

Supporting Information

Challenges of Globalization and Successful Adaptation Strategies in Implementing a ‘Scientific Writing and Authoring’ Course in China

Kaidi Yang,^{†,§} Cun-Yue Guo,^{‡,*} and Rainer E. Glaser^{#,†,‡,*}

[#]Department of Chemistry, Missouri University of Science and Technology, Rolla, Missouri 65409, U.S.A.,

[†]Department of Chemistry, University of Missouri, Columbia, Missouri 65211, U.S.A.,

[‡]School of Chemistry and Chemical Engineering, University of Chinese Academy of Sciences, 19A Yuquan Road, Shijingshan District, Beijing 100049, P.R. China, and

[§]Department of Chemistry, Northwestern Polytechnical University, 127 Youyi West Rd., Beilin District, Xi’an, Shaanxi, P.R. China

Email: glaserr@mst.edu, cyguo@ucas.ac.cn

Table of Content

Table S1. Writing and Authoring Skills in the Assignment-Based Curriculum	S2
Table S2. Detailed version of Table 3: Student Teaching Evaluations at UCAS, Summer Programs 2011 to 2016	S3
Table S3. Detailed version of Table 4: Frequency Analysis of Student Teaching Evaluation Comments at UCAS, Summer Programs 2011 to 2016	S4

Table S1. Development of Writing and Authoring Skills in the Assignment-Based Curriculum

Task	Scientific Writing Skills (SWS)				Standard Scientific Sequence (SSS)					APC ^f
	Text	Art	DDA ^a	IAS ^b	Intro.	MMA ^c	R&D ^d	Concl.	Abs. ^e	
A01a	X			AP	X					
A01b	X			AP	X					
A02	X	X		AP	X					
A03	X	X	X	AP		X	X			
A04	X	X	X	AP		X	X			
A05	X	X	X	SST1	X	X	X	X		
A06	X	X	X	SST1	X	X	X	X		
A07	X	X	X	SST1	X		X			
A08	X	X	X	SST2	(X)	X				
A09	X	X	X	SST2	X	X	X	X	TAbs	CLS
A10	X		X	SST2						PR
A11	(X)	X	(X)	(SST2)	(X)	(X)	(X)	(X)	GAbs	CLR

^aDDA stands for “Documentation of Data and Analysis”.

^bIAS stands for “Information Access and Search”. At the AP level, the students learn to access provided sources. At the SST1 level, students search information about a selected topic from an instructor-provided pool of possible topics. At the SST2 level, the students search and select information about a selected topic from an instructor-provided pool of primary sources in the theme area of the course.

^cMMA stands for “Materials and Methods, and Appendix”.

^dR&D stands for “Results and Discussion”.

^eTextual Abstracts (TAbs) and Graphical Abstracts (GAbs) are distinguished.

^fAPC stands for “Author’s Publication Correspondence” and includes cover letter submission (CLS), peer reviews (PR), and cover letter revision (CLR).

Table S2. Comparative Teaching Evaluation Results from UCAS Students Enrolled in the Summer Scientific Writing Programs, 2011 to 2016

Evaluation Categories	Evaluation Criteria by Item Number ^a	Course #1					Course #2			
		SS11	SS12	SS13	SS14	SS16	SS11	SS12	SS13	SS14
<i>Teaching Attitudes</i>	1) Rigorous manner, well-prepared contents, careful knowledge impartation	3.94	3.99	3.99	3.96	3.94	3.91	3.94	3.99	3.96
	2) Sufficient grasp and understanding of the course	3.92	3.98	3.96	3.95	3.94	3.89	3.93	3.95	3.93
	3) No adverse effects of suspended classes and adjustment on the lecture	3.90	3.99	3.98	3.97	3.92	3.89	3.93	3.98	3.96
<i>Teaching Contents:</i>	4) Conformation to the syllabus	3.89	3.99	3.95	3.96	3.92	3.88	3.89	3.99	3.94
	5) Proper emphases, details, and omissions	3.84	3.97	3.95	3.92	3.91	3.84	3.93	3.99	3.97
	6) Introduction of frontier and hot issues in this discipline	3.86	3.92	3.95	3.9	3.88	3.85	3.85	3.99	3.92
<i>Teaching Methods:</i>	7) Enlightening, discriminative, vivid in speech, inspiring in students' initiative	3.87	3.96	3.95	3.94	3.9	3.84	3.91	3.95	3.96
	8) Attentive to the combination of knowledge impartation and ability (skill) training	3.88	3.96	3.98	3.93	3.91	3.87	3.85	3.94	3.96
	9) Rational arrangement of homework or extracurricular reading	3.87	3.97	3.92	3.95	3.91	3.84	3.85	3.96	3.97
<i>Teaching Outcomes:</i>	10) Realization of teaching goal and demands and enhancement in students' learning capacity	3.89	3.97	3.95	3.93	3.91	3.88	3.87	3.95	3.93
	11) Gains and improvement through this course	3.86	3.92	3.95	3.94	3.92	3.87	3.89	3.99	3.97
	<i>Comprehensive evaluation by students^b</i>	3.92	3.97	3.96	3.96	3.93	3.87	3.87	3.99	3.96
	Enrollment	108	118	197	168	313	102	78	103	107
	Evaluations returned	99	93	170	137	285	92	54	84	90
	Eval's Ret'd by Percent of Students at EoS [%]	91.7	78.8	86.3	81.55	91.05	90.2	69.2	81.6	84.11

Note: Evaluation criteria translated from Chinese to English by the author, KY. ^aStudents rated the teacher using a five-level Likert scale (“excellent”, “good”, “medium”, “qualified”, “unqualified”; 4–0, 4 is high). ^bComprehensive evaluation score is the average of the overall evaluation scores given by the students.

Table S3. Frequency Analysis Results of Student Comments on Teaching Evaluations for UCAS Students Enrolled in the Summer Scientific Writing Programs, 2011 to 2016

Comment Categories	Criteria of Evaluation	Course #1					Course #2				Total	Perc.
		'11	'12	'13	'14	'16	'11	'12	'13	'14		
<i>Teaching Attitudes</i>	teacher is humorous	8	13	17	25	71	9	2	8	14	57	9.63
	course is well prepared	4	7	11	8	18	8	2	8	4	40	6.76
	teacher has sufficient grasp and understanding of the course	2	4	9	1	5	0	3	6	2	24	4.05
	teacher is captivating	1	0	4	3	8	0	6	4	2	15	2.53
	teacher lectures in a witty manner	1	0	6	0	2	1	1	2	0	11	1.86
	teacher is enthusiastic	1	1	3	0	0	0	1	0	0	6	1.01
<i>Teaching Contents</i>	the knowledge is practical	5	4	10	13	38	6	2	9	14	36	6.08
	rich in content	6	11	4	10	27	8	3	3	4	35	5.91
	provides a good overview with sufficient detail	3	2	12	15	9	2	3	6	6	28	4.73
	the knowledge is useful	6	2	8	0	6	0	3	6	6	25	4.22
	course covers a broad range	2	4	7	3	18	2	1	3	0	19	3.21
	frontier and hot issues discussed in class	4	0	3	0	2	0	1	2	1	10	1.69
	the course is interesting	1	0	4	0	4	2	0	2	1	9	1.52
<i>Teaching Methods</i>	vivid in speech	15	12	24	21	29	14	8	18	13	91	15.37
	discriminative teaching and learning methods	12	9	15	18	13	12	7	15	11	70	11.82
	topics explained in detail	5	7	16	11	21	4	1	4	2	37	6.25
	nice class climate	4	3	12	16	16	4	5	6	5	34	5.74
	topics explained meticulously	3	6	7	15	13	0	1	5	9	22	3.72
	examples and deeds used in the course	1	6	6	3	18	4	2	2	2	21	3.55
	rigorous manner	3	5	8	4	10	2	1	1	3	20	3.38

	scrupulous manner	2	5	6	3	4		1	1	4	4		19	3.21
	good pronunciation	2	1	5	2	0		1	1	6	0		16	2.70
	inspires students to think deeper	2	2	6	3	12		5	0	0	4		15	2.53
	positive faculty-student communication	0	0	1	0	0		0	0	2	0		3	0.51
<i>Teaching Outcomes</i>	improvement and gain of knowledge	11	9	12	26	8		3	8	11	5		54	9.12
	beneficial for our future	5	10	18	7	7		4	5	7	4		49	8.28
	course reaches the teaching goals	7	5	4	6	5		7	1	1	3		25	4.22
	ability/skill training	7	3	7	3	6		4	0	3	3		24	4.05
	improve English listening ability/comprehension	2	6	2	10	10		7	0	5	6		22	3.72
	improve our understanding of prior knowledge	2	4	3	0	0		3	4	4	0		20	3.38
	improve English ability	3	5	1	16	13		3	1	5	20		18	3.04
	hope more course like this would be held	0	0	2	0	0			0	1	3		3	0.51
Total Count of Evaluations		99	93	170	137	285		92	54	84	90		592	100.00

Note: Comment topics translated from Chinese to English by the author (KY).