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Inclusive Curriculum: Making STEM Accessible for ALL Students

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Iowa Safe Schools'

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Inclusive Curriculum: Making STEM Accessible for ALL Students

Mark Busch
He / Him / His
Director of Education
About Iowa Safe Schools

Midwest’s Leading LGBTQ Youth Organization

- Policy and Advocacy
- Educator Professional Development
- Youth Engagement and Advocacy
More than **70 percent** report feelings of worthlessness and hopelessness in the past week\(^1\)

**Sixty-seven percent** report that they’ve heard family members make negative comments about LGBTQ people\(^1\)

LGB youth seriously contemplate suicide at almost **three times** the rate of heterosexual youth.\(^2\)

**40%** of transgender adults reported having made a suicide attempt. **92%** of these individuals reported having attempted suicide before the age of 25.\(^3\)

Each episode of LGBT victimization, such as physical or verbal harassment or abuse, increases the likelihood of self-harming behavior by 2.5 times on average.\(^4\)

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School Environments

- 57.6% of LGBTQ students felt unsafe at school\(^1\)
- Over a third avoided bathrooms and locker rooms due to safety concerns\(^1\)
- 85.2% were verbally harassed, and 27.0% were physically harassed\(^1\)
- 50.9% of transgender students reported being prevented from using their name or pronouns\(^2\)

75.2% of LGBTQ students in schools with an inclusive curriculum said their peers were accepting of LGBTQ people, compared to 39.6% of those without an inclusive curriculum.

National School Climate Survey, GLSEN (2015)
From Teasing to Torment: School Climate Revisited, A Survey of U.S. Secondary School Students and Teachers. New York: GLSEN.
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Reflecting on the Snowflake Activity

- What were you thinking as we went through this activity?
- How did you feel as you were going through this activity?
When Developing an Inclusive Classroom

- There is no one right way for a student to answer a question.
- There is no one right way for a teacher to teach a concept.
Starting with Ourselves: Privilege

- Remember that you are not a neutral participant in your classroom[1]

- Privilege is “a set of unearned benefits given to people who fit into a specific social group.”[2]

1. Privilege is the other side of oppression.
2. We need to understand privilege in the context of power systems.
3. Privileges and oppressions affect each other, but they don’t negate each other.
4. Privilege describes what everyone should experience.
5. Privilege doesn’t mean you didn’t work hard.

Starting with Ourselves: Privilege

Privilege Associated with Being Heterosexual:[2]

- Expressing affection in most social situations without hostile or violent reactions
- Having role models of your gender and sexual orientation talked about in class
- Expressing your gender and sexual orientation without hostile or violent reactions
- Not worrying about being the only one representing your sexuality in a given situation.
- Sharing health, auto, and homeowners’ insurance policies at reduced rates.

Starting with Ourselves: Privilege

1. How does privilege manifest itself in science?
2. How can privilege manifest itself in district policies and procedures?
3. How can privilege manifest itself in the curricular resources I select?
4. How can privilege manifest itself in the classroom discussions I have with students?
5. How can privilege manifest itself in the individual interactions I have with a student?
Four Approaches to Multicultural Education Reform[1]

#1 Contributions Approach

- Including ethnic heroes into curriculum
- Overall curriculum does not change
- Easiest approach
- Students do not gain an overall understanding of social justice

Four Approaches to Multicultural Education Reform[1]

#2 Ethnic Additive Approach

- Adding content, concepts, themes without changing overall curriculum
- Views content from mainstream lens
- Fails to view from different cultural lenses.

Four Approaches to Multicultural Education Reform[1]

#3 Transformative Approach

- Views content from several points of view
- Studying conflicting views and divergent perspectives

Four Approaches to Multicultural Education Reform[1]

#4 Social Action Approach

- Same as Transformative Approach, but requires students to make decisions and take action.
- Critical thinking and problem solving.
- Develops political efficacy and social justice.

Four Approaches to Multicultural Education Reform[1]

Approaches:
#1 Contributions
#2 Ethnic Additive
#3 Transformative
#4 Social Action

1. Where does your curriculum land?
2. Where would you like your curriculum to be?
3. What challenges/barriers exist?
4. What is required of me as a teacher to do this?

Societal Issues in the Classroom

- Chemistry in the Community organizes topics by societal issues
- Spirals topics throughout text
How can phenomenon drive social justice?

- **HS-ETS1-1** Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.

- **HS-ETS1-2** Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.

- **HS-ETS1-3** Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics as well as possible social, cultural, and environmental impacts.

- **HS-ETS1-4** Use a computer simulation to model the impact of proposed solutions to a complex real-world problem with numerous criteria and constraints on interactions within and between systems relevant to the problem.
This is where social justice starts.
Science Curriculum As Facilitator of Social Change

**Nuclear Warfare:** Why are nuclear bombs more powerful than chemical-based bombs (like TNT)?

**HS-PS1-8** Develop models to illustrate the changes in the composition of the nucleus of the atom and the energy released during the processes of fission, fusion, and radioactive decay.
Science Curriculum As Facilitator of Social Change

**Flint Water Crisis:** What caused the lead in the pipes to leach out of the water?

**HS-PS1-5** - Apply scientific principles and evidence to provide an explanation about the effects of changing the temperature or concentration of the reacting particles on the rate at which a reaction occurs.

**HS-PS1-6** - Refine the design of a chemical system by specifying a change in conditions that would produce increased amounts of products at equilibrium.
Laying the Foundation

- Allow students to share how they relate to the material without the burden of representing an entire culture
- Avoid Tokenism
- Be prepared to offer background information on the material being discussed
Creating An Inclusive Learning Environment

- Safe Space Stickers and Flags
- Use gender-neutral forms and surveys
- Use gender pronouns in syllabi, email signatures, name badges, etc.
- Hang posters of individuals from multiple identities, including those for underrepresented populations
Learning About Inclusive Classrooms

Safe Schools Academy

- 31 Inclusive Professional Development Courses
- Online and In-Person
- License Renewal Credit
- Graduate Credit
About Iowa Safe Schools
Midwest’s Leading LGBTQ Youth Organization

- Policy and Advocacy
- Educator Professional Development
- Youth Engagement and Advocacy
Supporting Our Youth

Iowa GSA Network

- Gay-Straight Alliances
- Safe Spaces, community support, youth activism
- 120 GSAs across 99 counties

GSA Coordinators

- Becky Smith (Director Youth Engagement)
- Dana Van Renterghem
- Morgan Dodge
Supporting Our Youth

Pride Camp

- Week-long summer camp for LGBTQ Youth 14 – 18
- Community Building, Fun Activities, Meaningful Conversations
- Grandview University
- Registration open!

JULY 15-19, 2019
Supporting Our Youth

- Iowa Governor’s Conference for LGBTQ Youth
- Upcoming Fall Events!
  - GSACon – September 28 at Lincoln High School
  - NW GSACon – November 2 at the Sioux City Public Museum
Supporting Our Educators

Impactful Conferences
- Iowa Sexual Violence Symposium – April 22

Upcoming Fall Events
- Iowa Anti-Bullying Symposium – 10/4/19
- Iowa Trans Summit – 11/15/19
“Over three-quarters (77%) of LGBT youth say they know things will get better.”

... that leaves 23% who don’t.
Walk the Talk: Creating Inclusive Classrooms

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