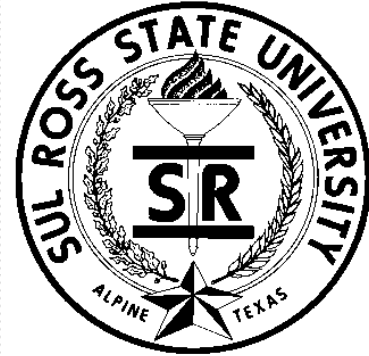


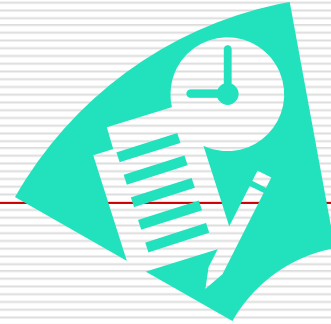
Dr. Jim Summerlin
Director of Teacher Education
Sul Ross State University



English Language Learners and Mathematics

Critical Campus Programs
Texas State University System Initiative

Today's Quiz:



Who are the Language Minority Students?

What challenges do they present math teachers?

How can we help them?



PART I

- Who are the English Language Learners
-

Question 1



1. What percentage of the K-12 student population is classified ELL?
 - a. 11%
 - b. 21%
 - c. 32%
 - d. 100%
-

ELL Population

- 4.6 million ELL served by K-12 schools in United States.

- *Kindler, A.L. Survey of the states, limited English proficient students and available educational programs and services: 1999-2000 summary report.*

- In Texas, **32%** of K-12 population is ELL

- *TEA 2004/2005 Statistics*

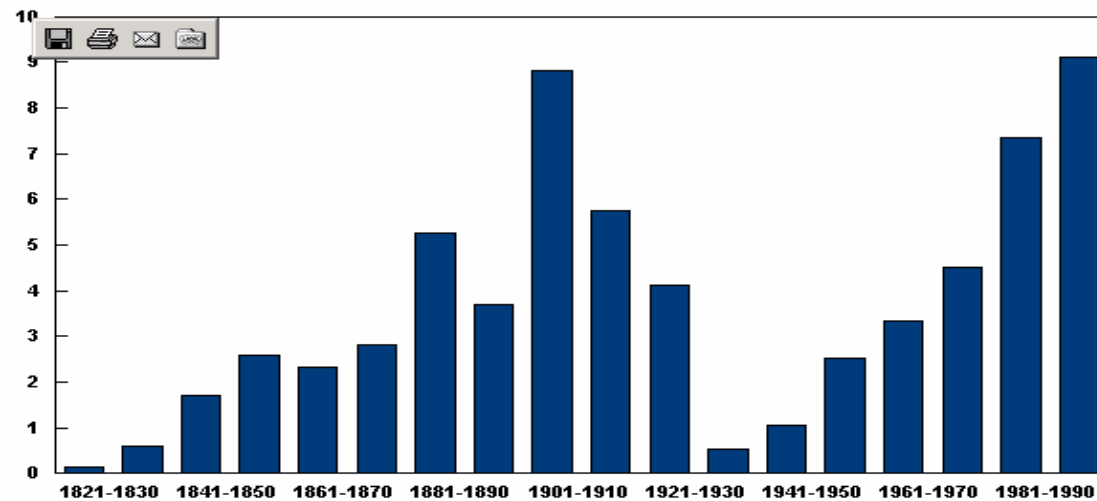
- The answer to #1 is C
-

Immigration (Legal)

Figure 2.

Immigration to the United States, 1821 to 2000

(Millions, by five-year spans)



Source: Department of Homeland Security, Office of Immigration Statistics, *2003 Yearbook of Immigration Statistics* (September 2004).

Note: Arrivals by land were not completely enumerated until 1908.

Aside from those admitted as legal immigrants, about 28,000 people were newly admitted as refugees in fiscal year 2003, and another 15,000 were granted asylum. Refugees normally apply for admission at an overseas facility (such as an embassy), and travel to the United States only after their application is

Question 2

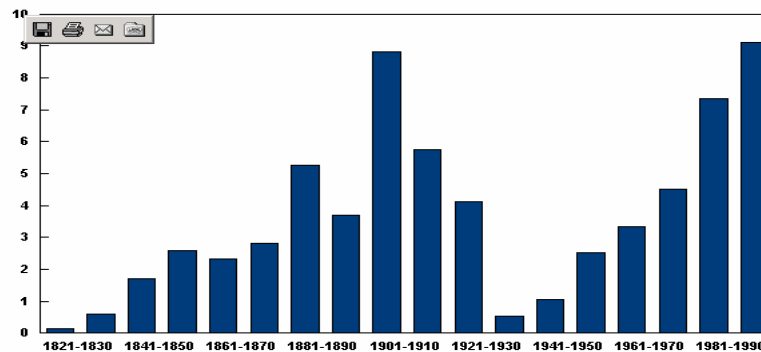


Sketch 91-95, 96-00, and 01-05 using the same scale.

Figure 2.

Immigration to the United States, 1821 to 2000

(Millions, by five-year spans)



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1991-1995 1996-2000 2001-2005

Are you Surprised?

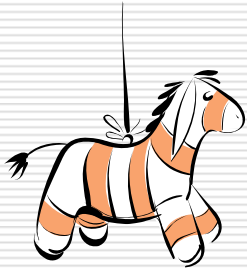
Use this data for **answer to # 2**:

91–95 5,228,126

96–00 3,852,402

01–05 4,802,056





Question 3



1. What are the most common foreign languages in Texas K-12 schools?

a. _____

b. _____

c. _____

d. _____

e. _____



What Languages do they Speak?

The answers, in order, are:

- Spanish
- Vietnamese
- Urdu
- Chinese
- Korean

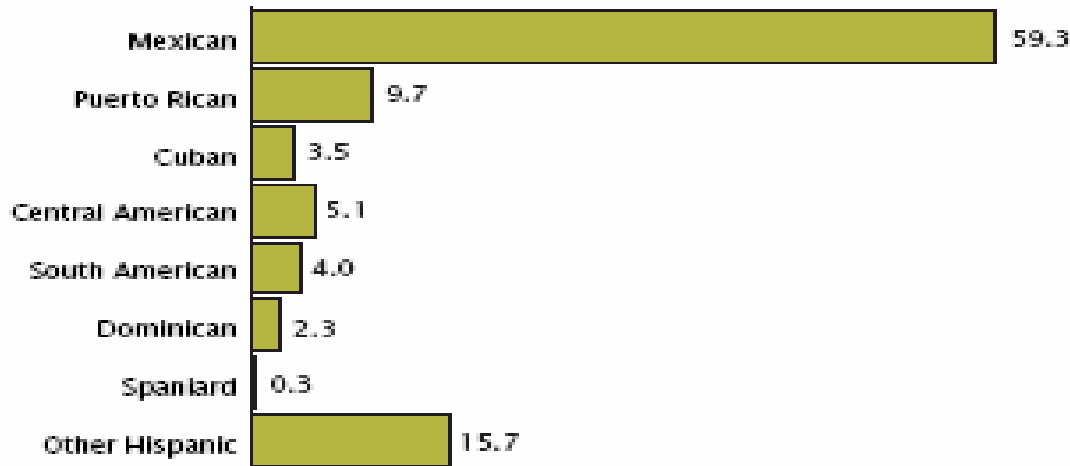


Country of Origin for Spanish Speakers

Figure 1.

Hispanic Population by Origin: 2000

(Percent distribution. Data based on sample. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see www.census.gov/prod/cen2000/doc/sf4.pdf)



Source: U.S. Census Bureau, Census 2000 Summary File 4.



PART I

- Who are the English Language Learners?
 - The English Language Learners are mostly Hispanic
 - The English Language Learners are mostly from Mexico
-



PART II

- What are the challenges ELL present math teachers?
-

Summary Report – TAKS

□ 11th Grade Mathematics 2005

(Percent that met standard)

- All Students 81%
 - Asian 93%
 - Hispanic 72%
 - Low SES 70%
 - Special Ed 50%
 - ELL 49%
-

Question 4



1. What percentage of teachers have received specialized training for ELL?
 - a. 12.5%
 - b. 21.2%
 - c. 32.6%
 - d. 42.6%
-

Need v. Training



- ❑ Out of the estimated 2,984,781 public school teachers, 41.2% teach English language learners.
- ❑ **12.5%** of teachers have received eight or more hours of related training.

National Center for Educational Statistics 1999-2000 Schools and Staffing Survey

- ❑ *The answer is # 2 is A*
-



PART II

- What difficulties do ELL present math teachers?

 - Answer
 - Students score very low on TAKS
 - Teachers have not been trained
-

Student Centered Learning

- The next questions are actual questions from an exit TAKS exam.
 - **First slide is the scenario!** Read it carefully then answer the questions.
-

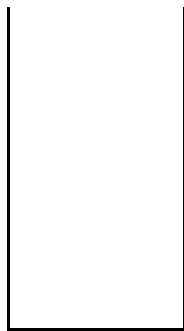
Explanation

Suppose you have a large glass in the shape of a right circular cylinder. You open the faucet a little bit, don't adjust it, and let the water flow at a constant rate. Now place the glass under the faucet because you want to know how the water level rises in the glass as time goes by.

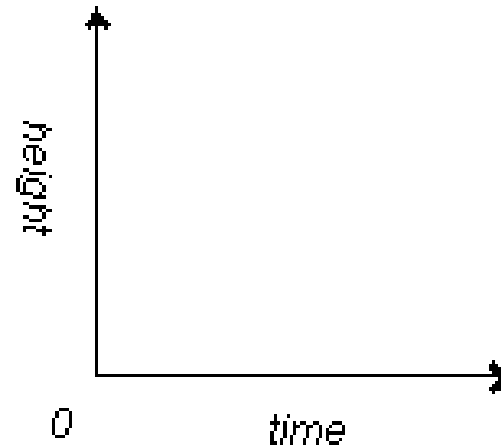


QUESTION 5

On the axes, make a graph showing how the height of the water in the glass changes over time.



glass





QUESTION 6 (three parts)

Justify the graph you just drew.

What is happening to the water level in the glass?

How is it changing?

Why?

Well, was it easy?

- Now imagine that you speak limited English.
 - What would that do to your test score?
-



PART II (revisited)

What are the difficulties presented by MELL?

1. They score low on state tests
 2. We (math teachers) are not trained to handle this situation
 3. They have difficulties with English and specifically the math register.
-



PART II

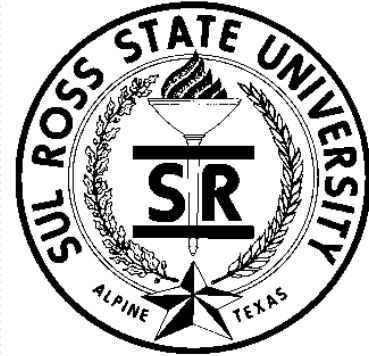
- How can we help ELL to be successful in mathematics?
-



PART II

- What does the scientific based research show?
 - Use the best practices available!
 - Learning Atmosphere & Physical Environment
 - Instructional Practices
 - Math Content and Curriculum
 - Language Practices
 - Family and Community Involvement
 - Assessment of Student Learning
-

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