

Imagining Possibilities: LGBTQ-Inclusion and Acceptance in K-12 STEM



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Plan

35 minutes

- ▶ Writing & discussion
- ▶ LGBTQ learning realities
- ▶ LGBTQ-inclusive STEM learning possibilities

40 minutes

- ▶ Breakouts
 - ▶ oSTEM teaching as a career
 - ▶ oSTEM outreach to K-12
 - ▶ oSTEM research



Possibilities



Free Write (5 min on your own)

- ▶ Imagine an LGBTQ-inclusive and accepting STEM learning context.
 - ▶ What would it look like?
 - ▶ What would happen?
 - ▶ What would it feel like?



<http://missriki.com/wp-content/uploads/2012/10/write-1.jpg>



Small Group Sharing (10 minutes)

- ▶ What would an LGBTQ-inclusive and accepting STEM learning context be like?
- ▶ What themes did your possibilities have in common?
- ▶ What would make these experiences LGBTQ inclusive and accepting?
- ▶ What supports or changes are needed to make these possibilities realities?



<http://www.gannett-cdn.com/-mm-/f9d2795695be1bc3e057f22732dea7b69d39160a/c=27-0-4025-3009&r=x404&c=534x401/local-/media/USATODAY/test/2013/09/12/1379014333000-AP-SPAIN-GAY-PRIDE-56924697.JPG>



Large Group Sharing

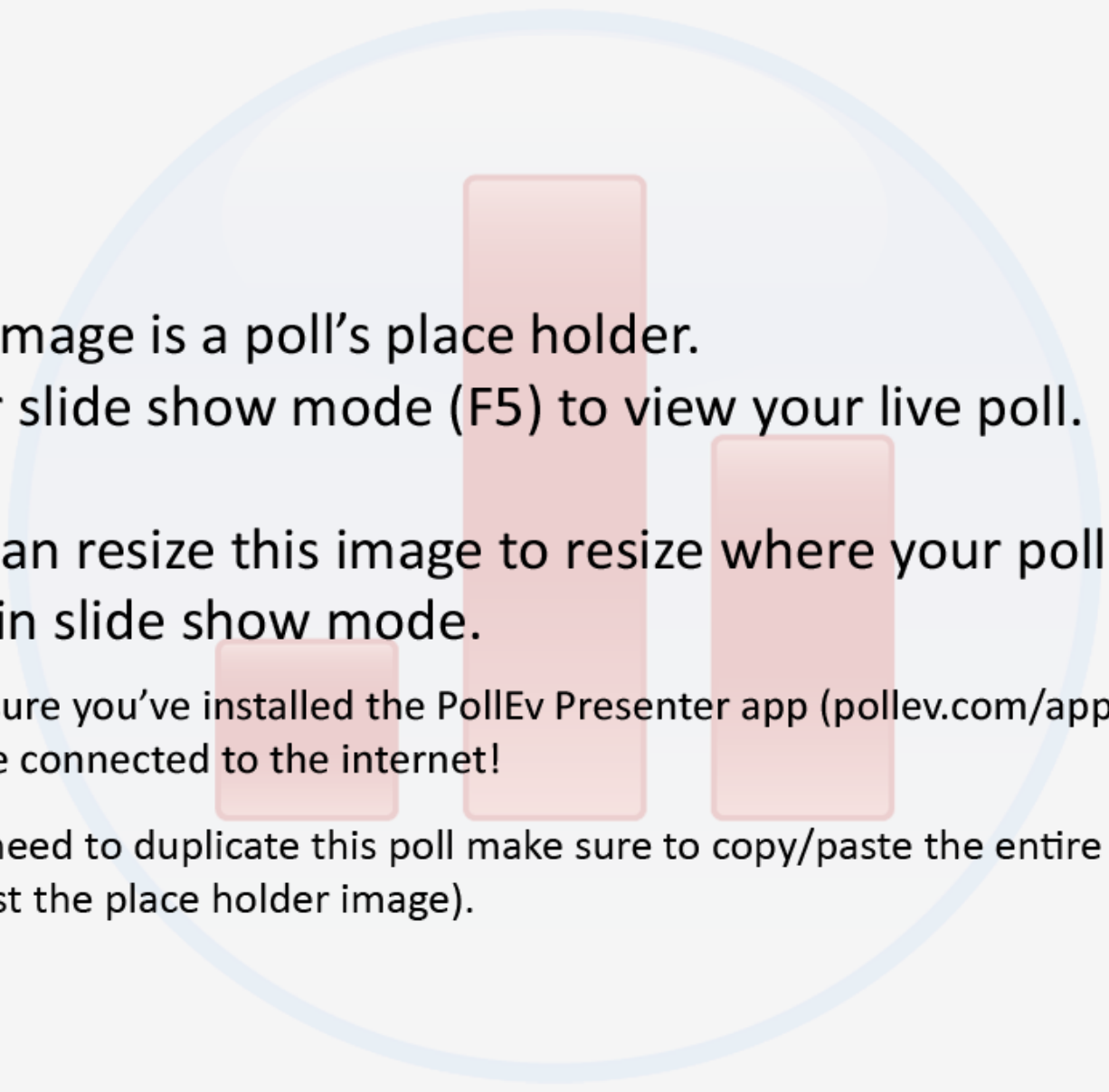
- ▶ What does inclusion and acceptance in K-12 STEM learning look like?
- ▶ How do we manifest LGBTQ-inclusive and accepting STEM learning experiences for present STEM learners?



oSTEM Participant Poll Responses

sexual orientation and gender identity included in antibullying ed.
Students feel confident that they can come out and still get a job in the stem fields
parental education and assistance in reinforcing inclusive behaviors
Having more gay teachers! Yay! :D
Lgbtq friendly stickers/pins/anything (can be small) to let students know professor is an ally
Teachers educate students about what being LGBT is and what being LGBT means
Teachers not being afraid to be themselves in the workplace and being open to their colleagues and students.
teaching difference between sex and gender.
a safe space to talk about these issues
gender neutral bathrooms in middle school and elementary school
Toning down traditional gender roles.
acknowledging spectrums of gender and sexuality, not binary.
role models people can identify with regardless of gender identity
Teachers reprimand students using homophobic and/or transphobic language
Inclusion of LGBT+ information in sexual education classes
actively reaching out, not only being accepting but directly giving opportunities for inclusion
increased mentor capacity in a variety of fields
teacher education on LGBT teacher coming out to class when asked about spouse
Educators trained in addressing lgbt issues and understanding lgbt youth
lgbt+ inclusive curriculum
awesome great thing

► Data from unedited poll conducted 10/24/2013



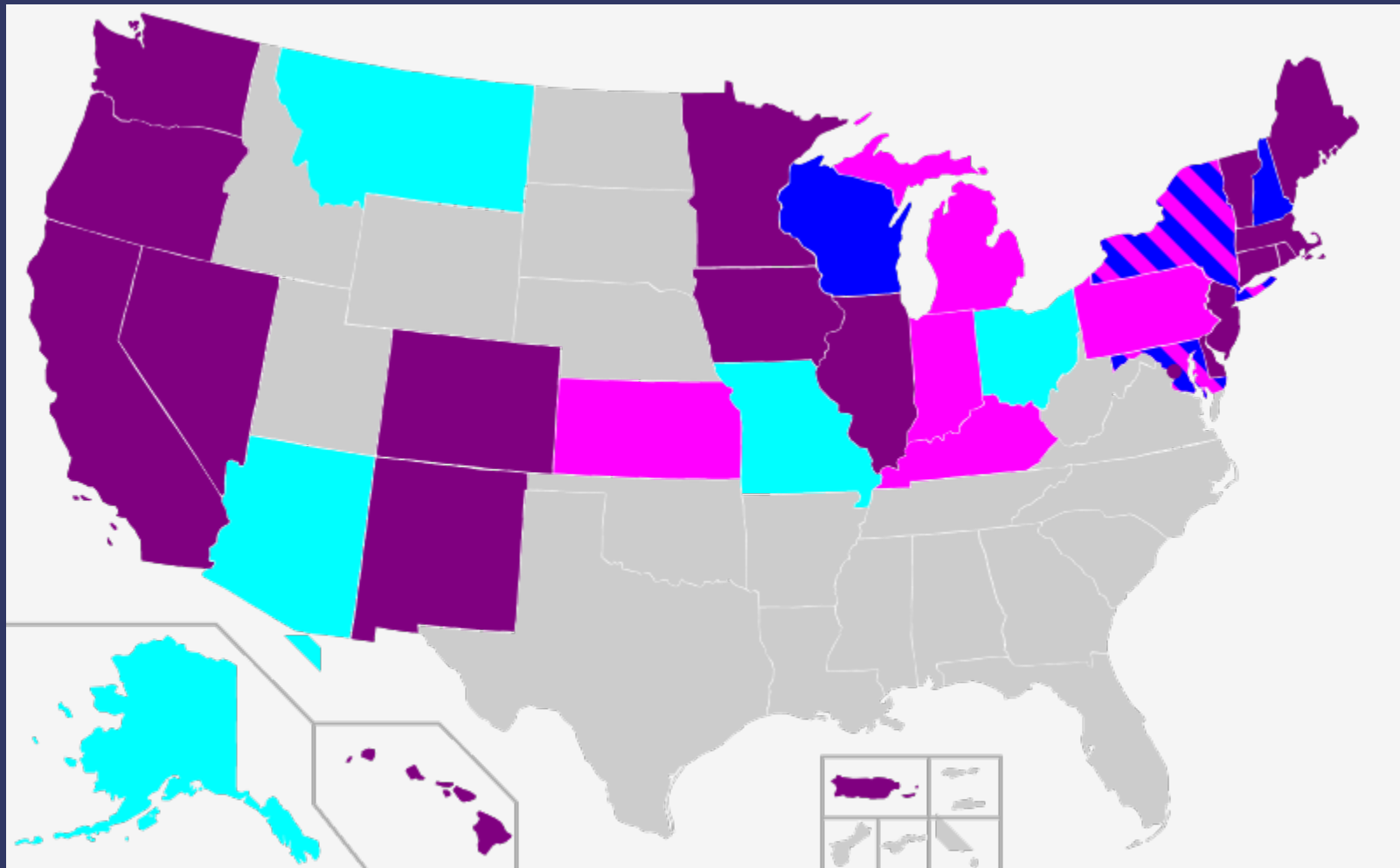
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Realities



► http://en.wikipedia.org/wiki/File:Samesex_marriage_in_USA.svg
http://en.wikipedia.org/wiki/File:LGBT_employment_discrimination_law_in_the_United_States.svg

Physical Harassment and Assault

Figure 1.15 Frequency of Physical Harassment in the Past School Year

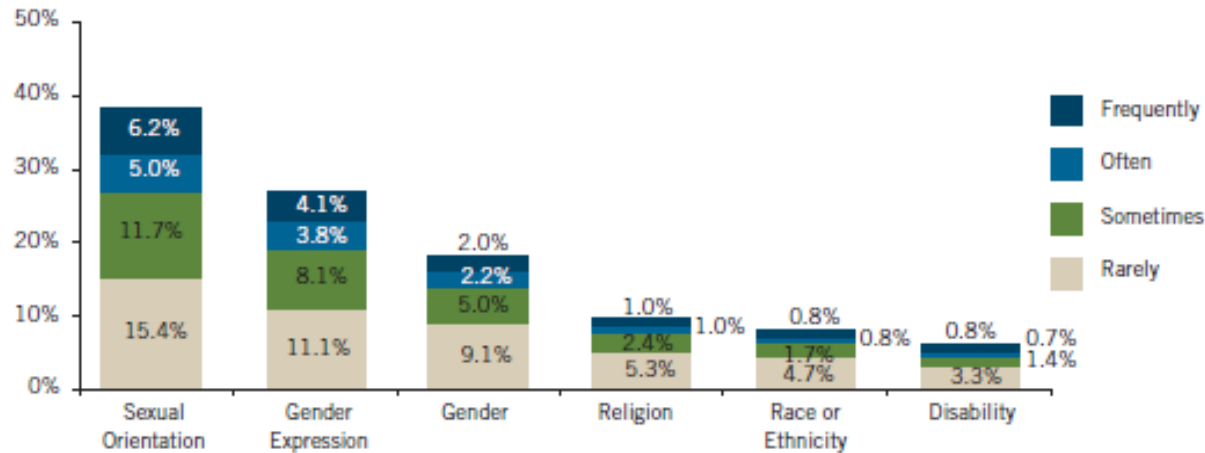
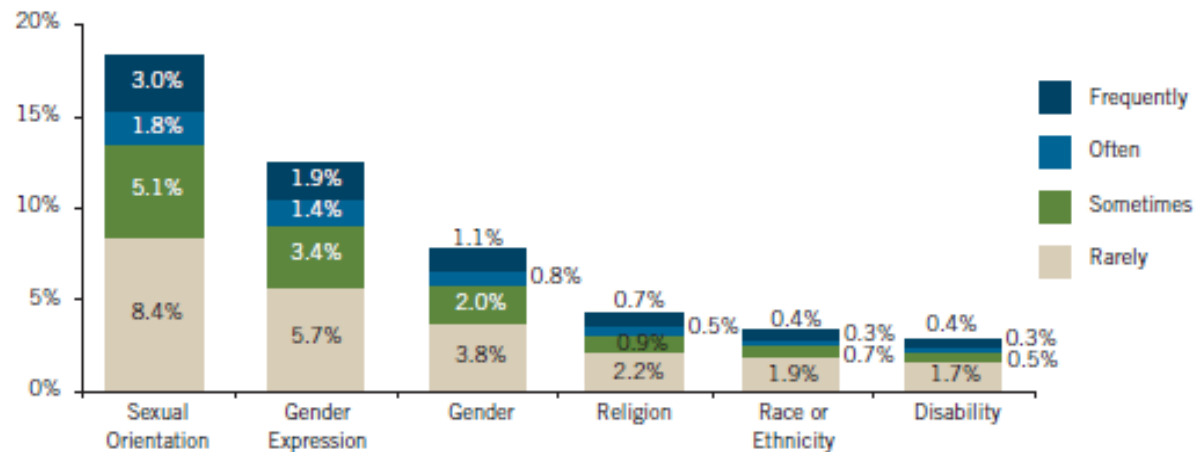


Figure 1.16 Frequency of Physical Assault in the Past School Year



GLSEN (2012) *The 2011 national school climate survey: The experiences of lesbian, gay, bisexual, and transgender youth in our nation's schools*. New York, NY: GLSEN.

Hard Data

Table 4

Alternative-Sample Analysis: Significance Levels (p Values) Comparing Outcomes Between Straight- and LGBTQ-Identified Students, When Excluding and Including Multiple-Low-Frequency Responders

A. Main Analysis (Excluding Multiple-Low-Frequency Responders)	
Outcome	LGBTQ
Suicide ideation	< .0001
Suicide attempts	< .0001
Cyber-bullying victimization	< .0001
Victimization (composite)	< .0001
Preferring to attend school with no gay or lesbian students	< .0001
School belongingness (composite)	< .0001
Unexcused absences	< .0001

- Robinson, J. & Espelage, D. (2011). Inequities in educational and psychological outcomes between LGBTQ and straight students in middle and high school. *Educational Researcher* 40(7), 315-330.

Does that affect learning?

- ▶ The grade point average (GPA) for LGBT students nationally who were frequently harassed because of their sexual orientation or gender expression was significantly lower (2.9) than that of LGBT students experiencing less harassment (3.2).

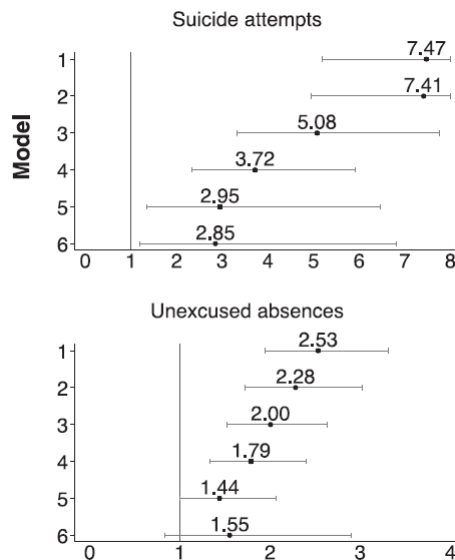


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- ▶ GLSEN (2012) *The 2011 national school climate survey: The experiences of lesbian, gay, bisexual, and transgender you in our nations school*. New York, NY: GLSEN.

GLSEN Recommends

- ▶ Implement comprehensive school bullying/harassment policies that specifically protect LGBT students.
- ▶ Support Gay-Straight Alliances (LGBT student support groups).
- ▶ Provide clear training to staff about how to respond and support LGBT students.
- ▶ Increase student access to LGBT-inclusive curricular resources.

Addressing “Bullying” Not Enough



- Odds ratios (LGBTQ vs. straight):
 - 1.4 times as likely to skip school;
 - 3.3 times as likely to think about suicide; and,
 - 3.0 times as likely to attempt suicide.
- These differences persist after controlling for demographic variables and victimization levels.
- “It’s the air we breath.” Robinson, 2013



Inclusive Curriculum...

- ▶ takes a coherent approach which is anticipatory and proactive;
- ▶ has a strategy for delivering equal opportunities and diversity policies;
- ▶ involves the whole institution;
- ▶ matches provision to student needs; and,
- ▶ incorporates regular reflection, review and refinement of strategies and methods that actively involve LGBT students.

“Often without realizing it, public schools are sending youth LGBTs the message, at best, that something is wrong with them, or at worst, that they do not exist.”

Biegle, 2010, p. 136



Inclusion in Science, Health, and Math

Table 1.5 Taught Positive Representations of LGBT-Related Topics in Class

Classes	% of Students Taught LGBT-Related Topics (n=1419)	% of all Students in Survey (n=8574)
History or Social Studies	54.3%	9.0%
Science	9.4%	1.6%
Health	24.5%	4.1%
Gym or Physical Education	3.7%	0.6%
English	44.5%	7.4%
Foreign Language	11.0%	1.8%
Music	8.5%	1.4%
Math	3.8%	0.6%
Art	13.2%	2.2%
Sociology	7.8%	1.3%
Psychology	13.5%	2.2%
Other Class (e.g., Drama, Philosophy)	19.5%	3.2%

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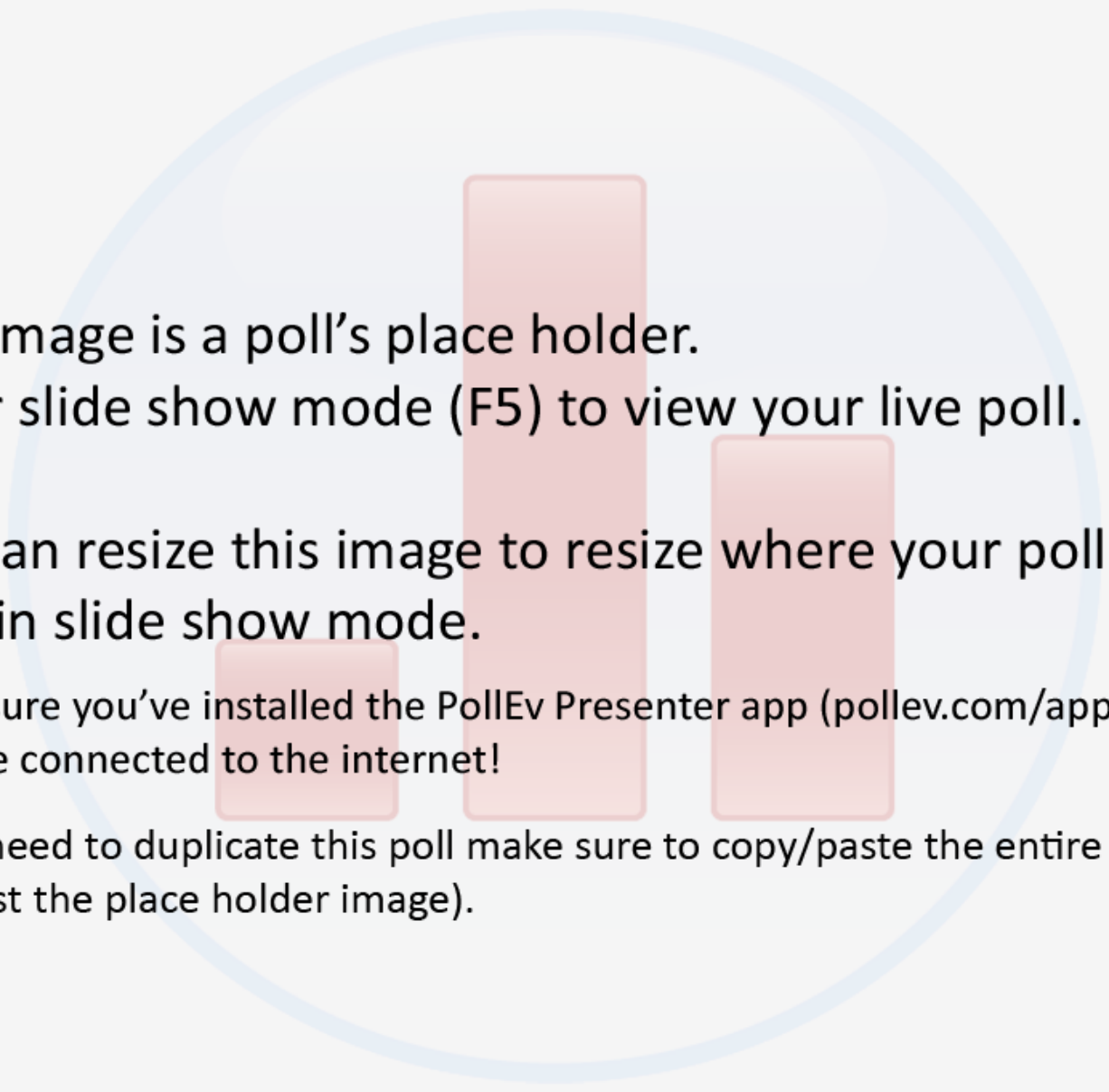
Make it Better

- A. oSTEM teaching as a career [Dustin]
- B. oSTEM education research [Mary]
- C. oSTEM outreach to K-12 schools [Ikaika]



<http://www.quickanded.com/2013/09/teachers-professionalism-student-learning.html>





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Final Thoughts (5 minutes)

- ▶ What can you do to make it better for LGBTQ learners in STEM?



http://www.esc177.net/users/0209/images/diverse_kids.jpg



oSTEM Participant Ideas

celebrate national LGBT history month at k-12 schools

and 3 - be a role model by having the courage to be an openly gay teacher.

promote social justice through no name calling week

I challenge myself as a future educator to 1- make it known that I am an ally through pins or posters, 2 - start or continue to help the GSA at my

Reach out to K-12 schools and subtly bring awareness of the issues to younger students.

share what I've learned about inclusion with other teachers!!!

don't be a bystander - help educators learn to be inclusive and reinforce inclusive behaviors

Be a mentor: talk about my positive experiences being LGBTQ i

volunteer as a speaker at a school's STEM classroom or GSA meeting

talk about all types of families, not just nuclear mom/dad.

; Don't erase LGBT people from the history books; if a historical figure was LGBT (ex. Turing) be sure to mention that fact.

volunteer in a school and be myself - a positive role model

be present. Let kids know we exists

help fund local gsa chapters

Promote that there is no "single face" of STEM — everyone belongs at the table

show more love to gay people! Weeeeee!!! :D

► Data from unedited poll conducted 10/24/2013

Resources

- ▶ Twitter: QueerScienceEd
- ▶ Facebook: QScienceEd

- ▶ GLSEN Educator Resources:
 - ▶ <http://www.glsen.org/educator>
- ▶ GLSEN's Research:
 - ▶ <http://www.glsen.org/research>

- ▶ Email:
 - ▶ Mary -- mhoelscher@queerscience.org
 - ▶ Dustin – ludwil05@umn.edu
 - ▶ Ikaika – iregidor@glSEN.org



Session Description

There is a high need for all teachers to support lesbian, gay, bisexual, transgender, and questioning (LGBTQ) students in the classroom to improve educational outcomes such as attendance, grades, and pursuit of higher education and to improve psychological health outcomes (Meyers, 2010; GLSEN, 2012; Robinson & Espelage, 2012; Robinson & Espelage, 2013). More than twenty years of research history regarding LGBTQ topics and people in education exists despite persistent exclusion in policy and curriculum (Quinn & Meiners, 2011). Research related to LGBT-inclusion in STEM education, though, has hardly begun (Hoelscher, unpublished). Participants in this workshop will begin by examining positive, LGBTQ-inclusive science learning experiences they have had. They will then self-assess their past school contexts in terms of their present LGBTQ-inclusion and develop an understanding of the role of context in supporting or inhibiting LGBT-inclusive practices (from Elia and Elliason, 2010). An overview of recommended actions for teachers generally (GLSEN, 2012) and STEM teachers specifically (Hoelscher, unpublished) will be provided as participants discuss the connection between their past positive experiences and research findings. Participants will breakout into smaller groups to discuss oSTEM teaching as a career; oSTEM education research as a career; and promoting LGBT-inclusion through outreach by oSTEM groups to local school classrooms.

