
- Agriculture education is a field of study that falls within the natural sciences, a required content by statute.
- If Nutrition and/or agriculture education is added to statute as specified fields within science it poses the risk of creating conflict with existing statute and state-adopted standards additional complexity that would undermine the ultimate purpose and values of the bill to provide exposure to nutrition and agriculture education as part of a rigorous, equitable education system.

The Committee articulated the following observations and goals informing the genesis and purpose of H.274 (1) there are pockets and/or localized agriculture/nutrition education efforts already happening in the state but they appear dependent on the individual educator or district leading that effort; and (2) how can the State increase student exposure to agriculture, food science, and nutrition (to better understand where their food comes from)?

We would be delighted to offer a few suggestions for high-impact, sustainable strategies to support program and educator development and networking and continue to collaborate with and support the goals of the Committee.

Finally, Committee members had some questions related to course enrollment data, and how schools might communicate about their programs of study, curriculum content and course content. We hope the following offers additional insight/information for the Committee.

#### Contact Information:

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## Additional Information on Nutrition and Agriculture Education

### Nutrition Education Course Enrollment Data

There are several courses that are taught within the state that likely cover and touch on nutrition education (See below\*).

2020 Course	Student Counts
Health and Fitness	2379
Health and Life Management	900
Health Education	12902
Health Education—Independent Study	539
Health Education—Other	956
Health Informatics and Data Management	7
Health Information—Independent Study	2
Health Information—Other	746
Health Science	360
Health Sciences—Other	39
Health Sciences—Workplace Experience	1
Human Growth and Development	13
Lifetime Fitness Education	2510
Nutrition and Food Preparation	1350
Nutrition and Wellness	519
Particular Topics in Health Information	133
Particular Topics in Health Sciences	13
Physical Education	7932
Physical Education (grade 1)	3725
Physical Education (grade 2)	3678
Physical Education (grade 3)	3780
Physical Education (grade 4)	3829
Physical Education (grade 5)	3535
Physical Education (grade 6)	3624
Physical Education (grade 7)	2385
Physical Education (grade 8)	2067
Physical Education (kindergarten)	3805
Physical Education (pre-kindergarten)	39
Physical Education Equivalent	120
Physical Education/Health/Drivers' Education	36
Physical Education—General	2973
Physical Education—Independent Study	313
Physical Education—Other	1611
Physical Education—Workplace Experience	3
Physical Science	1598
Physical Science (prior-to-secondary)	503

2020 Course	Student Counts
Physical, Health, and Safety Education— Aide	12
Physical, Health, and Safety Education— Independent Study	928
Physical, Health, and Safety Education— Other	590
Physical, Health, and Safety Education— Workplace Experience	137
*Information from the <a href="#">VT Agency of Education Data Dashboard</a> .	

**It is challenging, however, to clearly identify how and to what degree nutrition education is being taught on the ground across K-12 curricula in Vermont schools. In general, the degree to which nutrition is integrated into K-12 curriculum and expectations, as well as within unanticipated spaces (e.g., afterschool, community school gardens, etc.) while written into statute in [16 VSA 131](#), is largely a local decision.**

- There are [Physical Education National Standards](#) that are specific to Nutrition, but how this content area is prioritized in the classroom is a teacher/local decision.
- Burlington High School has built into its [core learning proficiencies](#), expectations that the, “The Burlington High School graduate accepts responsibility for personal fitness by demonstrating the relationship between **nutrition**, physical activity, and personal lifestyles in determining health and life choices.” The inclusion of nutrition into school core proficiencies does not occur across all schools.
- In the elementary grades, K-6, health education is predominantly taught by the classroom teacher. Therefore, nutrition education may occur also within these general education classrooms.
- As reported in the [Vermont School Health Profiles 2020](#) report, 95% of required health courses taught by health educators include nutrition/diet content. As outlined by [Educational Quality Standards](#), Vermont students are required to take one half credit health course in high school. Therefore, this 95% represents predominantly content covered in this secondary course alone, as locally defined, across the state and not how nutrition is covered across the K-12 continuum.
- There are a number of national and state health and physical education resources available, that local educators may use to build a curriculum (see [Health Education](#) and [Physical Education](#) AOE Webpages). Across the state, however, only 43% of schools reported in 2020 having a written health curriculum and

only 51% reported having a scope and sequence ([Vermont School Health Profiles, 2020](#)).

Based on [Vermont School Health Profiles 2020](#) data, 67% of surveyed Vermont health educators reported that they would like more training/professional development in Nutrition and Dietary Behavior.

### **Agriculture Education Course Enrollment Data**

There are a number of courses that are taught within the state that are specific to agriculture education (See below\*).

2020 Course	Student Count
Agricultural Entrepreneurship	2
Agricultural Metal Fabrication Technology	23
Agricultural Production	2
Agricultural Production and Processing—Workplace Experience	1
Agriculture and Natural Resources—Comprehensive	342
Agriculture Computers and Technology	18
Agriculture Mechanics and Equipment	29
Agriculture Mechanics/Equipment/Structures	851
Agriculture, Food, and Natural Resources—Other	160
Agriculture, Food, and Natural Resources—Workplace Experience	17
Agriculture—Comprehensive	12
Aquaculture	1
Botany	894
Culinary Art Specialty	813
Environmental Science	1175
Exploration of Restaurant, Food and Beverage Services	117
Food Preparation and Health Management	179
Food Product Processing	22
Food Science	170
Food Service	7
Forestry Management	1350
Introduction to Agriculture and Natural Resources	359
IB Environmental Systems and Societies	515
Large Animal Care	7
Life and Physical Sciences—Other	1203
Natural Resources Management	24
Natural Resources—Other	365
Nutrition and Food Preparation	1350
Particular Topics in Agricultural Mechanics and Construction	33
Particular Topics in Agricultural Production/Processing	7
Particular Topics in Natural Resources	86

2020 Course	Student Count
Particular Topics in Plant Systems	4
Plant Systems/Science	45
Sustainable/Alternative Agriculture	47
Wildlife and Recreation Management	28
Zoology	691
*Information from the <a href="#">VT Agency of Education Data Dashboard</a> .	

**There are several science courses that students also take in the state that may have connections to concepts related to agriculture education (i.e., plant science, food systems, etc.) such as Physical Sciences or Earth Science. However, it is largely at the discretion of the district or individual teacher to make the connections between National Science Standards (the Next Generation Science Standards) and agriculture related content.**

- The following chart (created by AOE staff) shows a few examples of how these connections could be made in an elementary grade classroom:

Grade Band	Next Generation Science Standards	Potential Agriculture Connection
3-5	3-ESS2-2: Obtain and combine information to describe climates in different regions of the world.	Connect this information to the growing potential and food security of different regions
3-5	3-ESS3-1: Make a claim about the merit of a design solution that reduces the impacts of weather-related hazard.	Farmers cannot eliminate natural hazards but can take steps to reduce their impacts on farms
3-5	4-ESS2-2: Analyze and interpret data from maps to describe patterns of Earth's features.	This information can be applied to make connections between the large-scale features and the soil (i.e., composition, texture, fertility) that is present

- Middlebury Union High School incorporates agriculture education topics within a course titled "[Design, Build, and Grow](#)" as described in their course handbooks: "Using the design and engineering loop as the theme of the course, students will be faced with hands-on, real world problems with a focus on designing and building projects. Science, technology, engineering, and math concepts (STEM) will be embedded in all of the units. Concepts such as reverse engineering, horticulture and botany, sustainability, and environmental science

will be covered throughout the year. The MUHS greenhouse will be used as an outdoor classroom for this course as students learn agricultural and horticultural concepts and skills. Students will pick an engineering design project that focuses on solving a problem in the community as their final summative assessment for this course.”

Districts can apply for grant funding [through Farm to School \(FTS\) grant programs](#). In addition to financial support, FTSEC grantees also receive technical assistance from non-profit partner organizations, Vermont Garden Network, Hunger Free Vermont, Northeast Organic Farming Association of Vermont, and Shelburne Farms to help them implement comprehensive farm to school and farm to early childhood strategies using the “3-C” approach, which incorporates Classroom, Cafeteria, and the Community. Other resources in this space include:

- The [Vermont Farm to School and Early Childhood Network](#) supports curriculum development and resource sharing as part of their “[Ease of Use](#)” Action Team.
- The [Vermont Harvest of the Month](#) resource provides ready to go teaching materials that promote the use of local, seasonal Vermont produce.
- [Shelburne Farms](#) provides professional development to teachers in ways to integrate agricultural education into classroom curriculum.

**Farm to School efforts do impact many schools, but the manner and extent that these efforts lead to effective integrated agriculture and nutrition teaching/curriculum across schools is not fully known.**

- Of Vermont schools that responded to the 2018 [Vermont Integrated Food, Farm, and Nutrition Programming Data Harvest](#), half reported that none or few of their teachers are incorporating agriculture (FTS) education in their classrooms.
- Based on School Health Index analysis of Farm to School grantees done in [2016](#), only two in ten local health educators in schools who have had an FTS grant received professional development in nutrition and dietary behavior.
- As stated in [Vermont Food System Plan Issue Brief](#), “Existing agricultural education resources for educators are scattered, outdated, and conflicting. Existing programs have limited capacity to address the host of statewide pre-K-12 agricultural literacy issues and needs.”

## AOE Observations and Recommendations

There are several factors contributing to limiting the capacity for schools and teachers to engage with interdisciplinary<sup>1</sup> teaching and learning, including the prolonged impact of COVID-19. We recommend(ed) an approach that prioritizes increased professional learning and technical assistance for schools to support high-quality interdisciplinary nutrition and agriculture education. There are several national and state organizations that specialize in nutrition/agriculture education (e.g., Shelburne Farms (VT), UVM Extension/Nutrition, Laurie M. Tisch Center for Food, Education & Policy (NY), Center for Ecoliteracy (CA), etc.) some of which the Agency of Education already works with in formal and informal ways, that could provide these on the ground curriculum and professional development services with supervision by the Agency of Education.

We suggest the following three recommendations.

**Local Wellness Policy Guide.** Vermont schools that are a part of the National School Lunch program are required by federal regulation ([7 CFR 210.31](#)) to implement a Local Wellness Policy. At the local school level, this policy should outline the ways that schools support the general wellness needs of staff and students, with the purpose of also bringing the larger community into the support of overall health. As suggested in the [Vermont Local Wellness Policy Guide](#), “The school wellness team shall include representatives from the local agricultural community, food and nutrition professionals, such as local farmers, chefs, nutritionists, health educators, or representatives from farm organizations, agricultural industry or community organizations that work to promote local foods.”

The Agency of Education is currently preparing to publish a draft local wellness policy guide for public comment after more than a year of working with the [Advisory Council on Wellness](#) (based on Act 66 of 2021), but previous research has highlighted that, (1) wellness policies across the state vary in terms of rigor and implementation (Cooper et al., 2021), and; (2) 26% of Vermont schools do not have school level teams that offer guidance on the development and coordination of policies and health-related activities at the school (School Health Index, 2020).

- **Recommendation:** By statute (16 VSA 131, 133, 135), the Agency of Education (by appointment from the Secretary) shall provide technical assistance to school

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<sup>1</sup> As defined in the most [recent revision](#) of the VT State Education Board Educational Quality Standards, “Interdisciplinary means examining and teaching a subject from multiple academic perspectives and encouraging students to engage with and to synthesize diverse perspectives and narratives, including those from their lived experiences, into a coherent understanding or analysis.”



districts in the building of their wellness programs, provide professional development to teachers (pre-service and practicing) on wellness education, and review and supervise wellness curricula taught in public schools. However, predictable supports and structures including funding are needed to support the implementation of this technical assistance.

**Interdisciplinary Connections** - This pandemic has increased attention to the ways that student health and mental health are so paramount to learning. Indeed, learning cannot happen if health and wellness are compromised. The capacity to maintain and positively act on one's health and health contexts is, furthermore, an important skill for all students to be successful in their lives after graduation (see [Portrait of a Graduate](#)). However, topics such as health and physical health are sometimes seen as isolated from the rest of academic learning in K-12 schools- including science.

In 2009, the [National Academy of Sciences](#) called for more interdisciplinary and community engaged approaches to teaching and learning in the agricultural and life sciences to better respond to the food system challenges of the 21st century. This Committee provided a number of examples of [interdisciplinary](#) projects that bridge the health and science divide within education, the "Iron Chef" example for one. There is a growing body of evidence that supports the use of multi-disciplinary learning assessments, as well teaching and learning that occurs in authentic contexts (such as in a garden or at a farm) (McTighe et al., 2014).

- **Recommendation:** Predictable supports and structures including funding are needed to support state coordinated professional development efforts for educators in implementing interdisciplinary instruction in Vermont schools (this could work in partnership with current Farm to School efforts taking place in the space of curriculum).

**Inclusive and Comprehensive Nutrition Education** - The Eating Disorder Workgroup (established through Act 115) recently made the [recommendation](#) to,

"In primary, intermediate, and secondary schools and after school programs of school nurses and other school personnel, such as health educators, physical education teachers, school guidance counselors, athletic coaches, and school food staff. - Educational focus around awareness of eating disorders, prevention of eating disorders, language used throughout the school setting in regard to food, nutrition, **and positive body messaging, and encouragement of discussion around cultural contributors relating to both food and movement.**"



At UVM, the [Weight-Inclusive Nutrition Research Group](#) hopes to build lessons and professional development centered on inclusive nutrition education. However, this specific effort is dependent on external short-term funding for sustainability.

- **Recommendation:** Support and/or encourage higher education institutions to engage in research and development in the area of inclusive nutrition education resources.