

Regression with Dummy Variables

In addition to providing an equivalent to a one-way analysis of variance, regression with dummy variables can provide an important alternative to polynomial regression, or square root and logarithmic transformations, when nonspecific curvilinear relationships are encountered or suspected. In this latter application, an interval predictor variable with discrete values can be directly represented by dummy variables. As in the case of polynomial regression, the significance of the deviation from linearity can be tested by comparing the results of linear regression with the results of dummy regression.

From Glass & Stanley (1970), as in Kucer, S. (2005) p. 158.

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Think-Pair-Share

What makes this text so difficult?

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Basic Grammatical Analysis

1. **Words (lexical)** - basic, across disciplines, discipline-specific, new words
2. **Sentence structure (syntax)** - longer, embedded clauses, passive voice, hedging, nominalization, distance
3. **Use of language (socio-linguistics)** - new language functions (procedures, cause and effect, sequence, argumentation, analysis, etc.), register
4. **Texts (discourse/genre)** - specific discipline rules and traditions, text organization, transitions, word relationships
5. **Cognitive demands** - higher level thinking, background knowledge, strategies for communication, meta-level understanding of language learning
6. **Fluency** - reading, speaking, listening, writing

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BICS vs. CALP

- BICS (Basic Interpersonal Communication Skills)
 - Social language
 - Day to day
 - Context embedded
 - 2-3 years to develop
- CALP (Cognitive Academic Language Proficiency)
 - Formal academic language
 - Higher thinking, complex vocabulary
 - 6-7 years (10 years for students with no prior formal schooling)

(Cummins, 1981)

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Where does Academic Language exist?

- In instructional materials (textbooks, handouts, videos, websites)
- Teacher Talk
- Teacher-student/peer interactions (directions, explanations, questions, activities, requests)
- Tests

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Academic Language Supports

1. **Words (lexical)** - basic, across disciplines, discipline-specific
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4. **Texts (discourse/genre)** - specific discipline rules and traditions, text organization, transitions, word relationships
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Academic Word List

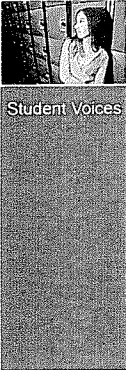
<http://www.uefap.com/vocab/select/awl.htm>

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Academic Language

- School is where you go to learn a secret language but they don't tell you that it's there. You have to figure it out on your own. It's like an initiation to a secret club. Maya, 8th grade.

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Academic Language

- Zwiers' describes academic language as "the set of words, grammar, and organizational strategies used to describe complex ideas, higher-order thinking processes, and abstract concepts" (p. 20).

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Tiered Vocabulary

Discipline-Specific	General Academic (7,000 words)
BRICK	MORTAR
Cell membrane	Generate
Enzyme	Analyze
Isotope	Accomplish
Mitosis	Heighten
Linear equation	Component
Theorem	Tend
Ozone	Require
Neuron	
Habitat	

Dutro and Moran (2003)

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Brick or Mortar?

What words will your students need to know by the time they graduate?

<http://www.uefap.com/vocab/select/awl.htm>

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The Life of a Star

It is commonly assumed that stars result from the astronomical condensation of massive clouds of cosmic dust and hydrogen gas, which is the lightest and most abundant element in the universe. Since there are many such clouds around, and there is no lack of hydrogen, the process of star formation out of interstellar matter is as natural in space as snow is on earth. Its catalyst is gravity, which according to Isaac Newton's theory of universal gravitation, causes all bodies to attract each other in proportion to their mass and distance from each other.

Thus, the hydrogen and dust particles in these enormous clouds are drawn together and gradually consolidate. Eventually, that is, this agglutinative tendency results in a mass that is held together by gravitation: as the cloud implodes, it separates itself from the residual hydrogen and dust in the area. Over time, the cloud will then shrink in size as its core increases in temperature. If the nascent star's mass is sufficiently dense, the core will become so hot as to cause a nuclear reaction, in which case the body achieves stardom.

<http://www.ncela.gwu.edu/pubs/cal/contentes/c-es16.htm>

Example: Student Work

- Steve in Monster got no future in the world he in. He broke the law got caught in a store spent jail and on trial. His future done gone away tho he ant convicted. It don't matter that he might notta done it. He got nothin now jail done shaped him. He cant escape his maybe action. Like the monster in Frankenstein he got no choice in what people do. Both Steve and the momster shaped by they society.

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Revision

- Steve, the main character in Walter Dean Myer's novel Monster, was not convicted of the crime he was accused of but he still has no future because of the appearance of being a convict. He is in a world that judges young men by the color of they skin. News stories about them. It will not matter to society that he was not convicted; he will always be a monster because of who he is. As a young, black man who has been in jail and on trial, he will be judged as monstrous because of how society will see him. He will always have the stigma of both trial and jail and won't be able to escape that. Similarly, the monster in Frankenstein will always be judged by his outward appearance. He looks scary and people don't know what to expect from him. Both Steve and the monster are products of their society and are judged and condemned by their society. It doesn't matter that they may be innocent; they have the appearance of being monsters by society's standards. Neither one of them will be able to escape the views of society.

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Further Reading

Use what your students know

Sh red Present

➔

General Report Removed

Informal oral

Informal written

➔

Formal oral

Formal written

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now what?
so what?
what?

Further Reading

- Freeman, S., & Freeman, E. (2009). *Academic Language for English Language Learners and Struggling Readers: How to Help Students Succeed Across Content Areas*. Portsmouth, NH: Heinemann.
- Marzano, R. J., & Pickering, D. J. (2005). *Building academic vocabulary: Teacher's manual*. ASCD.
- Zwiers, J. (2010). *Building reading comprehension habits in Grades 6-12: A toolkit of classroom activities*. Newark, DE: International Reading Association.
- Zwiers, J. (2007). *Building academic language: Essential practices for content classrooms, Grades 5-12*. CA: Jossey-Bass.

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AVID Strategies

Critical Reading Strategies:

- Cornell Notes
- Marking the Text
- Costa's Levels of Questions

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