**Academic Writing**

Courses in EAP teach typical scientific article structures

A variety of English proficiency issues:

* + sentence structure
	+ proper punctuation,
	+ vocabulary usage.

The academic writing style:

* + concise and formal
	+ employs technical language

Academic Genres:

scientific papers

Books

Reviews

letters.

language of writing scientific papers for peer reviewed journals in terms of self-mentioning (Hyland, 2001), hedging (Hyland, 1996; Hyland,2007), meta-discourse1(Hyland & Tse, 2004), lexical bundles2(Chen & Baker, 2010), and plagiarism (Pecorari, 2003)

**Gap in Teaching Graduate Students**

Few academic writing programs that focus on graduate students, the scientists of the future (Crone et al., 2011)

**science communication courses and workshops**

 scientists (having training and often extensive experience in academic writing to enable them to better communicate (Royal Society, 1985).

**The Need:**

create a rubric to assess advanced academic and popular science writing.

**Rubrics are used for:**

* instruction and evaluation (Andrade, 2005),
* the use of rubrics in teachingand learning (e.g. Osana & Seymour, 2004; Reitmeier, Svendsen, & Vrchota, 2006),
* evaluating programs (Dunbar, Brooks, &Kubicka-Miller, 2006; Knight, 2006)
* assessing student work (Campbell, 2005; Reddy & Andrade, 2009)
* and identifying the effectiveness of courses and areas for improvement in instruction (Dunbar et al., 2006; Reddy & Andrade, 2009; Song, 2006).

**Gap in knowledge**

* no rubrics for academic writing courses for graduate students and their outcomes
* those that have assessed such courses tend to employ a range of assessment devices, including error and vocabulary analysis (Boscolo, Arfé & Quarisa, 2007; Ferris & Roberts, 2001; Storch & Tapper, 2009)
* there are few studies on assessing popular science writing (Baram-Tsabari & Lewenstein, 2013)
* almost no systematic evaluationof learning outcomes in training programs (Baram-Tsabari & Lewenstein, 2016)
* despite the fact that the number of science communication courses at the university level is rising (COMPASSonline, 2013)

a lack of research on the development of writing scales(Banerjee, Yan, Chapman, & Elliott, 2015; Knoch, 2009b, 2011; Lallmamode, Mat Daud, & Abu Kassim, 2016; Sasaki & Hirose,1999

**Rubrics: the rationale**

* rating specific goals of graduate level academic writing in advanced L2 students

**Includes:**

* acquisition of a contrasting style, i.e. mock science writing.

**Benefits:**

a more standardized evaluation of writing outcomes that can be easily applied to assess the progress and effectiveness of a graduate writing course

Exiting Rubrics

The most common rubric types are ***holistic*** and ***analytic***.

**Holistic rubrics:**

 assess the overall quality of a student writing outcomes, providing a single score (Crusan, 2010).

**The analytic rubric:**

based on multiple scales for assessing writing, and can be designed for a specific writing assignment, audience, and purpose (Crusan, 2010).

For assessing writing tasks, ***analytic rubrics*** should be either theoretically (as on current Second Language Acquisition (SLA) theory), empirically, or syllabus based (Alderson, 2005). Turner and Upshur (2002) and Upshur and Turner (1995) also argue that rubrics devised using L2 writing test outcomes are preferred over the theoretically based, which have been shown to produce scores with low reliability and validity

**Rubrics Development**

**analytic scale**

descriptors, i.e. aspects of writing which are to be rated, must be decided upon by the scale developer based on criteria aimed to be measured.

The scoring levels of these descriptors maybe quantitative: shorter scales, rating descriptors on scales ranging from 3 to 5 points, were found to be effective (Boettger, 2010; Eckes, 2008; Myford, 2002; Plakans & Gebril, 2013; Stevens & Levi, 2005).

 The scores can be reported separately, combined and/or weighted (Knoch, 2011).

Syllabus- and empirically-based analytic rubric follows this by using a 1–4 scale for rating writing descriptors separately and in combination for a genre index.

**Development Stage**

Crusan (2010), syllabus as suggested by Alderson(2005) that include:

* developing course goals
* choosing assessment tasks to fit these goals
* setting the standards for these tasks and goals
* developing criteria to assess performance
* rating values for analytic scoring

**Case:**

*Writing To make a long story short: A rubric for assessing graduate students’ academic and popular science writing skills*

Tzipora Rakedzon∗, Ayelet Baram-Tsabari Department of Education in Science and Technology, Technion-Israel Institute of Technology, Haifa 32000

**Rubrics:**

* Coherence
* Readability
* Vocabulary : jargon, verb choice, wordiness
* Active and passive voice
* Hedging: Words of uncertainty
* Format
* Methods
* Application, Implications
* Definition and Explanation
* Other style devices: narrative, humor, analogy

**Writing Tasks**

four written tasks and a pre and post task, submitted for instructor feedback.

**three academic tasks, and one ‘professional’ task:**

* + summarizing and paraphrasing of the literature
	+ writing an introduction
	+ writing results

**professional task**

* + a formal cover letter
	+ writing a press

**pre and post task asked for two writing samples**

each sample required a different style (academic or popular science) and the respective genre (abstract or press release).

The instructions stated: “Describe your research, its context and implications in English for (A) a general audience (no science background) and (B) the academic community, in 150–250 words each”

**Standards & Goals, Criteria**

**The standards and goals of each task were twofold:**

genre structure

English writing proficiency

**Developing criteria to assess performance**

15 descriptors

Criteria (descriptors)

1. Wordiness
2. Verb choice
3. Coherence
4. Correct tenses
5. Active/passive voice
6. Jargon
7. Hedging
8. Mention methods
9. Analogy
10. Humour
11. Readability
12. Content/facts
13. Narrative
14. Definition/ explanation
15. Example/ application
16. Readability

**Validity tests**

* Intraclass Correlation Coefficient
* 95% Confidence Interval
* F Test with True Value

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