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High Level Hi-SET Success: Innovative Programs for Incarcerated Adult Learners

COABE Correctional Education Symposium

Monterey County Office of Education
Salinas Valley Adult Education Consortium

Tuesday, May 16, 2023

Four Dimensional Education: A 21st Century Framework

Objectives of the Presentation

This session will provide participants with:

- An Overview of the 21st Century Skills and Competencies
- Discussion on how we incorporated these into the Hi-SET Prep for Incarcerated Adults
- Discussion for strategies to build these Competencies into our Teaching and Learning for Hi-SET Success

OTAN Technology & Distance Learning Symposium

Presenters


Greg Ludwa: Senior Teacher, Alternative Education Programs
Math and Curriculum Senior Teacher MCJ

Maribel Hernandez: Para-Professional 3, MCJ
Workforce Readiness Teacher

4 C's of 21st Century Skills

The 4 C's:

21st Century Skills



Four-Dimensional Education

Knowledge
"What we know and understand"

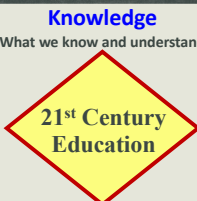
Skills
"How we use what we know"

Character
"How we behave and engage with the world"

Meta-Learning
"How we reflect and adapt"

21st Century Education

Fadel, Bialek, & Trilling, 2015



HI-SET Success for Incarcerated Adults

[Online and Paper-based Curricula: 2018 - 2023](#)

- HS Diploma Curricula
- High School Equivalency – Hi-SET
- iCEV: Standards based for Workforce Readiness
- Edgenuity

<https://auth.edgenuity.com/Login/Login/Educator>

HI-SET Success for Incarcerated Adults

Focus on the Questions

- What skills do adults in the HI-SET and HSD really need to succeed?
- Are these the same skills that we want 9-12 students to learn?
- What is different between adult needs and learning from High School students' learning?

HI-SET Success for Incarcerated Adults

Adult skills focus for the HI-SET and HSD

- **Problem-Solving** skills
- **Critical Thinking** skills
- **Data Analysis and Statistical Information** skills
- **General Knowledge** skills
- **Meta-cognition:** Reflecting and adapting to our environment and to available information

HI-SET Success for Incarcerated Adults

Problem-Solving Skills

- How can we approach a problem to help foster understanding?
- What is the problem really asking?
- How does close reading apply to our understanding of a problem?

HI-SET Success for Incarcerated Adults

Critical Thinking Skills

- What background knowledge can I apply to this problem?
- Is this question supported by the data and information in the reading?
- Does this make sense from a rational, scientific, or logical standpoint?

HI-SET Success for Incarcerated Adults

Data Analysis and Statistical Analysis Skills

- What is the data and information telling me?
- Can I make sense of the information by using “easy” numbers?
- Where is this data or information coming from?
- Does the reading support this understanding of the data?

HI-SET Success for Incarcerated Adults

General Knowledge Skills

- General knowledge is the least important component of learning for the Hi-SET.
- A basic understanding of what came first and how it affected what comes after is important, i.e. cause and effect.
- How did World History interact with US History?

HI-SET Success for Incarcerated Adults

Hi-SET Prep Process and Procedure

The Big Idea

- **Productive Struggle**
 - **Students work and struggle towards the goal to understand solve the problems. Correct answers are less important than the struggle to understand and learn.**

HI-SET Success for Incarcerated Adults

Brain Research on Teaching and Learning

Jason Moser’s brain scan research at Michigan State University has demonstrated the following two responses, when “we make a mistake,...”:

- ERN response - “...increased electrical activity when the brain experiences conflict between a correct response and an error.”
 - Pe response - “...a brain signal reflecting conscious attention to mistakes.”
- Boaler, 2016

HI-SET Success for Incarcerated Adults

Brain Research and Growth Mindset

Researchers also found:

- “...greater ERN and Pe responses... when they made mistakes than when their answers were correct.”
 - “...a brain activity was greater following mistakes for individuals with a growth mindset than for individuals with a fixed mindset.”
- Boaler, 2016, p. 12

HI-SET Success for Incarcerated Adults

Brain Research and Growth Mindset

Additionally, researchers found. Mistakes are:

- opportunities for “our brains to spark and grow.”
- “...not only opportunities for learning...”
- “...also times when our brains grow, even if we don’t know we have made a mistake.”

Boaler, 2016, p. 12

HI-SET Success for Incarcerated Adults

Materials & Procedures While Preparing for the Hi-SET

<p><u>1. Moderate – Hard</u></p> <ul style="list-style-type: none"> ▪ ETS Hi-SET Practice tests FPT 1 – FPT 7 ▪ 19 – 32 questions, multiple choice ▪ Progression from easier to harder ▪ 2 – 3 test versions 	<p><u>2. Hard - Difficult</u></p> <ul style="list-style-type: none"> ▪ Mometrix Hi-SET Secrets ▪ 2014 and 2018 versions ▪ 40 or 50 questions, multiple choice 	<p><u>3. Very Difficult</u></p> <ul style="list-style-type: none"> ▪ Mometrix Hi-SET Prep ▪ 2014 version ▪ 50 questions ▪ At least 10 questions are free response
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HI-SET Success for Incarcerated Adults

Processes & Procedures while Preparing for the Hi-SET

<p><u>1. Take test themselves</u></p> <ul style="list-style-type: none"> ▪ Do the problems that they know how to do and try the problems that they think they can do. ▪ Teacher or Aide corrects the test and returns it to the student. 	<p><u>2. Student Corrects Mistakes</u></p> <ul style="list-style-type: none"> ▪ Productive Struggle ▪ Working towards a solution, not guessing ▪ Works with a partner to better understand the question 	<p><u>3. Work on Remaining Incorrect Answers with Teacher/Aide</u></p> <ul style="list-style-type: none"> ▪ Focus on the Big Ideas and Content Background ▪ Teacher can offer background knowledge
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Productive Struggle

Score: $\frac{16}{25} = 64\%$ *good 1st attempt* Correction Score: _____ Final: _____

1. A B C D	11. B C D	21. A B C D	31. A B C D	41. A B C D
2. A B C D	12. A B C D	22. A B C D	32. A B C D	42. A B C D
3. B C D D	13. A B C D	23. B C D D	33. A B C D	43. A B C D
4. A B C D	14. A B C D	24. A B C D	34. A B C D	44. A B C D
5. A B C D	15. A B C D	25. A B C D	35. A B C D	45. A B C D
6. B C D D	16. A B C D	26. A B C D	36. A B C D	46. A B C D
7. A B C D	17. A B C D	27. A B C D	37. A B C D	47. A B C D
8. B C D D	18. A B C D	28. A B C D	38. A B C D	48. A B C D
9. A B C D	19. A B C D	29. A B C D	39. A B C D	49. A B C D
10. A B C D	20. A B C D	30. A B C D	40. A B C D	50. A B C D

Productive Struggle

Reading	Social Studies	Science
C = Comprehension	H = History (US and World)	L = Life Science
I = Inference and Interpretation	C = Civics / Government	P = Physical Science
A = Analysis	E = Economics	E = Earth Science
S = Synthesis and Generalization	G = Geography	

Handwritten notes:
 $\frac{2}{11} = 18\%$
 $\frac{6}{10} = 60\%$
 $\frac{2}{4} = \frac{1}{2} = 50\%$

Productive Struggle

Score: $\frac{21}{23} = 91\%$ *good 3rd attempt* Correction Score: $\frac{22}{25} = 88\%$ *good 1st attempt* Final: _____

1. A B C D	11. A B C D	21. A B C D	31. A B C D	41. A B C D
2. B C D D	12. A B C D	22. A B C D	32. A B C D	42. A B C D
3. B C D D	13. A B C D	23. A B C D	33. A B C D	43. A B C D
4. A B C D	14. A B C D	24. A B C D	34. A B C D	44. A B C D
5. B C D D	15. A B C D	25. A B C D	35. A B C D	45. A B C D
6. B C D D	16. A B C D	26. A B C D	36. A B C D	46. A B C D
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8. A B C D	18. A B C D	28. A B C D	38. A B C D	48. A B C D
9. B C D D	19. A B C D	29. A B C D	39. A B C D	49. A B C D
10. A B C D	20. A B C D	30. A B C D	40. A B C D	50. A B C D

HI-SET Success for Incarcerated Adults

Academic Survival Skills

- How do I best learn?
- What is my learning style?
- How do I maximize my test taking strategies to take advantage of my strengths and knowledge?

Academic Survival Skills

Score: $\frac{13}{23} = 57\% +$ Correction Score: _____ Final: _____

P	1. A B C D	L	11. A B C D	P	21. A B C D	31. A B C D	41. A B C D
P	2. A B C D	L	12. A B C D	P	22. A B C D	32. A B C D	42. A B C D
E	3. A B C D	L	13. A B C D	P	23. A B C D	33. A B C D	43. A B C D
E	4. A B C D	L	14. A B C D	P	24. A B C D	34. A B C D	44. A B C D
L	5. A B C D	L	15. A B C D	E	25. A B C D	35. A B C D	45. A B C D
L	6. A B C D	L	16. A B C D	P	26. A B C D	36. A B C D	46. A B C D
L	7. A B C D	L	17. A B C D	P	27. A B C D	37. A B C D	47. A B C D
L	8. A B C D	L	18. A B C D	P	28. A B C D	38. A B C D	48. A B C D
L	9. A B C D	L	19. A B C D	P	29. A B C D	39. A B C D	49. A B C D
L	10. A B C D	L	20. A B C D	P	30. A B C D	40. A B C D	50. A B C D

HI-SET Success for Incarcerated Adults

High School Equivalency – Hi-SET

Tested	Reading	Studies	Science	Math	Essay	Writing	Total	Completed	
80	64	49	44	41	36	39	70	27	
Gateway	45	44	41	34	36	36	34	Hi-SET Completion	
Percent	19	5	3	7	1	3			
Took more than two tests	97.67%	70.31%	89.80%	93.18%	82.93%	100.00%	92.31%	48.57%	
Median	10	14	13	10	2	11	53	67.21	
Average	10	15	14	12	12	12	53	65.00	
Mode	8	14	16	10	2	13			
Maximum	19	20	20	20	4	17	95		
Minimum	2	4	5	3	2	6			
Pass	≥8							Total Tests	
Did not pass	<8							Taken	237
Completed	≥45							Passed	200
Incomplete	<45							Score	<8
	Pending							Passing Percent	84.39%

HI-SET Success for Non-Incarcerated Adults
High School Equivalency – Hi-SET

Total	Reading	Studies	Science	Math	Essay	Writing	Total	Completed
23	11	10	12	10	9	9	15	6
	11	10	11	9	7	9	8	
	0	0	0	0	2	0		Hi-SET Completion
	100.00%	100.00%	91.67%	90.00%	77.78%	100.00%	53.33%	
Median	10	15	15	11	2	11	16	
Average	10	15	14	11	2	11	16	
Mode	10	14	8	8	2	11		
Maximum	14	18	18	18	3	13		
Minimum	8	8	5	2	1	9		
Pass	>=8						Total Tests	
Not pass	<8						Taken	52
Completed	>=45	Total	<45				Passed	50
Incomplete	<45	Score	<8				Passing Percent	96.15%
		Pending						

HI-SET Success for Incarcerated Adults

Questions?

Google Drive: Powerpoint and Demonstration documents
<https://www.dropbox.com/s/cnddz3gjz3l8br5/COABE.CorrectionalEdSymposium.Hi-SETInnovativePrograms.5.16.23.pptx?dl=0>

Greg Ludwa's and Maribel Hernandez's work emails:
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mahernandez@montereycoe.org

HI-SET Success for Incarcerated Adults

Examples of the adult skills focus: HI-SET and HSD

- **Problem-Solving** skills
- **Critical Thinking** skills
- **Data Analysis and Statistical Information** skills
- **General Knowledge** skills
- **Meta-cognition:** Reflecting and adapting to our environment and to available information

HI-SET Success for Incarcerated Adults

Problem-Solving Skills

- How can we approach a problem to help foster understanding?
- What is the problem really asking?
- How does close reading apply to our understanding of a problem?

HI-SET Success for Incarcerated Adults

Problem-Solving Skills

Important Dates in the International Slave Trade

Date	Country	Event
1517	Spain	Begins regular slave trading
1592	Britain	Begins regular slave trading
1792	Denmark	Abolishes slave trade
1794	France	Abolishes slave trade
1807	Britain	Abolishes slave trade
1834	Britain	Abolishes slavery in all colonies
1865	United States	Abolishes slavery
1888	Brazil	Abolishes slavery

Mometrix, 2018

HI-SET Success for Incarcerated Adults

Problem-Solving Skills

1. Which nation was the first to abolish slavery?
- Spain
 - Britain
 - Denmark
 - France

Mometrix, 2018

HI-SET Success for Incarcerated Adults

Problem-Solving Skills

Important Dates in the International Slave Trade

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1834	Britain	Abolishes slavery in all colonies
1865	United States	Abolishes slavery
1888	Brazil	Abolishes slavery

Mometrix, 2018

HI-SET Success for Incarcerated Adults

Problem-Solving Skills

2. If the United States had not won the Revolutionary War, when would slavery have been outlawed?

a. 1792
b. 1794
c. 1807
d. 1834

Mometrix, 2018

HI-SET Success for Incarcerated Adults

Problem-Solving Skills

Important Dates in the International Slave Trade

Date	Country	Event
1517	Spain	Begins regular slave trading
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1888	Brazil	Abolishes slavery

Mometrix, 2018

HI-SET Success for Incarcerated Adults

Problem-Solving Skills

3. Which of the following conclusions is valid, based on your prior knowledge and the information above?

- More slaves worked in Brazil than in any other nation.
- France realized its ideals of independence sooner than the United States.
- Denmark was the largest slave-holding country in Europe.
- Britain freed enslaved peoples only after losing the Asian nations of the British Empire.

Approximately, how many slaves were in the US in 1863, at the time of the Emancipation Proclamation?

- 3,000,000**

Mometrix, 2018

HI-SET Success for Incarcerated Adults

Problem-Solving Skills

3. Which of the following conclusions is valid, based on your prior knowledge and the information above?

- More slaves worked in Brazil than in any other nation.
- France realized its ideals of independence sooner than the United States.
- Denmark was the largest slave-holding country in Europe.
- Britain freed enslaved peoples only after losing the Asian nations of the British Empire.

Approximately, how many slaves were in Brazil in 1888, at the end of slavery.

- 10,000,000**

Mometrix, 2018

HI-SET Success for Incarcerated Adults

Critical Thinking Skills

- What background knowledge can I apply to this problem?
- Is this question supported by the data and information in the reading?
- Does this make sense from a rational, scientific, or logical standpoint?

HI-SET Success for Incarcerated Adults

Problem-Solving Skills

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- Denmark was the largest slave-holding country in Europe.
- Britain freed enslaved peoples only after losing the Asian nations of the British Empire.

When did Britain lose the Asian nations of British Empire?

- During the 20th century

Mometrix, 2018

HI-SET Success for Incarcerated Adults

Problem-Solving Skills

3. Which of the following conclusions is valid, based on your prior knowledge and the information above?

- More slaves worked in Brazil than in any other nation.
- France realized its ideals of independence sooner than the United States.
- Denmark was the largest slave-holding country in Europe.
- Britain freed enslaved peoples only after losing the Asian nations of the British Empire.

Liberte [?]	Equalite [?]	Fraternite [?]
Liberty	Equality	Brotherhood

Mometrix, 2018

HI-SET Success for Incarcerated Adults

Problem-Solving Skills

5 Consider the graphs below.

Although the numbers are not included on either axis, it is possible to determine from shape and location that the equation $y = -1.2x + 4$ corresponds to graph

A	Q.	$y = mx + b$
B	R.	
C	S.	$m = -1.2$
D	T.	$b = 4$
E	U.	

ETS, 2013

Problem-Solving Skills

How can we approach a problem to help foster understanding?

Connect the problem to our learned experience.

The map below shows Gogola, a large island that is divided into two independent nations—Braga and Matsuo. A high mountain range extends north and south about 50 miles from Braga's western coast.

ETS, 2013

Connecting the problem to our learned experience

22. If the prevailing winds come from the west, which of the following statements about the rainfall in Braga is most likely true?

- There will be more rainfall in the area east of the mountains than along the coast.
- There will be more rainfall in the southern half of the country than in the northern half.
- There will be more rainfall in the northern half of the country than in the southern half.
- There will be more rainfall along the coast than in the area east of the mountains.

The map below shows Gogola, a large island that is divided into two independent nations—Braga and Matsuo. A high mountain range extends north and south about 50 miles from Braga's western coast.

ETS, 2013

Connecting the problem to our learned experience

The map below shows Gogola, a large island that is divided into two independent nations—Braga and Matsuo. A high mountain range extends north and south about 50 miles from Braga's western coast.

Monterey Bay

Pacific Ocean

Santa Lucia Mtns.

Big Sur

Salinas Valley

ETS, 2013

Connecting the problem to our learned experience

22. If the prevailing winds come from the west, which of the following statements about the rainfall in Braga is most likely true?
- A. There will be more rainfall in the area east of the mountains than along the coast.
 - B. There will be more rainfall in the southern half of the country than in the northern half.
 - C. There will be more rainfall in the northern half of the country than in the southern half.
 - D. There will be more rainfall along the coast than in the area east of the mountains.

The map below shows Gogola, a large island that is divided into two independent nations—Braga and Matsuo. A high mountain range extends north and south about 50 miles from Braga's western coast.



ETS, 2013

HI-SET Success for Incarcerated Adults

Critical Thinking Skills

Alleles are the different forms of the gene for a trait. For a certain breed of dog, the long hair allele (H) is dominant and the short hair allele (h) is recessive. For this breed, the genes of two parents and the possible gene combinations in their offspring are shown in the chart below.

		Female Parent	
		h	h
Male Parent	H	Hh	Hh
	h	hh	hh

ETS, 2015

HI-SET Success for Incarcerated Adults

Critical Thinking Skills

- | | |
|--|--|
| <p>5. Which of the following best describes the hair of the two parents?</p> <ul style="list-style-type: none"> A. The male parent has long hair, and the female parent has short hair. B. The male parent has short hair, and the female parent has long hair. C. Both parents have short hair. D. Both parents have long hair. | <p>7. If the female parent had one long hair allele (H), what would be the expected percent of offspring with long hair?</p> <ul style="list-style-type: none"> A. 100% B. 75% C. 50% D. 25% |
|--|--|

ETS, 2015

HI-SET Success for Incarcerated Adults

Critical Thinking Skills

Alleles are the different forms of the gene for a trait. For a certain breed of dog, the long hair allele (H) is dominant and the short hair allele (h) is recessive. For this breed, the genes of two parents and the possible gene combinations in their offspring are shown in the chart below.

		Female Parent	
		h	h
Male Parent	H	Hh	Hh
	h	hh	hh

ETS, 2015

HI-SET Success for Incarcerated Adults

Critical Thinking Skills

5. Which of the following best describes the hair of the two parents?

- A. The male parent has long hair, and the female parent has short hair.
- B. The male parent has short hair, and the female parent has long hair.
- C. Both parents have short hair.
- D. Both parents have long hair.

7. If the female parent had one long hair allele (H), what would be the expected percent of offspring with long hair?

- A. 100%
- B. 75%
- C. 50%
- D. 25%

		H h	
		H	h
Male Parent	H	HH	Hh
	h	Hh	hh

ETS, 2015

Critical Thinking Skills

How is this question supported by the data and information in the reading?

Staying physically fit involves practicing habits such as exercising regularly, eating well and getting enough sleep. Research has shown that people who are physically fit perform better in work and school. Your employer is printing a special newsletter informing employees about important ways they can practice staying fit.

Write an essay for your employer's newsletter to persuade workers to adopt at least one behavior that will improve their fitness. Think carefully about what reasons will convince other workers to change their behavior.

ETS, 2013

Staying physically fit involves practicing habits such as exercising regularly, eating well and getting enough sleep. Research has shown that people who are physically fit perform better in work and school. Your employer is printing a special newsletter informing employees about important ways they can practice staying fit.

Write an essay for your employer's newsletter to **persuade** workers to adopt at least one behavior that will improve their fitness. Think carefully about what reasons will convince other workers to change their behavior.

Paragraph 1: Topic Sentence about what staying physically fit means.

- One sentence about exercise
- One sentence about healthy eating
- One sentence about getting enough sleep
- One concluding sentence about how employer will support the good habits.

Staying physically fit involves practicing habits such as exercising regularly, eating well and getting enough sleep. Research has shown that people who are physically fit perform better in work and school. Your employer is printing a special newsletter informing employees about important ways they can practice staying fit.

Write an essay for your employer's newsletter to **persuade** workers to adopt at least one behavior that will improve their fitness. Think carefully about what reasons will convince other workers to change their behavior.

Paragraph 2:
Topic sentence about exercise. Reword sentence from first paragraph.

- Supporting sentence 1 about exercise
- Supporting sentence 2 about exercise
- Supporting sentence 3 about exercise
- One concluding sentence about what the employer will do to support.

Staying physically fit involves practicing habits such as exercising regularly, eating well and getting enough sleep. Research has shown that people who are physically fit perform better in work and school. Your employer is printing a special newsletter informing employees about important ways they can practice staying fit.

Write an essay for your employer's newsletter to **persuade** workers to adopt at least one behavior that will improve their fitness. Think carefully about what reasons will convince other workers to change their behavior.

Paragraph 3:
Topic sentence about healthy eating. Reword first paragraph sentence.

- Supporting sentence 1 about healthy eating
- Supporting sentence 2 about healthy eating
- Supporting sentence 3 about healthy eating
- One concluding sentence about what the employer will do

Staying physically fit involves practicing habits such as exercising regularly, eating well and getting enough sleep. Research has shown that people who are physically fit perform better in work and school. Your employer is printing a special newsletter informing employees about important ways they can practice staying fit.

Write an essay for your employer's newsletter to **persuade** workers to adopt at least one behavior that will improve their fitness. Think carefully about what reasons will convince other workers to change their behavior.

Paragraph 4:
 Topic sentence about sleep. Reword first paragraph sentence.

- Supporting sentence 1 about getting enough sleep
- Supporting sentence 2 about getting enough sleep
- Supporting sentence 3 about getting enough sleep
- One concluding sentence what the employer will do for the employees

Staying physically fit involves practicing habits such as exercising regularly, eating well and getting enough sleep. Research has shown that people who are physically fit perform better in work and school. Your employer is printing a special newsletter informing employees about important ways they can practice staying fit.

Write an essay for your employer's newsletter to **persuade** workers to adopt at least one behavior that will improve their fitness. Think carefully about what reasons will convince other workers to change their behavior.

Paragraph 5:
 Topic sentence about staying fit. Reword first paragraph conclusion.

- Rework concluding sentence from Par. 2 about exercise
- Rework concluding sentence from Par. 3 about healthy eating
- Rework concluding sentence from Par. 4 about getting enough sleep
- Final concluding sentence to wrap up the essay

HI-SET Success for Incarcerated Adults

Data Analysis and Statistical Analysis Skills

- What is the data and information telling me?
- Can I make sense of the information by using “easy” numbers?
- Where is this data or information coming from?
- Does the reading support this understanding of the data?

Data Analysis and Statistical Analysis Skills

The table below shows the ten most populous U.S. cities from 1800 – 2000 in order from the most populous to the tenth most populous.

ETS, 2017

	1800	1850	1900	1950	2000
1	New York, NY	New York, NY	New York, NY	New York, NY	New York, NY
2	Philadelphia, PA	Baltimore, MD	Chicago, IL	Chicago, IL	Los Angeles, CA
3	Baltimore, MD	Boston, MA	Philadelphia, PA	Philadelphia, PA	Chicago, IL
4	Boston, MA	Philadelphia, PA	St. Louis, MO	Los Angeles, CA	Houston, TX
5	Charleston, SC	New Orleans, LA	Boston, MA	Detroit, MI	Philadelphia, PA
6	Northern Liberties, PA	Cincinnati, OH	Baltimore, MD	Baltimore, MD	Phoenix, AZ
7	Southwark, PA	Brooklyn, NY	Cleveland, OH	Cleveland, OH	San Diego, CA
8	Salem, MA	St. Louis, MO	Buffalo, NY	St. Louis, MO	Dallas, TX
9	Providence, RI	Spring Garden, PA	San Francisco, CA	Washington, D.C.	San Antonio, TX
10	Norfolk, VA	Albany, NY	Cincinnati, OH	Boston, MA	Detroit, MI

Data Analysis and Statistical Analysis Skills

Can I make sense of the information by using “easy” numbers?

The following three statements were true for a small country in a recent year:

1. Total income for the population: 24 billion U.S. dollars
2. Per capita income: 7,000 U.S. dollars
3. 90% of the total income was received by 5% of the population

How can I make sense of complicated information by using “easy” numbers?

The following three statements were true for a small country in a recent year:

1. Total income for the population: 24 billion U.S. dollars
2. Per capita income: 7,000 U.S. dollars
3. 90% of the total income was received by 5% of the population

Issue:
My student asks, “What does this mean?”

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Which of the following is the most appropriate interpretation of the per capita income information?

- A. Each person living in the country had an income of \$7,000.
- B. Most of the people in the country had incomes greater than \$7,000.
- C. Half the people in the country had incomes greater than \$7,000 and half had incomes less than \$7,000.
- D. If each person in the country had the same income, they would each have had an income of \$7,000.

Restate the problem using easy numbers.

1. A group of **100** co-workers form a lottery pool to buy lottery tickets (This used to be done in JH). Each contributes.
2. They win **\$1000**.
3. If they split the winnings **equally**, each participant wins **\$10**, i.e., $\$1000/100 = \10 .
4. **This is per capita income.**
5. However, it turns out that **5%** (**5**) of the participants contributed **90%** of the money to buy the tickets.
6. Consequently, **5** of the participants get **90%** of the winnings, i.e. $\$900$ or $\$900 / 5 = \180 @.
7. The remaining **95** participants split the **\$100**, i. e., $\$100 / 95 = \1.05

How can I make sense of complicated information by using "easy" numbers?

The following three statements were true for a small country in a recent year:

1. Total income for the population: 24 billion U.S. dollars
2. Per capita income: 7,000 U.S. dollars
3. 90% of the total income was received by 5% of the population

Big Issue:
My student asks, "What does this mean?"

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Which of the following is the most appropriate interpretation of the per capita income information?

- A. Each person living in the country had an income of \$7,000.
- B. Most of the people in the country had incomes greater than \$7,000.
- C. Half the people in the country had incomes greater than \$7,000 and half had incomes less than \$7,000.
- D. If each person in the country had the same income, they would each have had an income of \$7,000.

HI-SET Success for Incarcerated Adults

General Knowledge Skills

- General knowledge is the least important component of learning for the Hi-SET.
- A basic understanding of what came first and how it affected what comes after is important, i.e. cause and effect.
- How did World History interact with US History?

HI-SET Success for Incarcerated Adults

General Knowledge Skills

- **First Industrial Revolution: 1770 – 1830**
 - Invention of the **Steam Engine**
 - Invention of the **Spinning Jenny**
- **Second Industrial Revolution: 1850 – 1914**
 - **Invention of Steel: 1850**
 - **Discovery of oil in Pennsylvania: 1859**
 - **Industrial production of steel: 1870**

HI-SET Success for Incarcerated Adults

- **Civil War: 1861 - 1865**
 - **Springfield Rifled Musket: 1861**
 - Invention of the **interchangeable parts**
 - **Three aimed shots per minute**
 - **70 – 80% of wounded troops die of infections**
- **Invention of Steel: 1850**
 - **Development of railroads**
 - **Transcontinental railroad: 1869**
 - **Invention of the skyscraper: 1885**

HI-SET Success for Incarcerated Adults

- **Civil War: 1861 - 1865**
 - **70 – 80% of wounded troops die of wounds and infections**
 - **Minimal antiseptics and poor hygiene**
 - **Beginning of the Red Cross and field treatment**
- **World War I: 1914 - 1918**
 - **50 -52% of wounded troops die of wounds and infections**
 - **Better hygiene and better antiseptics**
 - **Introduction of field ambulances and field hospitals**
 - **No universal antibiotics**

HI-SET Success for Incarcerated Adults

- **World War II: 1939 - 1945**
 - 25% of wounded troops die of wounds and infections
 - Sulfa antibiotics were first used in the 1930s
 - Development of penicillin: Fleming discovers in 1928
 - Better antiseptics, hygiene, and more rapid transport to hospitals
- **Korean War and Vietnam War: 1950 – 1952, 1960 - 1974**
 - 20 - 25% of wounded troops die of wounds and infections
 - More antibiotics, better antiseptics, better field hygiene
 - Introduction of mobile air ambulances and MASH units

HI-SET Success for Incarcerated Adults

- **Gulf War: 1990 – 1991**
- **Iraq War: 2003 – 2010**
- **War in Afganistan: 1999 - 2021**
 - 7 – 9% of wounded troops die of wounds and infections
- **Why the huge change?**
 - Development of Ringer’s solution in 1983
 - Development of artificial plasma and artificial blood
- **No refrigeration needed**
 - Medics carry artificial blood into the field and soldiers do not bleed out on the battlefield

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