ANIMAL DISSECTION & ITS IMPACT ON CLASSROOM MANAGEMENT

Austin Pronovost, Master In Teaching (Secondary Science with Chemistry Endorsement)

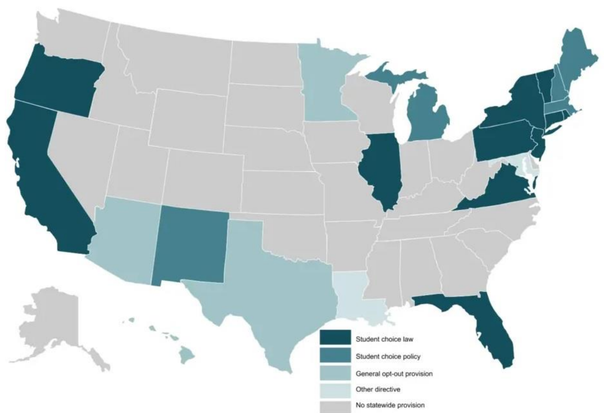
WASHINGTON STATE UNIVERSITY

TPEP Alignment [Criterion 5]:
The teacher candidate fosters and manages a safe and positive learning environment using a variety of classroom management strategies that takes into account the cultural, physical, emotional and intellectual well-being of students appropriate to their grade level.

I. INTRODUCTION

Animal dissection has had a significant role in science education for nearly a century (Osenowski et al, 2015). However, the 1990's saw a surge of surveys of student attitudes toward the use of animal dissection in education.

60% **OF U.S. STUDENTS** report feeling a sense of discomfort when conducting in-class animal dissections (Balcombe, 1997).



22 of the 50 states have adopted opt-out policies, allowing students to refuse to dissect animals as part of their science education.

And yet, only **3-5%** **OF THESE STUDENTS** request to opt out of or use an alternative to dissection. (Balcombe, 1995)

According to this data, though many students are uncomfortable with the thought of dissecting a dead animal, most are prone to say nothing rather than admit their concerns or whatever causes them uneasiness.

This greatly affects the ability for a science teacher to manage a classroom, specifically the ability to create a positive learning environment where every student feels safe – **physically**, **emotionally**, and **ethically**.

> ***"The main reason for [such few student objections] is that many schoolteachers and administrators unwittingly foster an atmosphere that is not open to ethical concerns from students regarding dissection."***
>
> *~ Jonathan Balcombe, U.S. Humane Society*

II. BENEFITS OF ANIMAL DISSECTION

LEARNING FROM YOUR BODY

Tangible & hands-on.

Helps students build understanding for themselves.

FUEL TO PROPEL PASSION

70% of science teachers believe that animal dissection is the primary tool that encourages passion for biology. *(Oakley, 2012)*

III. DRAWBACKS TO ANIMAL DISSECTION

EMOTIONAL NEGATIVITY

Fear, disgust, and anxiety negatively affect student interest and ability to learn. *(Randler et al, 2016)*

SAFETY CONCERNS

Dangerous chemical preservatives threaten classroom health. *(Oakley, 2012)*

RELIGIOUS CONFLICT

For some students, dissection violates values, which may lead to suppressed cultural identity. *(Akpan, 1999)*

IV. STUDENT RESPONSES

Student accounts of animal dissection portray negative outlooks on the lesson.

> ***"My grades would suffer if I opted out."***
>
> *"The teacher kept quiet about an alternative."*
>
> *"We didn't know that there was an alternative."*
>
> ***"I was pressured into completing it."***
>
> (Oakley, 2013)

Negative outlooks negatively affect cognitive process, thus weighing down the learning environment by making it **feel far less safe and far less positive.**

V. TRADITIONAL SCI-ED VS. CONSTRUCTIVISM

Traditional science education is defined by:

> ***unquestionable knowledge,***
> ***objectively correct answers,***
> ***correct/incorrect interpretations,***
> ***and necessary experimentation.***
>
> (Carr, p. 161)

Constructivist learning theory states that learners must take responsibility for building knowledge for themselves, rather than being bound by certain "rules" of how to learn.

Researchers argue that dissection does not encourage this active learning. Rather, students merely learn to know instead of learning how to learn in the process (Balcombe, 2001).

VI. EFFECTIVENESS OF ALTERNATIVES

Digital alternatives to animal dissection are becoming more available to schools that allow them, and research has shown that they come with notable advantages to in-class dissection.

Digital dissection **aligns with the Next Generation Science Standards** (NGSS). (Quellmalz et al, 2012)

Students **enjoy computer-based learning** far more than any other learning method. (Balcombe, 2001)

Digital dissections are far **more affordable** than resources for a real dissection. (Balcombe, 2001)

VII. ACTION

Given that there are sound defenses for and against animal dissection and its impact on student learning, researchers speculate that it will continue to coexist with alternative practices in the future (Bílek, 2018).

Thus, as educators seeking to prioritize the well-being of our students, we can:

1 *- Have a thorough understanding of state policies.*

2 *- Appeal to districts for dissection alternatives.*

3 *- Advocate for student health, safety, & learning.*

4 *- Create a toolbox of dissection alternatives.*

DISSECTION ALTERNATIVE TOOLBOX

Virtual Pig Dissection by Whitman College

"Froggy" Dissection Kit by Berkeley Lab

Orthopteran Dissection by Iowa State

3D Clam Dissection by InterNICHE

BIBLIOGRAPHY