

The use of current events to enhance student learning in agricultural genetics

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Introduction

- ASI 500 Genetics
- Required by all ASI majors
- Also serves College of Agriculture
 - Primarily agronomy and horticulture
- Only pre-req is general biology



Introduction

- ASI 500 Genetics
 - Unit 1 - Mendelian inheritance, sex linkage, epistasis, pedigree analysis
 - Unit 2 - Chromosome structure, DNA structure and replication
 - Unit 3 - Transcription, translation, gene expression, biotechnology
 - Unit 4 - Genomics, quantitative and population genetics



Introduction

- Current events have potential to reinforce student learning
- Genetics is rapidly evolving, often in news
 - Mainstream
 - Ag related



Objectives

- Does the incorporation of current events papers enhance student learning?



Materials and Methods

- Approved by KSU Institutional Review Board
- Fall semester 2012- 121 students, no current events
- Fall semester 2013- 129 students, current events assignment



Materials and Methods

- Current events assignment
 - 5 different popular press articles related to genetics (current year)
 - Livestock, crop/horticulture plant, companion animal, exotic animal, human
 - Write 1 page paper describing the article and explaining how it related to concepts covered in class
 - Due at the end of semester



Materials and Methods

- Data collected
 - Pre-test and post-test for every unit (4)
 - Improvement from pre- to post-test
 - Survey at end of semester
 - Cumulative GPA
 - Date paper submitted
 - Species of paper



Materials and Methods

- Data analysis
 - General linear model of SAS (Cary, NC)
 - Model to analyze improvement included fixed effect of year and covariate of GPA



Results and Discussion

Variable	n	2012	2013	P-value
Cumulative GPA	250	3.08	3.00	0.3847
Improvement Unit 1	249	45.22	17.14	0.0001
Improvement Unit 2	237	34.08	39.73	0.0202
Improvement Unit 3	232	37.25	30.26	0.0001
Improvement Unit 4	238	39.61	21.23	0.0001
Average improvement	250	39.25	26.76	0.0001
Final percentage	250	77.73	75.12	0.0672



Results and Discussion

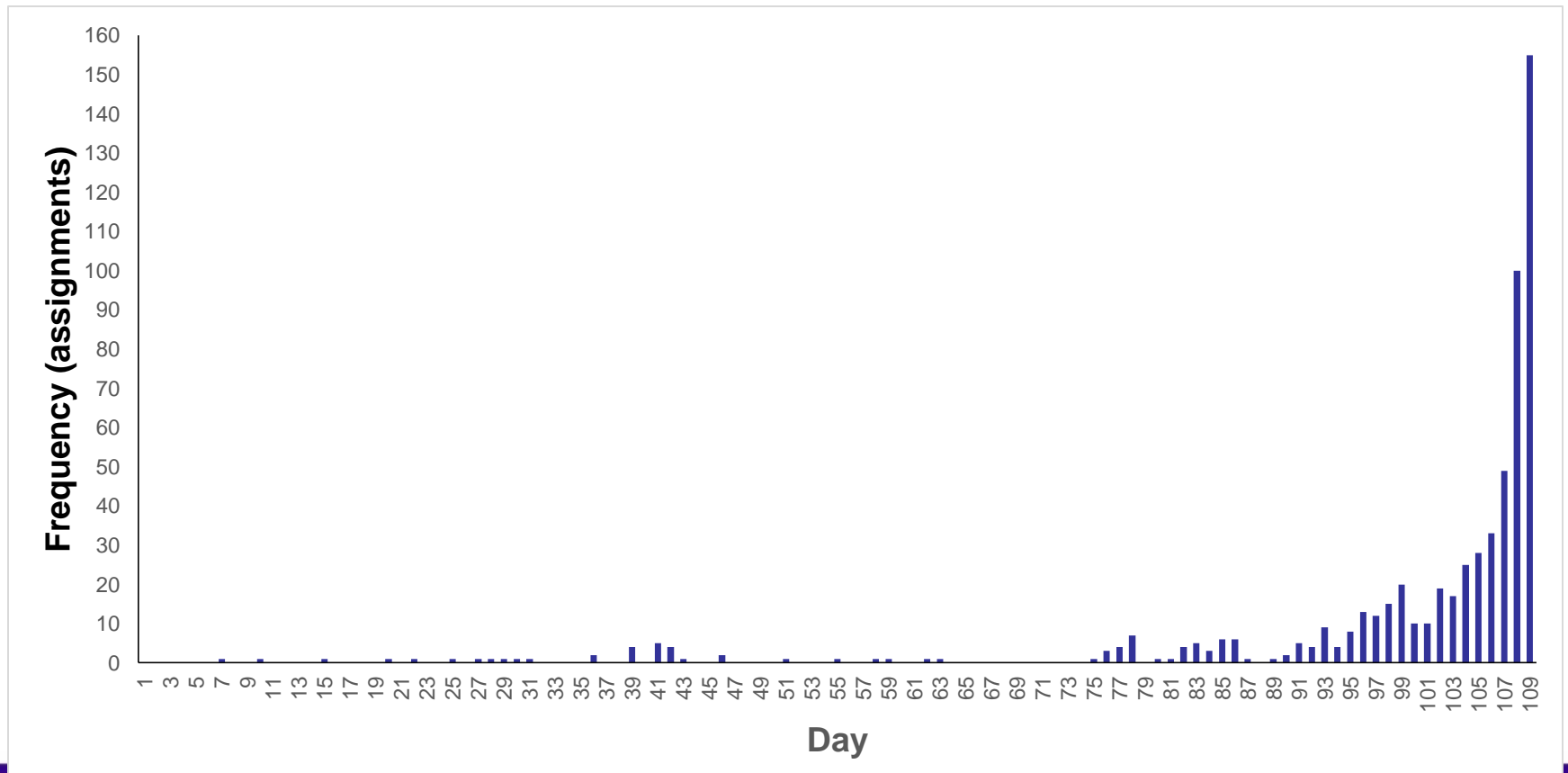
Student responses to survey question: On a scale from 1-5 with 1 being not helpful at all and 5 being extremely helpful, how useful were the current events articles in learning and reinforcing the concepts discussed in class?

Student response	Number	Percent
1 not helpful	17	16.2
2	19	18.1
3	36	34.3
4	25	23.8
5 extremely helpful	8	7.6



Results and Discussion

Number of current events assignments submitted by day of semester.



Species	Number of students	Percent of students	Number of articles	Percent of articles
Beef	81	61.83	35	6.04
Cat	50	38.17	2	0.35
Crops agronomy	50	38.17	29	5.01
Crops horticulture	39	29.77	13	2.25
Dairy	50	38.17	7	1.21
Dog	72	54.96	18	3.11
Exotic	46	35.11	30	5.18
Goat	39	29.77	1	0.17
Horse	73	55.73	25	4.32
Human	45	34.35	321	55.44
Poultry	36	27.48	1	0.17
Sheep	39	29.77	0	0
Swine	40	30.53	2	0.35

Results and Discussion

- Survey question: Did you find the majority of articles for class in your regular reading, OR specifically go looking for articles just to complete the assignment?
 - 89.8% went searching for articles
 - 10.2% found articles in regular reading



Results and Discussion

- Survey question: How many magazine/newsletter/periodicals (print or electronic) related to your specie(s) of interest do you read regularly?
 - Average response = 1.8



Implications

- Student learning was not improved by incorporation of current events articles
 - Timing of articles may have impacted
- Future work
 - Staggered due dates
 - Require articles about livestock/crops

