Educating Virginia Middle School Students to Resist Vaping

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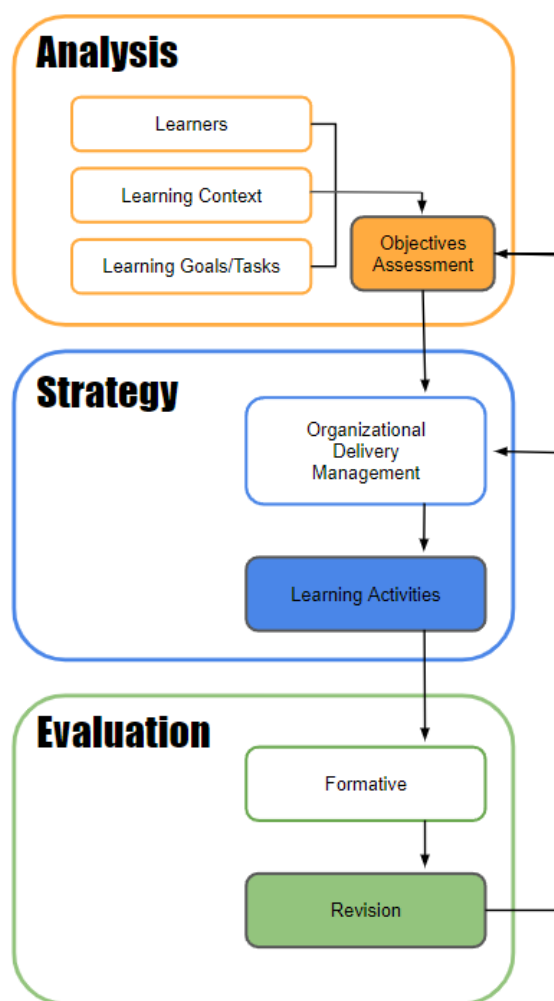IDT617: Foundations of Instructional Technology

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Problem Statement

For three decades, the number of adolescents in the United States using nicotine was on the decline due to a concerted effort by healthcare providers, educators, advocacy groups, and lawmakers. However, in the 2010s, with the growing popularity of the e-cigarette and the targeting of adolescents by e-cigarette companies, nicotine use among youth began to increase. In 2017, the number of youth using nicotine nearly doubled (Jones et al., 2020). Currently, 3.5% of middle school students report using e-cigarettes and this number is on the rise (Park-Lee, 2024). Many youth start vaping without realizing the harmful repercussions it poses to their health. Vaping has hazardous effects on developing adolescent brains that include cognitive impairments and deficits in memory and executive function. Deficits in executive function may lead to impulsive and risky behavior, putting an individual at higher risk of alcohol/marijuana use and suicide (Jones, et al., 2020). Other health risks associated with vaping include respiratory diseases, seizures, and tooth decay (Becker, et al., 2021)(Irusa, et al., 2024). Schools play an integral role in preventing the use of e-cigarettes among youth. Research has shown that schools with lenient policies regarding substance use and that fail to correct misconceptions about the risks of e-cigarettes see higher rates of vaping among students (Lippert, et al., 2019). The purpose of this instructional design project is to educate Virginia middle school students on the dangers of vaping and provide them with the tools to resist when offered an e-cigarette.

Instructional Design Model

The Smith and Ragan Model (2005) is an instructional design model that focuses on the creation of instructional materials and resources. There is an emphasis on the importance of clear and concise communication, effective organization, and use of appropriate instructional strategies. This model will be a useful tool to create effective and engaging instructional materials that are appropriate for Middle School students. There are 3 phases which include 8 steps for creating content; Analysis, Strategy, and Evaluation (Raible, 2020).

Analysis
- Learners
- Learning Context
- Learning Goals/Tasks
- Objectives Assessment

Strategy
- Organizational Delivery Management
- Learning Activities

Evaluation
- Formative
- Revision

Adapted from Smith and Ragan (2005)

The analysis phase is two-part. The authors will need to take a look at the Virginia Department of Education (VDOE) standards of learning for middle school students in health education. These standards will help define the objectives for this curriculum. Understanding adolescent behaviors and attitudes will help create appropriate resources for the program. The program administrators will need to analyze their learners and the resources to determine what content will be used.

During the Strategy phase, the authors will take the objectives, tasks and assessments to create content and resources. Activities along with rubrics will be created to align with the objectives.

Finally, during the Evaluation phase there are 2 parts again. Initially, program directors will need to look at formative assessments during each activity to determine its effectiveness. They should be able to go back to the analysis or strategy stage to redefine what activities are necessary for their school. The revisions made will be tailored to the school and can change even from year to year. Overall, the authors will evaluate formative and summative assessments in order to revise and redefine content resources.

Needs Analysis

Learners

The team utilized The Virginia Department of Health's Virginia Youth Survey (VYS) program to gather information about typical Virginia Middle School students. According to the VDH website, this survey has been developed to monitor priority health risk behaviors contributing to the death, disability, and social problems with youth in Virginia. The survey is given every odd year in randomly selected public schools within Virginia. (*Virginia Youth Survey - Virginia Youth Survey,* 2024) Additionally, the team used a 2010 article in Child Adolescent Psychiatric Clinics of North America which informs of the neurobiology of adolescent substance use disorders. It states that the rapid development of limbic systems and the immature prefrontal cognitive system may promote risky behaviors. (Helena J.V. Rutherford et al., 2010) From the same journal, an article on evidence-based interventions defines the typical learner. (Griffin & Botvin, 2010)

2023 YOUTH RISK BEHAVIOR SURVEY RESULTS

Virginia Middle School Survey
Detail Tables - Weighted Data

Q22: Have you ever used an electronic vapor product?

Total				Age				Grade		
		Total	11 or younger	12	13	14 or older		6th	7th	8th
Yes	%	10.0	3.8	10.2	12.1	16.9		4.2	12.7	12.7
	N	115	9	44	43	19		13	56	44
No	%	90.0	96.2	89.8	87.9	83.1		95.8	87.3	87.3
	N	1,005	178	327	382	118		240	368	395
Total	%	100.0	100.0	100.0	100.0	100.0		100.0	100.0	100.0
	N	1,120	187	371	425	137		253	424	439

Virginia Middle School Survey Detail Tables -Weighted Data. (n.d.). Retrieved October 14, 2024, from https://www.vdh.virginia.gov/content/uploads/sites/69/2024/08/2023VAM-Detail-Tables.df

According to the VYS, the 2023 Youth Risk Behavior Survey was given to 1,120 middle school students. Question 22 on the survey asks, "Have you ever used an electronic vapor product?" The report indicates a significant increase in the percentage of students using electronic vapor products from 6th to 7th grade with 4.2% of the 6th graders indicating use to an entire 12.7% of both 7th & 8th grade students responding yes to this question. This shows the importance of reaching students at the middle school level (*Virginia Youth Survey*, 2024).

This program, as well as the survey, addresses the needs of 6th through 8th grade students. Middle School students are usually between the ages of 11 to 14 with varying types of support and influences from family members to school faculty. Our program is designed to be universally applicable in a middle school setting, regardless of student race or gender (*Virginia Youth Survey*, 2024). The instructional context is for use within a typical middle school building in Virginia following the Virginia Standards of Learning for Health Education. The materials provided are intended to be used during Red Ribbon Week (October 23-October 31). It is intended to be used with 6th through 8th grade students but the target is to reach students in the 6th grade.

Learning Content

This program is based on the Health Education Standards of Learning for Virginia Public Schools approved in 2020 by the VDOE. (*Health Education | Virginia Department of Education*, 2024) The standards we are using for this program are listed below.

6th Grade
Essential Health Concepts
6.1   The student will apply critical thinking skills and personal management strategies to address issues and concerns related to personal health and wellness.
        <u>Substance Abuse Prevention</u>
        b.Recognize social influences/influencers on both the reduction and promotion of the use of alcohol, tobacco, nicotine products, and other drugs.
        d.Explain the importance of accepting responsibility for personal actions to avoid risk-taking behaviors related to substance use.

Healthy Decisions
6.2 The student will describe the influence of family, peers, and media on personal health decisions.
<u>Substance Abuse Prevention</u>
e.Analyze family and peer pressure as influences on the use and nonuse of opioids, alcohol, tobacco, inhalants, and other drugs.

Advocacy and Health Promotion
6.3 The student will develop personal strategies and skills for personal, social, and community health
<u>Substance Abuse Prevention</u>
c.Describe the types of support available at school and in the community for substance use disorders.

7th Grade
Essential Health Concepts
7.1 The student will identify and explain essential health concepts to understand personal health.
l.Define prescriptions, controlled substances, nicotine vaping products, hemp, and marijuana-derived cannabidiol (CBD) products, and explain their uses.
Advocacy and Health Promotion
7.3 The student will promote healthy schools, families, and communities.
<u>Substance Abuse Prevention</u>
a) Identify ways to participate in school and community efforts to promote a drug-free lifestyle.
b) Create strategies to identify types of advertising techniques used in a variety of media, including social media that may influence adolescents' decisions concerning alcohol, tobacco and nicotine products, and other drugs.
c) Identify and demonstrate strategies and skills for avoiding alcohol, tobacco, inhalants, and other harmful substances (e.g., effective refusal skills).

8th Grade Standards
Essential Health Concepts
8.1 The student will identify and explain essential health concepts to demonstrate an understanding of personal health.
<u>Substance Abuse Prevention</u>
a) Describe the short- and long-term health issues and effects on the brain related to the use of alcohol, tobacco, nicotine products, and other drugs, including inhalants, marijuana, cocaine, stimulants, methamphetamines, opiates, steroids, and performance-enhancing drugs.

Healthy Decisions
8.2 The student will apply health concepts and skills to the management of personal and family health.
<u>Substance Abuse Prevention</u>
a) Analyze the social, economic, family and peer pressure influences on the use of tobacco, nicotine products (e.g., e-cigarettes), alcohol, marijuana, and other drugs.

The Virginia Standards of Learning for 6th through 8th graders varies a little on the subject but they do not require students to analyze influences until they are in 8th grade. We observed in the VYS 2023 report that there is a big jump from 6th grade to 7th grade with positive responses to the question of vaping. Therefore, there is a need for some type of prevention or intervention at an earlier age.

A recent article from the Journal of Drug Education classifies types of prevention interventions into 3 categories; universal, selective and indicated. Universal programs are designed to reach an entire school population, while selective interventions will target subgroups based on populations with higher risk factors. The third classification indicates prevention strategies that focus on specific individuals who have already begun using substances and are at risk for developing disorders related with substance abuse (Rosenthal, 2024). Referring to a previously mentioned article, Evidence Based Interventions for Preventing Substance Use Disorders in Adolescents, the team will create a universal program.

Learning Goals/Tasks

Upon completion of this program, students will be able to:

1. **Identify the health risks associated with vaping including brain and respiratory effects, and potential for addiction. (Bloom's Taxonomy: Analyze)**
2. **Describe different forms of family and peer pressure and its influence on personal decision-making regarding vaping. (Bloom's Taxonomy: Remember)**
3. **Compare marketing and media techniques aimed at middle school students concerning nicotine. (Bloom's Taxonomy: Understand)**
4. **Design a personal action plan with steps to resist vaping and make healthy choices. (Bloom's Taxonomy: Create)**

5. Demonstrate skills to confidently say no to vaping. (Bloom's Taxonomy: Apply)

Bloom's Taxonomy was used to develop the learning objectives for this educational program. According to Bloom's Taxonomy, there are three domains of learning – cognitive, affective, and psychomotor (Valiathan, 2024). The cognitive domain of learning categorizes learning goals into different levels of cognition, starting at lower levels of thinking (Remember, Understand, Apply) and progressing into higher levels of thinking (Analyze, Evaluate, Create) (Valiathan, 2024). For this program, the cognitive domain of learning was used to develop the learning objectives.

The first objective of identifying health risks will build a foundation for the learner to design their personal action plan. This will help the learner to develop a purpose and motivate them to complete the project. After investigating the risks, students are asked to discuss forms of family and peer pressure. Open discussions are intended to help the learner be aware of who and how people around them impact their perspectives. Once learners are aware of how people affect their decisions, they will be asked to investigate media and marketing strategies. Learners are asked to examine how these strategies also influence their choices. A culminating activity will be the 4th objective of designing a personal action plan along with demonstrating the skills described in that plan. After creating their own plans and showing how they will work, learners will have tools to help them say no to vaping. (Tomé et al., 2012)

Theoretical Framework

When our team looked at theoretical frameworks, we kept coming back to the principles of constructivism. This is a learning theory that suggests we are actively constructing knowledge and understanding and not just passively receiving information. We liked that it emphasized the importance of personal experience and reflection during the learning process.

With constructivism, learners are actively participating and are not passive participants. An important part of the process is social interaction through discussions and collaborative activities. It values prior experiences and beliefs and asks the learner to reflect in order to create new insights. This means our program will be a learner-centered approach with group work, discussion and authentic assessments. Enabling students to process the information and design their own plan will help them follow through effectively (Ertmer, 2018). Constructivism fits in well with the generative learning strategies chosen because it is encouraging learners to expand their understanding through the engagement with the materials.

The activities planned include a variety of strategies to help engage learners. They are designed to motivate learners to participate and to create an atmosphere of trust that students can rely on in the future. The intent that students will learn the content together and to use their new skills together.

Development Plan

The plan for this course includes generative learning strategies, activities, and technologies for students to achieve learning objectives. Each objective also includes an assessment to evaluate the students' learning and understanding.

Initially, students will need to interact with resources that explain what the risks and other health factors are with vaping. The first part of this program is to put students into small groups with an adult. Each group will meet for 15-20 minutes 3-5 times. They will watch a video and then have a discussion about what they watched. By interacting with their peers through discussion, students will reinforce concepts shown and hopefully remember. The following recommended videos are all taken from the PBS website which allows VA Educators to sign up for a free account.

Recommended Videos to Watch in Small Groups:

Taken from PBS: KNOW VAPE: The Dangers of Youth Vaping (*Know Vape, Nic Sick: The Dangers of Youth Vaping | PBS LearningMedia*, 2023)

Shape Your Understanding of Vapes
Effects of Vaping
Digital Escape
Easy to Start, Hard to Quit

By creating small groups to have these discussions, students will be given time to understand what the issues are with vaping so that they can complete the following activities.

Objective 1. Identify the health risks associated with vaping including brain and respiratory effects, and potential for addiction. (Bloom's Taxonomy: Analyze)

Unhealthy Snapshots (Generative Learning Strategies: Visual Learning, Self Explanation)

In this activity, students will use images to create infographics illustrating the harmful effects of vaping on the body to go along with a Visual Learning strategy. This could be images of damaged lungs or brain scans of adolescents who vape. Students will make either physical posters to hang up or slides to add to a school news feed to educate about the dangers of vaping. Both of these activities will require use of creative commons images but could also be illustrated by the student. There should also be some text with facts that go along with their images to support the strategy of Self Explanation. The facts or statements should be in their own words so students are synthesizing what they have learned. Students may use a computer or cell phone to create their infographic using Adobe, Google or whatever website they are most comfortable using. They could also take photos and adjust the image using their phone apps. Instructors will assess student understanding by reviewing their presentations. Each school will set this activity up differently to fit their needs but it is good to leave both options open and to keep posterboard, markers and paint available. The following are examples of a poster and a meme along with a rubric that may be adjusted.

Example Meme from Creative Action & students at Anderson High School, Austin TX (Berry, 2019)
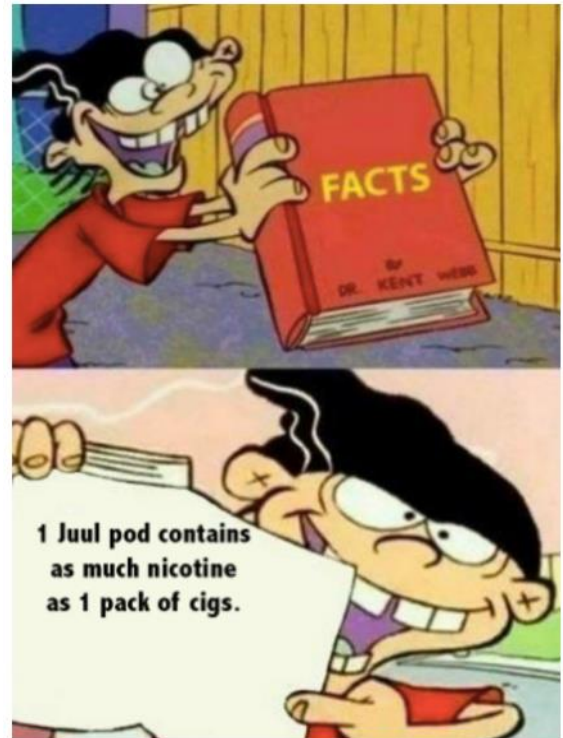
Example of Poster Project at Tulalip Reserve in Washington.(Kalliber, 2023)

Suggested Rubric:

	Excellent (4)	Proficient (3)	Developing (2)	Beginning (1)
Infographic Content	Includes more than one graphic and multiple facts.	Includes more than one graphic or multiple facts.	Includes either graphics or facts. OR Includes only 1 graphic and 1 fact.	Includes only a graphic or a fact.
Content Accuracy	Information is accurate, relevant, and comprehensive	Information is accurate and relevant, but may lack some detail.	Information is somewhat accurate but may contain minor errors.	Information is inaccurate or irrelevant.
Visual Appeal	Infographic is visually appealing, well organized, and easy to understand.	Infographic is visually appealing and well organized, but may lack some visual elements.	Infographic is somewhat visually appealing but may be disorganized or difficult to understand.	Infographic is not visually appealing and is disorganized.
Creativity & Originality	Infographic demonstrates creativity and originality in the use of images, layout, and design.	Infographic demonstrates some creativity and originality in the use of images and layout	Infographic lacks creativity and originality in the use of images and layout.	Infographic is unoriginal and lacks creativity.
Impact & Persuasiveness	The infographic is impactful and persuasive, effectively conveying the dangers of vaping. It uses strong visuals and compelling language to engage the audience.	The infographic is somewhat impactful and persuasive, but may lack some elements of persuasion.	The infographic is minimally impactful and persuasive, and may not effectively convey the dangers of vaping.	The infographic is not impactful or persuasive and fails to convey the dangers of vaping.

Objective 2: Describe different forms of family and peer pressure and its influence on

personal decision-making. (Bloom's Taxonomy: Remember)

Case Studies (Generative Strategies: Case Study Analysis, Peer to Peer Learning)

Students will be put into groups to review case studies. They will be used to help students learn

how to identify types of peer pressure and potential consequences of different decisions. For the

assessment of this learning objective, students will list factors that influenced decision making in

each case and suggest alternative choices individuals in the case study could have made to resist

peer pressure or negative influences and lead to better outcomes. The following Scenarios were

created by Gemini AI and can either be printed on paper or be reenacted by students on a Flipgrid or a slide deck.

Scenario 1: The Popular Crowd

Scenario:

- **Setting:** School hallway between classes
- **Characters:**
    - You
    - Popular kid in your grade
- **Situation:**
    - The popular kid offers you a vape, saying, "Come on, everyone's doing it. It's no big deal."

Possible Responses:

1. **Direct Refusal:** "No thanks, I'm good. I don't want to vape."
2. **Question Their Motives:** "Why are you offering me this? Don't you know it's bad for you?"
3. **Change the Subject:** "Hey, did you hear about the new game that just came out?"
4. **Walk Away:** Simply turn and walk away without saying a word.

Scenario 2: The Close Friend

Scenario:

- **Setting:** Your friend's house
- **Characters:**
    - You
    - Your close friend
- **Situation:**
    - Your friend pulls out a vape and asks if you want to try it, saying, "We can do it together, it'll be fun."

Possible Responses:

1. **Express Your Discomfort:** "I'm not comfortable with that. I don't want to vape."
2. **Suggest an Alternative Activity:** "Let's play a video game or watch a movie instead."
3. **Talk to a Trusted Adult:** "I'm worried about you. Maybe we should talk to a parent or counselor about this."

Scenario 3: The Online Influencer

Scenario:

- **Setting:** Your bedroom
- **Characters:**
    - You
    - Your favorite social media influencer
- **Situation:**
    - You're watching a video of your favorite influencer vaping and saying how cool it is.

Possible Responses:

1. **Reality Check:** Remember that influencers are paid to promote products, even if they don't personally believe in them.
2. **Seek Information:** Research the negative effects of vaping online.
3. **Talk to a Trusted Adult:** Discuss your concerns about the influencer's behavior with a parent or guardian.

Scenario 4: The Family Member

Scenario:

- **Setting:** A family gathering
- **Characters:**
    - You
    - A relative who vapes
- **Situation:**
    - A relative offers you a vape, saying, "Just try it, it's not a big deal."

Possible Responses:

1. **Polite Refusal:** "No, thank you. I'm good."
2. **Educate Them:** "I've heard that vaping can be harmful to your health. It's not worth the risk."
3. **Change the Subject:** "Hey, did you see that new [TV show, movie, sports game]?"

The formative for this activity is to list as many possible responses as they can in their groups for each scenario. By working in groups to learn from each other, the constructivist theories are being employed.

Objective 3: Compare marketing and media techniques aimed at middle school students concerning nicotine. (Bloom's Taxonomy: Understand)

Quiz Show (Generative Learning Strategies: Media Analysis, Critical Thinking & Peer to Peer Learning)

To start off this session, students will begin by watching a video on how JUUL hooked kids (How JUUL Got Millions of Kids Hooked on Nicotine) (BC Productions, 2022) Each group will be given copies of the American Lung Association's article on advertising strategies used. (American Lung Association, 2024) Students will be given different forms of media including advertisements, social media posts and other media content that promotes vaping. Students will be encouraged to think critically about the information they encounter. They will be asked to consider, "Who is the target audience?", "What are the hidden messages?", and "Why might this message be appealing to a middle school student?" Students will work in groups to create a 5 question quiz show using kahoot, blooket, or another quiz game. The questions will require students to identify persuasive techniques or evaluate credibility of information.

Examples of possible advertisements from the American Lung Association's article:

This following created by the rubric generator on Magic School AI can be used to grade the quiz shows.

Media Literacy: Nicotine Marketing Awareness Quiz Project Rubric

Criteria	3 Points	2 Points	1 Point
Content Accuracy	All 5 quiz questions accurately identify specific marketing techniques targeting middle school students about nicotine products	3-4 questions correctly address marketing techniques	Fewer than 3 questions demonstrate understanding of marketing techniques
Persuasive Technique Identification	Demonstrates deep understanding of multiple persuasive techniques (emotional appeal, peer pressure, false claims) in nicotine advertisements	Identifies 2-3 persuasive techniques with moderate depth	Minimal or superficial identification of marketing strategies
Source Credibility Assessment	Critically evaluates advertisement sources with sophisticated reasoning about potential bias and misinformation	Provides basic evaluation of source credibility	Limited or unclear assessment of information sources
Quiz Game Design	Professionally designed interactive quiz using Kahoot/Blooket with engaging visuals and clear instructions	Functional quiz with some design elements	Basic quiz with minimal design effort
Group Collaboration	All team members contribute equally, with clear evidence of shared workload and collaborative planning	Most team members participate actively	Minimal team collaboration or uneven contribution

Scoring Guide:

- Total Possible Points: 15

- 13-15 Points: Exceeds Expectations

- 10-12 Points: Meets Expectations

- 7-9 Points: Approaching Expectations

- Below 7 Points: Needs Significant Improvement

Note to Teachers: This rubric is designed to help students critically analyze media techniques related to nicotine marketing while developing digital literacy skills.

Objective 4: Design a personal action plan with steps to resist vaping and make healthy choices. (Bloom's Taxonomy: Create)

Inner Circles (Generative Learning Strategies: Social Support, Concept Mapping):

Students will be given a brainstorming concept map. With the concept map, students will identify specific friends, family members, and other adults who are supportive and can help them stay on track with their commitment to making healthy choices. With each person, students will explain how that person can help them with resisting vaping.

The assessment for this would be just for completeness. This is a very personal activity, so each student will have different answers.

Family

Friends

My Inner Circle

Teachers

Trusted Adults
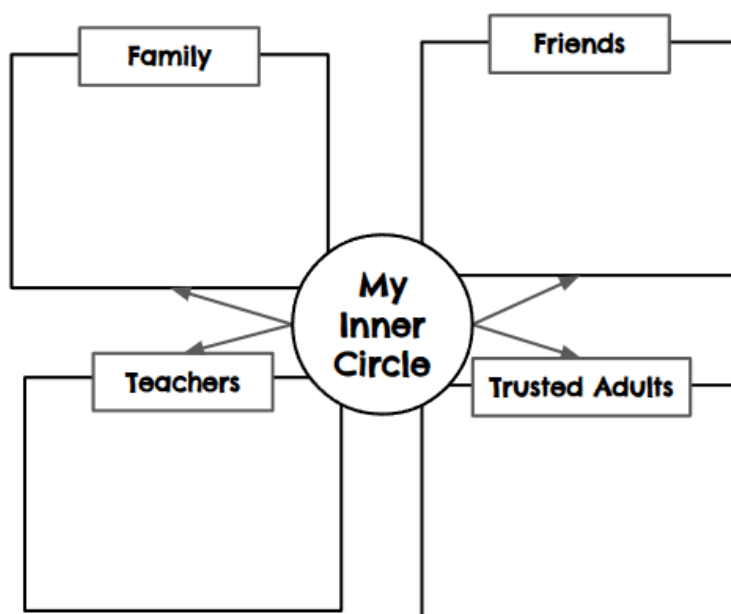
Pick 2-3 people in your inner circle and explain how they can help!

I Can Statements (Generative Learning Strategies: Goal Setting)

Students will be encouraged to set goals using conditional statements such as, "I will stay away from vaping so I can keep school rules and be on the soccer team," or "I will not vape so I can keep my lungs strong for singing in the choir." Students will then segment their larger goal into smaller, more manageable steps using smart goals. Assessing the student product can be based on responding to each of the steps of a SMART goal. Further assessment will be in the next activity.

"I Can" Presentations (Generative Learning Strategies: public speaking)

Students will create a meme of themselves with their "I Can Statement" to hang up with their Inner Circle lists. Both of these are meant to be visual reminders and encouragement to keep their goals. They will present their meme along with a short speech on the importance of their goals on Flipgrid. They should also include 3 "rejection lines" they can give to someone pressuring them to vape.   The following is a rubric created with Magic School AI to help assess.

Goal Setting Meme Creation Rubric for 6th Grade

Criteria	3 Points	2 Points	1 Point
Goal Statement Clarity	Goal is specific, realistic, and uses a clear conditional statement demonstrating personal motivation	Goal is somewhat clear but lacks specific details or precise language	Goal is vague or unclear, with minimal connection to personal motivation
Meme Creativity	Meme is original, visually engaging, and directly relates to the goal statement with appropriate humor	Meme shows some creativity but may not fully connect to the goal statement	Meme lacks creativity and minimal effort is evident
Personal Relevance	Demonstrates deep reflection on personal growth, showing mature understanding of goal setting	Shows some personal reflection but lacks depth	Minimal personal connection to the goal is evident
Grammar and Presentation	Error-free text, professional appearance, and clean design	Minor grammatical or spelling errors present	Multiple grammatical errors or sloppy presentation
Conditional Statement Quality	Uses sophisticated conditional language showing clear cause and effect (e.g., "I will avoid vaping so I can maintain my vocal strength for choir")	Uses basic conditional language with some connection to personal goals	Conditional statement is weak or ineffective

Total Possible Score: 15 points

Objective 5. Demonstrate skills to confidently say no to vaping. (Bloom's Taxonomy: Apply)

Pièce de Résistance (Generative Learning Strategies: Scenario Analysis, Peer Support Groups,

Role Playing)

Students will be put into small groups (3-5 students per group) to discuss their activities from Objective 4. Each group will create a skit based on 1-2 of their members' I Can Statements. The skit should include different scenarios that the student encounters where they use their "rejection lines". The skits will include encounters with a mix of peers and adults. The following is a rubric created by Magic School AI.

Vape Prevention Skit Rubric: Rejection Lines and Goal-Setting Performance

Criteria	3 Points (Excellent)	2 Points (Developing)	1 Point (Needs Improvement)
Goal Statement Relevance	Clearly articulates personal health goals with specific, meaningful details directly related to avoiding vaping	Presents a goal statement with some connection to personal health choices	Goal statement is vague or lacks clear connection to personal health
Rejection Line Effectiveness	Demonstrates multiple creative, confident, and age-appropriate ways to refuse vape offers with clear communication skills	Uses basic rejection strategies with moderate confidence	Struggles to articulate clear rejection of vape offers
Scenario Diversity	Includes 3-4 distinct social scenarios showing different contexts where vaping might be encountered	Presents 2 different scenarios with some variation	Only demonstrates one scenario or lacks realistic social context
Skit Presentation	Shows excellent teamwork, clear dialogue, and engaging performance with confident delivery	Demonstrates basic teamwork and communication with some hesitation	Limited collaboration and unclear presentation of content
Health Knowledge	Incorporates accurate, detailed information about vaping risks and personal health consequences	Includes some basic information about vaping risks	Minimal or inaccurate information about vaping health impacts

Scoring Guide:
- Total Points: 15
- 13-15 Points: Excellent
- 10-12 Points: Proficient
- 7-9 Points: Developing
- 0-6 Points: Needs Significant Improvement

Note to Teachers: Assess student performances holistically, considering their developmental stage and personal growth in making healthy choices.

Implementation

Some effective ways to implement a program for middle school students are fact-based education, skill-building workshops, peer leadership programs, interactive activities and games as well as collaborating with parents and the community. For this middle school program to be successful, various implementation strategies will be used as listed above with the objectives. These strategies include self reflection and group discussions as well as public speaking. The different activities have been planned to include various delivery strategies to help reach a larger community of students. The message of the program will remain consistent throughout all phases of implementation and will be reinforced through repetition. Students will set and discuss their goals and create skits to demonstrate their skills to say no to vaping in real-life scenarios (Liu et al., 2022).

Group Leaders - Each implementation of this program will depend upon the Program Managers & Group Leaders. These are the adults working with the students. Group leaders will need to feel comfortable leading discussions. The following is a list of videos recommended for Group Leaders to watch and discuss with each other before presenting to the students. The authors recommend meeting 3-5 times prior to meeting with students to review and discuss videos.

Videos for Group Leaders to Discuss from the CDC: (CDC, 2024)

(https://www.cdc.gov/tobacco/e-cigarettes/empower-vape-free-youth-campaign.html)

Educators: Get the Facts on Youth Vaping.
Educators: What Are the Risks of Vaping for Youth?
Educators: Talk to Your Students about Vaping
Educators: Understand the Mental Health Effects of Youth Vaping
Videos on Starting a dialogue with students about vaping

Challenges

One significant challenge and risk of this program is its unpredictability, since it involves people, and people can be unpredictable. The target audience for this program is middle school students, who require constant supervision to stay focused and engaged. Therefore, it is crucial that middle school students are never left alone without an adult present.

Supporting emotional needs may be another challenge of this program. This program encourages learners to be open and honest, which can make them feel vulnerable. To address this, it is essential to have adults with training in counseling available at all times to support and care for the students' emotional needs (Hanover, 2018). These trained adults can help create a safe and supportive environment where students feel comfortable sharing their thoughts and experiences (Hanover, 2018).

Another aspect that could be a challenge is learner engagement. Again, people are not all the same, so there will be different levels of openness and buy in. It is important for adults to guide students in the right direction to help them stay focused but also to draw in those who don't want to participate (Hanover, 2018). Even with the support of the adults involved, there will be participants that are hesitant to be transparent.

During this highly collaborative program, it is necessary to ensure that everyone has equal opportunities to contribute and feel like their voices are heard. This can be challenging with adolescents not wanting to state opinions as well as those who are not afraid to share their thoughts. There are also some who are more comfortable with "stealing the show" or will talk over others they don't agree with. This is another reason why adults must be a part of the program to foster a more equal environment (Liu et al., 2022).

For the human aspect, there could be conflicts of interests for the learner. It is very possible they know a peer or an adult close to them that is already vaping. There are different expectations for how a child should interact with adults. It may be difficult to discuss or say no because the adult relationship already established will not support the objectives of this program.

As with any program, there is the risk that images, infographics, advertisements and other media could be copyrighted. Often, making copies of these items could be illegal. This can be addressed by using copyrights labeled for general or educational use by creative commons. The program will have a website where preferred resources can be obtained to give program managers curated resources that will not violate copyright laws.

Ethical considerations for this program are paramount. Maintaining confidentiality and obtaining informed consent from both students and parents are essential. Additionally, the program must be mindful of potential conflicts of interest, especially if students have relationships with individuals involved in vaping.

Evaluation

The last step in Smith & Rogan's instructional design model is evaluation with revisions (Raible, 2020). This program will be changing as the state standards change and as pop culture evolves. Assessments will be taken through surveys, program manager feedback, student self assessments and follow up studies by the Virginia Department of Health. These include both formative assessments during program implementation and summative assessment over time to see if the program is having a positive impact on students. Formative assessments should be set by Program Managers based on their student learner needs. A smaller, close knit community will have different needs than a larger school in an urban setting. A summative evaluation will be conducted at least once a year to ensure resources are still viable and to make necessary revisions to current curriculum. Additionally, the evaluation will look at the assessments to determine if changes need to be made or additional curriculum resources needed.

1. **Surveys**

Program Managers and participants will take a quick survey online before starting and after finishing the program each school year. These surveys will be anonymous and will only

require the program ID number given to the program manager each time they use the program. The surveys will consist of similar questions as the "Youth At Risk" survey (*Virginia Youth Survey*, 2024) and should be no more than 5-7 questions.   The grant for the VDH program requires the survey be given every odd year to a random number of middle and high schools in Virginia. This initiative, however, will be evaluated from year to year to ensure its effectiveness. The pre-program survey will include an open-ended question asking "What are your expectations for this program?" The post-program survey will include an open-ended question asking "How will you use this program in the future?"

2. Program Manager Feedback

On the website for this program, there will be a section for program managers to make suggestions and provide feedback. This will allow for program revisions to be completed quickly if needed. Feedback can be as simple as identifying gaps in the program or suggestions to improve activities. Program managers will have valuable insight due to their hands-on experience with the program and their direct interactions with students. Their feedback can highlight practical challenges and opportunities for improvement that may not be apparent to the program's designers.

3. Student Self Assessments

Finally, it is important to include time for self-reflection for students. Self-reflection allows students to internalize what they have learned and understand how the program has impacted them personally. By reflecting on their experiences, students can identify the skills they have developed, the knowledge they have gained, and the changes in their attitudes or behaviors. This process will help them see the tangible benefits of their participation and reinforce the program's importance and effectiveness.

Self-reflection will also empower students to become advocates for the program. When students understand and appreciate the value of the program, they are more likely to share their positive experiences with peers, parents, and the community.

Additionally, the self-reflections can help Program Managers individualize their interventions. As stated previously, Rosenthal wrote that there are 3 types of prevention interventions: universal, selective, and indicated (Rosenthal, 2024). In general, this initiative is a universal program because it is meant to be the initial discussion. From the self reflection, Program Managers can address selective and indicated programs for targeted groups and individuals.

References

American Lung Association. (2024). *9 Strategies Big Tobacco Uses to Addict Kids to E-Cigarettes*.

Lung.org; https://www.lung.org/research/sotc/by-the-numbers/8-things-industry-ecigs

BC Productions. (2022, December 16). *How JUUL Got Millions of Kids Hooked on Nicotine*. YouTube. https://www.youtube.com/watch?v=7fVxHavnih4

Becker, T. D., & Rice, T. R. (2021). Youth vaping: A review and update on global epidemiology, physical and behavioral health risks, and clinical considerations. *European Journal of Pediatrics, 181*(3), 453-462. https://doi.org/10.1007/s00431-021-04220-x.

Berry, C. (2019, July 10). *Using Memes as a 21st Century Research Tool | Creative Action*. Creative Action. https://creativeaction.org/ca-blog/memes-21st-century-research-tool/

Burchfield, K., Doyle, D., Mantey, D., Bennett, T., & Baus, A. (2024). The CATCH My Breath Vaping Prevention Curriculum: An Evaluation of Impacts in Central Appalachian Middle and High Schools, 2019-2023. *Journal of Primary Care & Community Health*, *15*. https://doi.org/10.1177/21501319241277393.

CDC. (2024, November 14). *Empower Vape-Free Youth Campaign*. Smoking and Tobacco Use. https://www.cdc.gov/tobacco/e-cigarettes/empower-vape-free-youth-campaign.html

Cullen, K. A. (2024). *Notes from the Field:* E-Cigarette and Nicotine Pouch Use Among Middle and High School Students — United States, 2024. *MMWR Morbidity and Mortality Weekly Report*, *73*(35), 774–778. https://doi.org/10.15585/mmwr.mm7335a3.

Ertmer, P. A., & Newby, T. (2018). Behaviorism, Cognitivism, Constructivism: Comparing Critical Features From an Instructional Design Perspective. Foundations of Learning and Instructional Design Technology: Historical Roots and Current Trends. https://edtechbooks.org/lidtfoundations/behaviorism_cognitivism_constructivism

Fiorella, L., & Mayer, R. E. (2015). Eight ways to promote generative learning. *Educational Psychology Review, 28*(4), 717–741. https://doi.org/10.1007/s10648-015-9348-9.

Griffin, K. W., & Botvin, G. J. (2010). Evidence-Based Interventions for Preventing Substance Use Disorders in Adolescents. *Child and Adolescent Psychiatric Clinics of North America, 19*(3), 505–526. https://doi.org/10.1016/j.chc.2010.03.005.

Hanover Research. (2018). *Best practices for improving middle schools*. Connecticut State Department of Education. https://portal.ct.gov/-/media/sde/essa-evidence-guides/best_practices_for_improving_middle_schools.pdf.

Harrop, E., & Catalano, R. F. (2016). Evidence-Based Prevention for Adolescent Substance Use. *Child and Adolescent Psychiatric Clinics of North America, 25*(3), 387–410. https://doi.org/10.1016/j.chc.2016.03.001.

Health Education | Virginia Department of Education. (2024). Virginia.gov. https://www.doe.virginia.gov/teaching-learning-assessment/instruction/health-education

Helena J.V. Rutherford, Mayes, L. C., & Potenza, M. N. (2010). Neurobiology of Adolescent Substance Use Disorders: Implications for Prevention and Treatment. *Child and Adolescent Psychiatric Clinics of North America, 19*(3), 479–492. https://doi.org/10.1016/j.chc.2010.03.003.

Irusa, K., White, R., & Finkelman, M. (2024). A comparison of the caries risk between patients who use vapes or e-cigarettes and those who use conventional cigarettes: A cross-sectional study. Journal of Dental Sciences and Education, 2(1), 1-5. https://doi.org/10.51271/JDSE-0024.

Jones, K., & Salzman, G. A. (2020). The vaping epidemic in adolescents. *Missouri Medicine, 117*(1), 56-58. https://doi.org/10.1234/mm.2020.56789.

Kalliber, K. (2023, April 19). *Smoke Signals: Local teens use creativity to combat vaping - Tulalip News*. Tulalip News. https://www.tulalipnews.com/2023/04/19/smoke-signals-local-teens-use-creativity-to-combat-vaping/

Know Vape, Nic Sick: The Dangers of Youth Vaping | PBS LearningMedia. (2023). PBS

 LearningMedia. https://virginia.pbslearningmedia.org/collection/know-vape/

Lippert, A. M., Corsi, D. J., & Venechuk, G. E. (2019). Schools influence adolescent e-cigarette

 use, but when? *Journal of Youth and Adolescence, 48*(10), 2038-2051.

 https://doi.org/10.1007/s10964-019-01106-y.

Liu, Jessica et al. "School-based programs to prevent adolescent e-cigarette use: A report card."

 Current problems in pediatric and adolescent health care vol. 52,6 (2022): 101204.

 doi:10.1016/j.cppeds.2022.101204

Liu, J., Shivani Mathur Gaiha, & Halpern-Felsher, B. (2020). A Breath of Knowledge:

 Overview of Current Adolescent E-cigarette Prevention and Cessation Programs. *Current*

 Addiction Reports, *7*(4), 520–532. https://doi.org/10.1007/s40429-020-00345-5

Park-Lee, E., Jamal, A., Cowan, H., Sawdey, M. D., Cooper, M. R., Birdsey, J., West, A., &

 Raible, J. (2020). Instructional Design Models. Pressbooks.pub.

 https://pressbooks.pub/itec51602/chapter/instructional-design-models-v2/.

Rosenthal, S. R. (2024). Project SUCCESS: Youth Substance use and Mental Health -

 Samantha R. Rosenthal, Katherine J. Roberts, Samantha K. Borden, 2024.

 Journal of Drug Education.

 https://journals.sagepub.com/doi/10.1177/00472379241285522#body-ref-bibr6-

 00472379241285522

Rutherford, H. J. V., Mayes, L. C., & Potenza, M. N. (2010). Neurobiology of Adolescent

 Substance Use Disorders: Implications for Prevention and Treatment. Child and

 Adolescent Psychiatric Clinics of North America, 19(3), 479–492.

 https://doi.org/10.1016/j.chc.2010.03.003

Smith, P. L., & Ragan, T. J. (2005). Instructional Design (3rd ed..). J. Wiley & Sons.

Tomé, G., Matos, M., Simões, C., Diniz, J. A., & Camacho, I. (2012). How Can Peer Group

Influence the Behavior of Adolescents: Explanatory Model. *Global Journal of Health*

Science, *4*(2). https://doi.org/10.5539/gjhs.v4n2p26

Virginia Middle School Survey Detail Tables -Weighted Data. (n.d.). Retrieved October

14, 2024, from

https://www.vdh.virginia.gov/content/uploads/sites/69/2024/08/2023VAM-Detail-Tables.df

Valiathan, P. (2024). Bloom's taxonomy. In *Foundations of Learning* (pp. 75-88). EdTech Books.