Academic vocabulary and literacy
Exploring the relationship between academic language, reading comprehension and argumentative writing.

Joshua Fahey Lawrence
University of Oslo
Co-Authors

Catherine E. Snow
Patricia Albjerg Graham
Professor of Education
Harvard University

Jin Kyoung Hwang
Post Doctoral Scholar
University of California, Irvine

Karen Taylor
PhD Student
University of California, Irvine

Åste Hagen
Assistant Professor
University of Oslo

Grace Lin
Post Doc
University of Oregon

Arne Ola Lervåg
Professor
University of Oslo
Presentation Overview

Word Generation
Academic Words and Connectives
Study
Resources for Teachers
Academic Words

Connectives

- **Additive:** furthermore, in addition
- **Causal:** therefore, consequently
- **Temporal:** then, after that, finally
- **Adversative:** however, nonetheless
Monday
Introduce words in English class

Tuesday
Math activity with target words

Wednesday
Social studies debate

Thursday
Drawing inferences with data

Friday
Taking a position in writing
Is there a relationship between academic language and complex argumentation?

Word Generation: Theory of Action

Word Generation Curriculum

Teacher Knowledge
Engaging Topics
Structured Discussion
Purposeful Reading and Writing

Academic Language
Perspective Taking
Complex Reasoning

Deep Comprehension

Middle school literacy
Word Generation: Theory of Action

Word Generation Curriculum

Teacher Knowledge
Engaging Topics
Structured Discussion
Purposeful Reading and Writing

Academic Language
Perspective Taking
Complex Reasoning

Deep Comprehension

Middle school literacy
Word Generation

- Is the death penalty justified?
- Who is to blame for teen smoking?
- Should drugs be legalized?
- Who is responsible for high school dropouts?
An example...
I think the death penalty is justified. But some people are contrary to my opinion and want to prohibit the death penalty. I think that if you get the death penalty you deserved it and it should not be reversed. What if that person gets released from jail and starts killing more people. Advocates of the death penalty also say that it helps family find peace and I think I agree with that. I also think that if the entire country had the death penalty and gave it to who ever killed any and they gave the death penalty to that person quickly not two months later. Then a lot of people would not murder because they know they will be killed.

Topic: Is the death penalty justified?
I think the death penalty is justified. But some people are contrary to my opinion and want to prohibit the death penalty. I think that if you get the death penalty you deserved it and it should not be reversed. What if that person gets released from jail and starts killing more people. Advocates of the death penalty also say that it helps families find peace and I think I agree with that. I also think that if the entire country had the death penalty and gave it to whoever killed anyone and they gave the death penalty to that person quickly not two months later. Then a lot of people would not murder because they know they will be killed.
I think the death penalty is justified. But some people are contrary to my opinion and want to prohibit the death penalty. I think that if you get the death penalty you deserved it and it should not be reversed. What if that person gets released from jail and starts killing more people. Advocates of the death penalty also say that it helps families find peace and I think I agree with that. I also think that if the entire country had the death penalty and gave it to whoever killed anyone and they gave the death penalty to that person quickly not two months later. Then a lot of people would not murder because they know they will be killed.

Perspective Taking
I think the death penalty is justified. But some people are contrary to my opinion and want to prohibit the death penalty. I think that if you get the death penalty you deserved it and it should not be reversed. What if that person gets released from jail and starts killing more people. Advocates of the death penalty also say that it helps familys find peace and I think I agree with that. I also think that if the entire country had the death penalty and gave it to who ever killed any and they gave the death penalty to that person quickly not two months later. Then alot of people would not murder Because they know they will be killed.

Reasoning

- = Own side only argument
- = Dual perspective argument
Methods

2011-2012 School Year

Large West Coast Urban District

Students, n = 40

- 6 Sixth graders
- 16 Seventh graders
- 18 Eighth graders
- 60% Asian
- 22.5% White
- 7.5% Hispanic/Latino
- 2.5% Black/African American
- 7.5% Declined to state ethnicity

- 55% Free or reduced price lunch
- 37.5% English only (EO)
- 10% Initially English fluent (IFEP)
- 40% Redesignated English fluent (RFEP)
- 12.5% Limited English fluent (LEP)
Connectives: Connecting Ideas

Major classes of connectives

- **Additive**: furthermore, in addition
- **Causal**: therefore, consequently
- **Temporal**: then, after that, finally
- **Adversative**: however, nonetheless

Halliday & Hasan, 1976
<table>
<thead>
<tr>
<th>Argument type</th>
<th>Examples Drugs should be legal is the favored position</th>
<th>Examples Drugs should not be legal is the favored position</th>
<th>Number of essays employing argument type</th>
<th>Percent of cases employing argument type</th>
</tr>
</thead>
<tbody>
<tr>
<td>No argument</td>
<td>I think that drugs should be legalized.</td>
<td>Drugs shouldn't be legalized.</td>
<td>153</td>
<td>96.84</td>
</tr>
<tr>
<td>Own side only</td>
<td>If drugs were legalized, then the police will have more time paying attention to more serious crimes.</td>
<td>Drugs should stay illegal to prevent less people/teens from doing it.</td>
<td>136</td>
<td>86.08</td>
</tr>
<tr>
<td>Dual perspective</td>
<td>I believe too much people are getting arrested for drugs.</td>
<td>First of all, legalizing them would be incompatible with saving lives.</td>
<td>79</td>
<td>50.00</td>
</tr>
<tr>
<td>Integrative perspective</td>
<td>Other people might say that more people will die because of drugs [negative of favored position]. But, if the government puts a tax on drugs, the economy might get better [positive of favored position].</td>
<td>One might say it helps lower criminal violations [positive of the opposing position], but then there would be more deaths [negative of opposing position].</td>
<td>67</td>
<td>42.41</td>
</tr>
</tbody>
</table>
### Regression models by argument type:

<table>
<thead>
<tr>
<th>Argument type</th>
<th>Variable</th>
<th>( \beta )</th>
<th>Robust SE</th>
<th>( p )</th>
<th>( R^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Non arguments ( \beta = -0.291 )</strong></td>
<td>Total T-units</td>
<td>.686</td>
<td>.034</td>
<td>&lt;.0001</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Binary topics</td>
<td>-.809</td>
<td>.32</td>
<td>.015</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Additive</td>
<td>-18.369</td>
<td>8.168</td>
<td>.03</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Causal</td>
<td>-8.374</td>
<td>7.395</td>
<td>.264</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Adversative</td>
<td>32.32</td>
<td>18.959</td>
<td>.096</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Temporal</td>
<td>-5.108</td>
<td>9.38</td>
<td>.589</td>
<td></td>
</tr>
<tr>
<td><strong>Own side only arguments ( \beta = 1.050 )</strong></td>
<td>Total T-units</td>
<td>.199</td>
<td>.04</td>
<td>&lt;.0001</td>
<td>.81***</td>
</tr>
<tr>
<td></td>
<td>Binary topics</td>
<td>-1.466</td>
<td>.387</td>
<td>.001</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Additive</td>
<td>13.029</td>
<td>8.597</td>
<td>.138</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Causal</td>
<td>.596</td>
<td>8.671</td>
<td>.946</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Adversative</td>
<td>-28.77</td>
<td>19.316</td>
<td>.144</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Temporal</td>
<td>11.916</td>
<td>8.574</td>
<td>.172</td>
<td></td>
</tr>
<tr>
<td><strong>Dual perspective arguments ( \beta = -0.957 )</strong></td>
<td>Total T-units</td>
<td>.097</td>
<td>.02</td>
<td>&lt;.0001</td>
<td>.32***</td>
</tr>
<tr>
<td></td>
<td>Binary topics</td>
<td>2.221</td>
<td>.263</td>
<td>&lt;.0001</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Additive</td>
<td>5.993</td>
<td>4.542</td>
<td>.195</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Causal</td>
<td>7.735</td>
<td>5.945</td>
<td>.201</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Adversative</td>
<td>-23.679</td>
<td>11.696</td>
<td>.05</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Temporal</td>
<td>-2.717</td>
<td>6.868</td>
<td>.695</td>
<td></td>
</tr>
<tr>
<td><strong>Integrative perspective arguments ( \beta = 0.198 )</strong></td>
<td>Total T-units</td>
<td>.019</td>
<td>.011</td>
<td>.08</td>
<td>.43***</td>
</tr>
<tr>
<td></td>
<td>Binary topics</td>
<td>.054</td>
<td>.118</td>
<td>.647</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Additive</td>
<td>-0.653</td>
<td>2.605</td>
<td>.804</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Causal</td>
<td>.044</td>
<td>2.772</td>
<td>.987</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Adversative</td>
<td>20.13</td>
<td>6.931</td>
<td>.006</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Temporal</td>
<td>-4.09</td>
<td>3.885</td>
<td>.299</td>
<td></td>
</tr>
</tbody>
</table>

*\( p < .05; *** p < .001. \)
Conclusions and Implications

Higher order argumentation is difficult for students.

There is a connection between using connectives and higher order thinking and perspective taking.

We should try to support students’ use of connectives, and scaffold their higher order argumentation.
How to support vocabulary use and argumentation.
Want to learn more?

Want free resources in your inbox?

https://forms.gle/mNt1hHM9LDUcfYcaA

Contact Josh
joshua.lawrence@iped.uio.no