

TENSE SHIFT AND RHETORICAL FUNCTION IN THE ABSTRACT SECTION OF SCIENCE JOURNAL BY NON-NATIVE SPEAKERS

Suharno
Diponegoro University

ABSTRACT

Abstract is an important part of scientific work for both seminar presentation and journal publication in national or international level. Every writer is obliged to write an abstract for his/her publication. The aim of this study was to examine a number of abstracts in English scientific papers by non-native speakers (Indonesian lecturers). The study was focused on the linguistic and organizational features (i.e. tense shift and rhetorical function). The research results show that a number of abstracts in the data do not conform to the principles of abstract writing, that is some abstracts do not contain complete moves. In addition, the rhetorical shift is not always followed by the tense shift.

Key words: abstract, tense shift, rhetorical function, move analysis

INTRODUCTION

Writing scientific papers for publication is one of the main tasks of university lecturers. They must write articles or books in order to survive; writing articles especially writing scientific article in English might also help them promote their career and prestige as lecturers. The reason is that university regulations are not yet severe – unlike universities in developed countries (e.g. USA) with a “publish or perish” principle – or they are not well motivated to write articles. In Indonesia, only a small number of lecturers in each university publish articles in international academic journals, or participate in international conferences. This lack of productivity may be due to the following reasons: they rarely practice writing in English; they still have language problems; and/or they do not have any motivation to improve themselves. However, it is likely that writing scientific or academic papers, especially in English for international seminars or journals is still the hardest work for many Indonesian university lecturers, including Diponegoro University lecturers. Accordingly, in general, Indonesian university lecturers or

scientists have not yet got a significant presence in international scientific journal publications. A survey published by *Scientific American* indicated that in 1994 the contribution of Indonesian scientists and scholars to the body of world knowledge, science, and technology annually represents only 0.012%, which is far below Singapore which contributes 0,179%, and highly insignificant if compared to that of the US scientists and scholars which amount to over 20%. (Mien A. Rifai, 2008).

Another disappointing fact is that a survey about ranking of college or universities in Asia by *Asia Week* magazine (May, 1997) showed that a few famous universities such as Gadjah Mada University (UGM), Indonesian University (UI), Institute of Technology Bandung (ITB), Institute of Agriculture Bogor (IPB), Diponegoro University (UNDIP) attained low scores for contributing to international scientific journal publications in spite of being ranked 40th rank among colleges and universities in Asia.

In the globalization era (the 21st century) a foreign language competence, especially English is important if one hopes to participate in

international affairs through both spoken written media. The university lecturers who master both spoken and written English have the potential to self-develop and improve their institution's quality. And improving the English competence of lecturers is also in line with the UNDIP's vision, that is "To be an Excellent Research University in 2020" (Rencana Strategis Bisnis, 2008: 4). UNDIP's vision is far from being realized since the criteria for being a research university are very tough to achieve. In this regard, *Carnegie Classification in the US for Research Universities* stipulates four criteria: (1) Freedom in the academic and management affairs, (2) Ability to produce more than 50 doctorates (Ph.D. holders) per year, (3) Ability to generate income US \$ 40-50 millions per year for a level 1 research university and US\$ 15 millions per year for a level 2 research university, and (4) Publication of scientific or research work in international journals (*Kompas*, Thursday, 23 September 2004, p. 4 "Humaniora").

UNDIP's vision to become a world-class research university is also influenced by the Lima Declaration which was issued in Lima, Peru in 1989 after a forum that was attended by university rectors/presidents around the world. The Declaration names two criteria for excellence: academic freedom and higher education autonomy. UNDIP's vision is also shaped by Higher Education document which contains Higher Education Long Terms Strategy (HELTS 2003-2010) – a reference for developing Indonesian higher education in the future. In HELTS 2003-2010 it is mentioned that the development of Indonesian Higher Education will focus on three main issues: improving nation's competitiveness, autonomy of education management, and improving organizational health in managing higher education (Forum Sastra dan Budaya III, 2004: 3).

As a teacher of Service English Unit (SEU) Diponegoro University, I noticed that writing abstract is one of the major problems for EAP class participants (Diponegoro University lecturers). Abstract is an essential part of journal articles, and a journal editor usually requires abstract if a lecturer sends an article to the journal editor for publication. Writing abstract can be a problem for an inexperienced lecturer. Therefore, this project is intended to gather information which might be used to assist the design of an academic writing course for lecturers of Diponegoro University who have potential to take postgraduate studies in English-speaking countries (e.g. Britain, USA, Australia, etc.) The course participants may come from different faculties, e.g. medicine, engineering, marine sciences, economics, fisheries, etc.

REVIEW OF RELATED LITERATURE

Abstract is an essential section in research articles. According to Packham et al (1985:57) "the abstract is used to let readers know quickly what your assignment says. It is a brief summary of the whole paper. It is placed right at the front immediately after the title page. It should normally be 100-125 words long and should be written as a single paragraph." Meanwhile, Stapleton (1987:21) states that the readers will only pay attention to the abstract after the readers have been attracted to the paper by the title. As the abstract should be written briefly, some students/participants (i.e. university lecturers) find difficulty in writing it. This may be due to partly, linguistic features such as tense shifts which are quite common in academic English. Another problem may be emotional: "abstracts are in general expected to be non-evaluative, non-emotive, yet it is difficult sometimes to be entirely neutral when attempting

to describe one's own work" (Gutkowski and Urquhart, 1989:1).

Another language practitioner, Graetz (1985) did research in Abstract section. He collected 87 samples of abstract section selected from a number of scientific journals. Eight journals were taken from health science, 13 from social sciences, 5 from education, and 15 from humanism. In his research, he focused on the opening sentences and concluding sentences. His research in the opening sentences can be grouped in the 'syntactic-grammatical' and 'semantic-rhetorical' categories. The first two groups use 'passive construction' or 'perfect tense' to elaborate topics, procedures, or problems on the opening sentence. The third and fourth groups use 'thesis statement' and the fifth group contains sentences referring to the author (allusion to authority). While the concluding sentences are divided into two groups: 'closed-absolute' and 'open-uncertain'. In terms of organization, Graetz (1985) defines abstract as follows :

It should be continuous narrative, written in whole sentences. It should not use separate paragraphs for the commonly recurring features of the problem, summary, introduction, method, etc. It should reflect the organization of the article, by following the exact order if possible. It should provide more information than the title. The title should not be repeated. The abstract should be brief, not waste words, yet be long enough to convey the author's concept. It should be non-critical and unbiased; it is not a review. It should be unambiguous, intelligible, readable, and a complete item in its own right. It should be written in the author's own language (as far as possible).

While in terms of the language of abstract, Graetz (1985:125) in Swales (1990) states as follows :

The abstract is characterized by the use of past tense, third person, passive, and the non-use of negatives. It avoids subordinate clauses, uses phrases instead of clauses, words instead of phrases. It avoids abbreviation, jargon, symbols and other language shortcuts which might lead to confusion. It is written in tightly worded sentences, which avoid repetition, meaningless expressions, superlatives, adjectives, illustrations, preliminaries, descriptive details, examples, footnotes. In short, it eliminates the redundancy which the skilled reader counts on finding in written language and which usually facilitates comprehension.

According to Day (1979), in terms of function abstract can be divided into two types: informational and indicative. The first type is designed to encapsulate the paper; so it can and should briefly state the problem. The method is used to study the problem, and the principal data and conclusions. The second type is sometimes called a descriptive abstract and is designed to indicate the content of a paper, essentially serving as a table of content, making it easy for potential readers to decide whether or not to read the paper. Because of its descriptive rather than substantive nature, it should not be used as abstracts in research papers, but it may be used in other types of publication (review papers, conference reports, the government report literature, etc.).

Day proposes (1979) four features or moves which should exist in abstract sections, especially informational abstracts. The following moves are as follows:

Move one : The principal objectives/scope of the investigation

Move two : The methods/procedures employed

Move three : Summary of the results

Move four : The principal conclusions

Meanwhile Weissberg and Buker (1990:186) proposes five features or moves and verb tense

choice in abstract sections as described in Tables 1 and 2.

Table 1
Five moves in the abstract section

Order of Typical Elements Included in an Abstract
B = some background information
P = the principal activity (or purpose) of the study and its scope
M = some information about the methodology used in the study
R = the most important results of the study
C = a statement of conclusion or recommendation

Table 2
Tense choice in the abstract section

Tense Choice in the Abstract Section
B - Background information (present tense) e.g. One of the basic principles of communication <i>is</i> that the message should be understood by the intended audience.
P - Principal activity (past tense/present perfect tense) e.g. In this study the readability of tax booklets from nine states <i>was evaluated</i> . Net energy analyses <i>have been carried out</i> for eight trajectories which convert energy source into heated domestic water.
M - Methodology (past tense) e.g. Children <i>performed</i> a 5-trial task.
R - Results (past tense) e.g. Older workers <i>surpassed</i> younger ones in both speed and skill jobs.
C - Conclusions (present tense/tentative verbs/ modal auxiliaries) e.g. The results <i>suggest</i> that the presence of unique sets of industry factors <i>can</i> be used to explain variation in economic growth.

(Weissberg & Buker, 1990: 192)

Example :

Composing Letters With A
Simulated Listening Typewriter

Background	ABSTRACT ¹ With a listening typewriter, what an author says would be automatically recognized and displayed in front of him or her. ² However, speech recognition is not yet advanced enough to provide people with a reliable listening typewriter. ³ An aim of our experiments was to determine if an imperfect listening typewriter would be useful for
Purpose	

Method	composing letters. ⁴ Participants dictated letters, either in isolated words or in consecutive word speech. ⁵ They did this with simulations of listening typewriters that recognized either a limited vocabulary or an unlimited vocabulary. ⁶ Results indicated that some versions, even upon first using them, were at least as good as traditional methods of handwriting and dictating. ⁷ Isolated word speech with large vocabularies may provide the basis for a useful listening typewriter.
Results	
Conclusion	

In addition to the features of abstract described above, Cooley and Lewkowicz (2003:112) quoted in Paltridge & Starfield (2007: 155) define the Abstract of thesis and dissertation as follows :

The Abstract is written after the research has been completed and the writer knows exactly what is contained in the body of the text. It is a summary of the text and it informs readers of what has been found in the dissertation and in what order, functioning as an overall signpost for the reader. Although it is the last part of a dissertation to be written, it is generally one of the first a reader will look at. Indeed, if the Abstract is not well written, it may be the only part of the dissertation a reader will look at.

According to Paltridge and Starfield (2007: 155), in general the abstract is intended to give an overview of the study which answers the following questions:

- What was the general purpose of the study?
- What was the particular aim of the study?
- Why was the study carried out?
- How was the study carried out?
- What did the study reveal?

Then from the questions above, a typical structure of an abstract can be described as follows :

- Overview of the study;
- Aim of the study;
- Reason for the study;

- Methodology used in the study;
- Findings of the study

CORPUS

This research deals with a number of English scientific research papers (mostly published journal articles) written by non-native speakers (Indonesian lecturers from several engineering faculties). I selected 20 papers from five universities/institutions: UNDIP Semarang, UI Depok Jakarta, UGM Yogyakarta, ITB Bandung and ITS Surabaya and four papers for each institution. The papers could be grouped as English for Science and Technology (EST) since they were selected at random from several engineering majors: papers I-IV/UNDIP (civil engineering, electrical engineering, chemical engineering, and architecture), papers V-VIII/UGM (civil engineering, mechanical engineering, chemical engineering, and architecture), papers IX-XII/UI (electrical engineering, chemical engineering, metallurgy and material engineering, industrial engineering), papers XIII-XVI/ITB (mechanical and aero space engineering, civil and environmental engineering, electrical engineering, and chemical engineering), and papers XVII-XX/ITS (mechanical engineering, electrical engineering, chemical engineering, and architecture). For ease of reference, I would refer to the papers as (e.g. papers I-UDP, V-UGM, IX-UI, XIII-ITB, XVII-ITS etc.) meaning it was written by UNDIP lecturers for UDP, and by UGM, UI, ITB, ITS

lecturers. The following are the chosen papers (Table 3).

Table 3
The Corpus

Code Number	Title	Major
I-UDP	Agung Wibowo. The Contribution of the Construction Industry to the Economy of Indonesia: A System Approach.	Civil Engineering
II-UDP	Saleh Agus Rosanto et al. The Powerline Communication-Based Computer Networking is the Solution for Computer Network Installation. Proceedings of 2008 Student Conference on Research and Development (SCORED 2008), 26-27 Nov. 2008 Johor, Malaysia	Electrical engineering
III-UDP	Tutuk Djoko Kusworo, et al. The Effect of Type Zeolite on the Gas Transport Properties of Polyimide-Based Mixed Matrix Membranes. <i>Reaktor</i> , Vol. 12 No. 2, Desember 2008, Hal. 68-77.	Chemical Engineering
IV-UDP	Suzanna Ratih & Edy Darmawan. A Development Plan for Tourism Potentials in Coastal Area of Ujungnegoro, Batang Regency. Received: February 2, 2005; Accepted: May 25, 2005.	Architectural Engineering
V-UGM	Suprpto Siswosukarto. Study for Determination of Coefficient of Thermal Expansion of Concrete at Early Ages. <i>Media Teknik</i> No. 1 Tahun XVIII Edisi Februari 2006 No. ISSN 0216-3012	Civil Engineering
VI-UGM	Muhammad W. Wildan. Thermal Diffusivity of Zirconia/Iron Composites. <i>Media Teknik</i> No. 3 Tahun XXVII Edisi Agustus 2005 No. ISSN 0216-3012.	Mechanical Engineering
VII-UGM	Crescentiana Dewi Poeloengasih et al. Isolation and Characterization of Chitin and Chitosan Prepared under Various Processing Times. <i>Indo. J. Chem.</i> , 2008, 8 (2), 180-192.	Chemical Engineering
VIII-UGM	Sudaryono. Production of Settlements on the Basis of A Spiritual Space: A Case Study of Parangtritis Settlement of Yogyakarta, Indonesia. <i>Media Teknik</i> No. 4 Tahun XXX Edisi Nopember 2008 ISSN 0216-3012.	Architectural Engineering
IX-UI	Kalamullah Ramli et al. Integrating Passenger and Modulo as Learning Tools for Collaborative Engineering Education. <i>Makara, Teknologi</i> , Vol. 6., No. 1, April 2002.	Electrical Engineering
X-UI	Anondho Wijanarko. Alteration of Light Illumination during Cyanobacterial Growth. <i>Jurnal Teknologi</i> , Edisi No. 2, Tahun XIX, Juni 2005, 140-146 ISSN 0215-1685.	Chemical Engineering
XI-UI	Rahmat Saptono. The Selection of Materials for Roller Chains from The Perspective of Manufacturing Process. <i>Makara, Teknologi</i> , Vol. 7, No. 3, Desember 2003	Metallurgy and Materials Engineering
XII-UI	Isti Surjandari & Annury Citra Seruni. Design of Product Placement Layout in Retail Shop Using Market Basket Analysis. <i>Makara, Teknologi</i> , Vol. 9. No. 2 Nopember 2005: 43-47.	Industrial Engineering
XIII-ITB	Indra Djodikusumo et al. Tolerance Stack Analysis in Francis Turbine	Mechanical

	Design. <i>ITB J. Eng. Sci.</i> Vol. 42, No. 1, 2010, 73-90.	Engineering
XIV-ITB	Sri Legowo et al. Estimation of Bank Erosion Due to Reservoir Operation in Cascade (Case Study : Citarum Cascade Reservoir). <i>ITB J. Eng. Sci.</i> Vol. 41, No. 2. 2009, 148-166.	Civil and Environmental Engineering
XV-ITB	Andriyan Bayu Suksmono. Deconvolution of VLBI Images Based on Compressive Sensing. Submitted to ICEEI 2009.	Electrical Engineering
XVI-ITB	Yazid Bindar. Geometry Effect Investigation on a Conical Chamber with Porous Media Boundary Condition Using Computational Fluid Dynamic (CFD) Technique. <i>ITB J. Eng. Sci.</i> Vol. 41. No. 2, 2009, 97-110.	Chemical Engineering
XVII-ITS	Y. Triyogi et al. Reducing the Drag on a Circular Cylinder by Upstream Installation of an I-Type Bluff Body as Passive Control. JMES 1543 © IMechE 2009; Proc. IMechE Vol. 223 part C: <i>J. Mechanical Engineering Science.</i>	Mechanical Engineering
XVIII-ITS	Totok Mujiono. Design of High Frequency CMOS Fractional-N Frequency Divider. <i>JAVA Journal of Electrical and Electronics Engineering</i> , Vol. 1, No. 1, April 2003.	Electrical Engineering
XIX-ITS	Didik Prasetyoko et al. Tungsten Oxides-Containing Titanium Silicalite for Liquid Phase Epoxidation of 1-Octene with Aqueous Hydrogen Peroxide. Received: 12 May 2008/Accepted: 10 October 2008/Published online: 4 November 2008 © Springer Science+Business Media, LLC 2008.	Chemical Engineering
XX-ITS	Endang Titi Sunarti B. Darjosanjoto. Space Syntax Analyses of Surabaya, A Javanese Coastal City.	Architectural Engineering

Method of Analysis

Having selected the abstracts, it is necessary for me to outline the method of analysis. It will be a genre-based analysis, as it is only concerned with one type of papers (abstract section), i.e. scientific papers. Swales (1985) defines "genre" as follows : (1) A genre is a recognized communicative event with a shared public purpose and with aims mutually understood by the participants within that event; (2) A genre is within variable degrees of freedom structured and standardized in terms of positioning, form and intent.

The analysis is focused on the tense shift or tense choice which is closely related to the rhetorical functions in scientific writing. For example, Lackstrom et al (1973) argue that grammatical choices are determined by rhetorical considerations; they show that, for example, the

choice of verb tense depends on the degree of generality intended. The discussion of linguistic features, i.e. tense choice or tense shift was not put into separate sections, but was incorporated with the rhetorical functions.

The objectives of this study, then, (1) to explore a number of approaches to the analysis of written texts; (2) to adopt a suitable method of analysis to the texts chosen.

Move Analysis

The reason for examining the abstract section of the 20 papers is that the abstract is an important part of a published scientific research papers; every writer has to include an abstract in his paper for publication. So it is necessary to scrutinize that part for pedagogical purposes. The areas which will be closely examined are the rhetorical function and the tense choice/shift.

In examining the rhetorical functions, I will apply Weissberg & Buker's pattern (1990: 186). They propose five features which should exist in abstract section in a scientific research paper. I will refer to these functions as *moves* (Swales 1981). Thus, the five moves are as follows:
 Move one : Background information

Move two : The principal activity (or purpose) of the study and its scope.
 Move three : Methodology used in the study
 Move four : The most important results in the study
 Move five : Conclusion or recommendation
 The following is a summary of the abstract sections in the 20 papers.

Table 4
 Rhetorical Functions of the Abstract Sections in the 20 papers.

No of paper	Move One	Move Two	Move Three	Move Four	Move Five
I-UDP	√	√	√	√	√
II-UDP	√	√	√	√	-
III-UDP	√	√	√	√	√
IV-UDP	√	√	-	-	√
Sub-total : 14	(3)	(3)	(3)	(3)	(2)
V-UGM	√	√	√	√	√
VI-UGM	√	√	√	√	√
VII-UGM	√	√	√	√	-
VIII-UGM	√	√	-	-	-
Sub-total : 15	(3)	(4)	(3)	(3)	(2)
IX-UI	√	√	√	√	√
X-UI	√	√	√	√	√
XI-UI	√	√	√	√	√
XII-UI	√	√	√	√	√
Sub-total : 14	(3)	(3)	(3)	(3)	(2)
XIII-ITB	√	√	√	√	-
XIV-ITB	√	√	√	√	-
XV-ITB	√	√	√	√	-
XVI-ITB	√	√	√	√	√
Sub-total : 14	(3)	(4)	(3)	(3)	(1)
XVII-ITS	-	√	√	√	-
XVIII-ITS	-	√	√	√	-
XIX-ITS	-	√	√	√	-
XX-ITS	-	√	√	√	-
Sub-total : 10	(0)	(2)	(4)	(4)	(0)

Table 4 shows that there is still a great difference among the sample abstracts (UDP, UGM, UI, ITB, ITS). Of the 20 abstracts, only three abstracts have complete moves (I-UDP, V-UGM and XII-UI); six abstracts have less than three moves (II-UDP : 2; VIII-UGM : 2; IX-UI : 2; XIII-

ITB :2; XVII-ITS: 2; XIX-ITS: 2) and the rest range from three to four moves. In order to have a complete picture of the moves used in the abstract section, the discussion will be based on each move (moves I-V).

In reference to Weissberg & Buker's (1990) pattern, Move One is Background Information (BI). Of the 20 sample abstracts, eight abstracts do not contain move one (II-UDP, VI- UGM, X-UI, XVI-ITB, and XVII, XVIII, XIX, XX-ITS). It is interesting to note here, none of the ITS abstracts contain move one. In terms of its length (number of words), it seems that Move One (BI)

is quite dominant in several abstracts. For instance, in I-UDP (Civil Engineering), IV-UDP (Architecture), VIII-UGM (Architecture), XIII-ITB (Mechanical Engineering), XIV-ITB (Civil and Environmental Engineering), Move One (BI) which functions as an opening line is much longer than the other moves. Consider the following.

ABSTRACT (I-UDP) –Civil Engineering

Construction industry contributes significantly in terms of scale and share in the development process for both developed and developing countries. The construction products provides the necessary public infrastructure and private physical structures for many productive activities such as services, commerce, utilities and other industries. The industry is not only important for its finished product, but it also employs a large number of people (directly and indirectly) and therefore has an effect on the economy of a country/region during the actual construction process.

Move 1

This research examines work done to determine the detailed effects of investing in construction. The effects considered are those on the micro and macro economy of the people directly or indirectly employed by the construction industry.

The work is based on surveys, which were carried out in Indonesia to investigate how the money invested in construction flows through the economy. It also examines at which point in the construction process income is received, and at which point it is spent. The results of these surveys were analysed using statistical methods and combined with results from economic input-output modelling. The results were then used to build a system model.

A system model is developed to examine its use to compare labour intensive and equipment based construction methods. It was found that the construction sector provides a very important contribution to the national and local economy through its job generating ability for local people as multiplier effects. A system model developed is able to predict the effects of changes in policy on expenditure in the micro scale. (257 words)

Key words: construction industry, labour intensive construction, micro and macro economy

Move One: 82 words; 7 lines; 3 sentences

ABSTRACT (IV-UDP) - Architecture

Ujungnegoro is one coastal area in Batang Regency Central Java, which offers a unique environmental setting as well as enormous tourism potentials such as marine resources, aquaculture and plantations. Furthermore, Ujungnegoro has a variety of terrain ranging from

plain to hills. Despite these potentials, presently the government faces some problems which hinder the development of tourism in this area, namely limited capital for development purposes, absence of infrastructure, inadequate government assistance in terms of budgeting and technical assistance. This paper analyzes these problems and identifies appropriate planning strategies that may be adopted to promote the tourism industry in Ujungnegoro, Batang Regency. These strategies will hopefully evolve into policies that will develop this area into appropriate tourist destination. Should this come to pass, this area will provide a greater contribution to the development of the area as a whole. (138 words)

Move 1

Keywords: Ujungnegoro, Tourism potential and problems, Development Strategies

Move One: 78 words, 7 lines, 3 sentences

VIII-UGM (Architecture)

Abstract

Parangtritis is a settlement existed on the coastal area of Yogyakarta. As an absolute space, Parangtritis has its own characteristic as a cluster of vernacular settlements. The underpinning of the existence of Parangtritis is a belief of people that Parangtritis is a place where the main gate of the unseen kingdom of Queen of the South (the Southern Goddess) is located. With this underpinning of an abstract space, Parangtritis had transformed to a spiritual space, a cultural space, a social pace, and recently to a commercial space. This transformation of space is in line with Lefebvre's concept of the production of pace which works under a system of interconnected-relations (engagement)

Move 1

This paper aims to present some evidences, conceptual findings, and theoretical discussions where an engagement of absolute space and abstract space occurs in the case of Parangtritis settlements of Yogyakarta of Indonesia. (143 words)

Move One: 111 words, 6 lines, 4 sentences.

From the three samples above, it can be seen that I-UDP (Move One) contains 82 words/7 lines/3 sentences, IV-UDP (Move One) 78 words/7lines/3 sentences, and VIII-UGM 111 words/6 lines/4 sentences. In reference to Weissberg & Buker's (1990) pattern, since Move One (Background Information) is not an essential factor, one or two lines (1 sentence) will be enough. Accordingly, the four abstracts (I-UDP, IV-UDP, VIII-UGM) quoted above are not

balanced since Move One is much more dominant if compared with other moves; it means the length ranges from 78 to 111 words or from 6 to 7 lines and one abstract (IV-UDP) only contains two moves (Move 1 and Move 2).

There is also another abstract (IX-UI) which does not directly deal with the problem in the opening lines or background information (Move One). Instead of stating the problem or topic, the writer mentions the cooperation between the institutions. Consider the following.

Abstract (IX-UI)

The University of Indonesia (UI), Gerhard Mercator University (GMU), the Universiti Kebangsaan Malaysia (UKM) have agreed to cooperate as partners to develop a joint bachelor (3+1) and masters (1+1) degree, and collaborate in the research fields of multimedia- and internet-based learning and application level active networks. This paper describes the introduction of the Offshore Project and the extending of information technology applications to the partner institutions in this international cooperation which would very much enhance the operations of the new initiative in engineering education, which could provide students in far distance with more flexible learning environment.

Keywords: Groupware in education, multimedia-and Internet-based education concept

Move
One

The identification of each move in the abstract section is also quite difficult for the average reader, as each writer has a different style in expressing the moves. For instance, the second move (i.e. objectives/scope of study) may be expressed explicitly or implicitly. Of the 20 abstracts, only three abstracts used clear discourse markers in stating the objectives of the study (VII-UGM: "The objectives of the research were to prepare chitosan under various" ; VIII-UGM : " This paper aims to present some evidences" ; XII-UI : "The purpose of this paper is to identify") and the rest have implicit signals. Consider the following:

- The photosynthetic of cyanobacterium *Anabaena cylindrica* strain IAM M1 in aerated liquid was preferred for high CO₂ fixation at low temperature environmental condition. (X-UI)
- The selection of materials for an engineering component is not only requested by its design function and shape, but also the sequence through which it is manufactured. (XI-UI)
- Direct inversion of incomplete visibility samples in VLBI (Very Large Baseline Interferometry) radio telescopes produces images with convolutive artifacts. (XV-ITB)
- The bluff body cut from a small circular cylinder that is cut at both sides parallel to the y-axis was used as passive control to

reduce the drag of a larger circular cylinder. (XVII-ITS)

The four extracts above are the first sentences of their abstract sections. It is quite difficult to decide whether those statements are the first moves (background info) or the second moves (scope of the study or objective) as there are no explicit signals as in VII-UGM, XII-UI, etc. We could say that the four statements are methods/procedures employed, but they could also be identified as the objectives/scope of the study by virtue of the phrases: " the selection of materials for an engineering component is not only requested by its design function or shape, ..." (XI-UI).

In addition, in terms of language XIII-ITB does not conform to Graetz's principle stating "It is written in tightly worded sentences, which avoid repetition, meaningless expressions, ... illustrations, ... descriptive details, examples, footnotes." In XIII-ITB we could find examples ("For example, as runner of Francis turbine is joined with (sic) ...") and it uses contraction form which is commonly used in informal English ("... won't come or won't function ...")

The rest of the papers only state the scope of the study by using various reporting verbs such as This research *examines* ..., This paper also *shows* ..., The study *investigated* ..., This paper *analyzes*..., This paper *presents*... , This paper *describes* ..., Current works *was carried* ..., (sic)

The present paper *deals ...*, In this paper it *will be demonstrated...*, This effort *can be performed...*, In this paper we *propose...*, This paper *discussed...*, This study *addressed...*, etc.

Meanwhile, Move Three (Methods) which is also obligatory does not exist in several abstracts (IV-UDP, VIII-UGM, IX-UI, and XIII-ITB). Those abstracts only contain two moves (1 and 2). The signals used in Move Three are quite varied and sometimes it is quite difficult to identify those signals as there is no standard pattern used in the sample abstracts. Only several sample abstracts have clear signals, e.g.:

- Thermal diffusivity of the samples was measured ... (VI-UGM)
- Chitin was prepared under ... ; Chitin was then bleached using ... ; Chitosan was evaluated (VII-UGM)
- Simulated test can be reasonably used to obtain materials performance ... (XI-UI)
- Apriori algorithm is chosen as a method in the data mining process. (XII-UI)
- Both design geometry and operating variables were used on the CFD simulation. (XVI-ITB)
- The design was done in schematic level ... (XVIII-ITS)

Similarly, Move Four (the Results) which is an essential component in the abstract writing does not exist in several samples (IV-UDP, VIII-UGM, IX-UI, XIII-ITB). Some sample abstracts use the following phrases as signals:

- It was found that the construction sector provides ... (I-UDP)
- Furthermore, the result also implies that the value ... (V-UGM)
- The results found five category association rules ... (XII-UI)
- Simulation results show that the circuit was ... (XVIII-ITS)

In the Move Five (conclusion) the writers of the 20 abstracts use either modality or present tense. However, in 13 sample abstracts the concluding lines are not found (See Table 4). Of the 20 abstracts only 7 abstracts contain Move Five which is also obligatory in the abstract writing. The following are some examples of Move Five in the data.

- (1) A system model developed *is able* to predict the effects of changes ... (I-UDP)
- (2) *Should this come to pass*, this area *will provide* a greater contribution to the development of the area as a whole. (IV-UDP)
- (3) The variety of the reported values ... *might be attributed* to the nature of experimentation. (V-UGM)
- (4) However, for each composition, the thermal diffusivity *decreases* as the temperature *increases*, because the thermal diffusivity of both the matrix (zirconia) and the reinforcement (iron) *decrease* with increasing temperature. (VI-UGM)
- (5) These associations then *will be interpreted* as confidence and support to become consideration for the product layout. (XII-UI)
- (6) It *means* that the use of the burner inherently *produces* some problems of the flow distribution. (XVI-ITB)

Tense Shift and Rhetorical Function

The tenses used in the abstract section move back and forth between past and present sometimes perfect tense. It seems that rhetorical shift is not always accompanied by tense shift. For instance, in paper XII-UI (containing complete moves) when the writer states the background information, scope of study, and methods, he uses the present tense, and the tense shifts to the past tense when he states the results and then shifts to modality when he gives

a conclusion. Consider the following extracts (XII-UI):

(Back ground of the study) Retailing *is* an industry with high level of competition. It *is* a customer-based industry which *depends* on how it *could* be aware of what the customers' needs and requirements are. One technique most used in supermarkets *is* the mix merchandise. (Present Tense)

(Scope of Study/Purpose) The purpose of this paper *is to identify* associated products, which then grouped (sic) in mix merchandise with the use of market basket analysis. (Present Tense)

(Methods) Apriori algorithm *is chosen* as a method in the data mining process. Using WEKA (Waikato Environment for Knowledge Analysis) software, the association rule between products is calculated. (Present Tense)

(Results) The results *found* five category association rules and fourteen sub-category association rules. (Past Tense)

(Conclusion) These associations then *will be interpreted* as confidence and support to become consideration for the product layout. (Modality)

Another paper (V-UGM) containing four moves has a different pattern. The tense shift moves from present perfect to present tense, and ends with modality. Consider the following extracts (V-UGM):

(Background Information) Two active mechanism producing self-induced stresses in immature concrete *have been identified* as a result of thermal and non-thermal deformations. ...

(Scope of Study/Purpose) Various different values for coefficient of thermal expansion, generally expressed as ' α ', *have been reported* ranging from 6 to 32 ...C.

(Results) The experimental work in the present study *yields* a value of ...This resulted value *confirms* with those suggested in the codes (BS 8007, BS8110, Eurocode, ACI).

(Conclusion) The variety of the reported values of α at the earlier stages of hardening concrete *might be attributed* to the nature of experimentation adopted in the research.

In paper XV-ITB also containing four moves, the writer does not shift the tenses at all in the four moves (1, 2, 3, 4); he merely uses present tense. The tenses used can be seen in the following extracts (XV-ITB):

(Background Information) Direct inversion of incomplete visibility samples in VLBI (Very Large Baseline Interferometry) radio telescopes *produces* images with convolutive artifacts.

(Scope of study) In this paper, *we propose* a new algorithm that *is based* on an emerging paradigm called compressive sensing (CS).

(Methods) Under the sparsity condition, CS capable to exactly reconstructs a signal or an image, using only a few number of random samples (sic).

(Results) *We show* that CS *is well suited* with the VLBI imaging problem and *demonstrate* that the proposed method *is capable* to reconstruct a simulated image of radio galaxy from its incomplete visibility samples taken from elliptical trajectories in the *uv*-plane.

Another different pattern can be found in paper X-UI which uses merely past tense in the three moves; it means the rhetorical shift is not followed by the tense shift which can be seen in the following extracts:

(Methods) The photosynthetic of cyanobacterium *Anabaena cylindrica* strain IAM M1 in aerated liquid *was preferred* for high CO₂ fixation at low temperature environmental condition. Cell growth (sic) successfully in single reactor at low temperature and light illumination of 288 K and 1000 lx, however, in accordance with Arrhenius prediction, biomass production and average carbon dioxide removal relatively small (sic). Current works *was carried* (sic) to improve the performance of photosynthetic in this low temperature condition and consequently we *proposed* alteration of light illumination during microbial growth.

(Results) The overall average value of carbon dioxide transfer rate (CTR_{av}) of cyanobacterial growth at alteration of light illumination *was* around 1.71 g/[dm³.h], which *was* about eleven times of result constant light illumination of 1000 lx. Refer to (sic) average value of final cell concentration and light energy utility efficiency of cyanobacterial growth production (η), alteration of light illumination also *increased* biomass production and actually, *produced* more efficient than in constant light illumination, which *were* approximately, three times.

(Conclusion) Additionally, kinetic studies of this microbial growth at alteration of light illumination also *concluded* that both of relationship between specific carbon dioxide transfer rate q_{CO_2} and X as essential factor concentration of carbon dioxide fixation and relationship between incident

specific growth rate ($\mu\phi$) and [HCO₃⁻] as essential compound concentration of cyanobacterial growth, *followed* a substrate inhibition model kinetic equation, that *was proposed* by Andrew.

From several sample abstracts described above it can be seen that there is one abstract (X-UI) which merely uses past tense for the whole abstract. This kind of pattern is in accordance with Graetz's pattern stating: "The abstract is characterized by the use of past tense, third person, passive, and the non-use of negatives" (1985). On the contrary, there is another abstract (XV-ITB) which uses fully present tense. This pattern does not conform to any patterns suggested in the theoretical framework. Even the abstract which contains five moves (XII-UI) does not conform to any of the suggested patterns.

It is also interesting to comment on the shift of tense in paper I-UDP. Consider the following statement:

- (1) *It was found* that the contribution sector *provides* a very important contribution to the national and local economy through its job generating ability for local people as multiplier effects. (I-UDP)
- (2) Simulation results *show* that the circuit *was running* well in this frequency input. (XVIII-ITS)

In the above statements there is no agreement between 'reporting verb' and 'reported verb' (was found ... provides; show ... was running). The first statement (I-UDP) the tense shifts from past to present while the second statement (XVIII-ITS) the tense shifts from present to past. There are two possibilities here:

- the writers, in fact, have not yet mastered the English tense system, or

- if they have already mastered such a system, they must have a good reason to shift the tense in reported verbs.

The second possibility can be explained as follows: in the first statement (sentence 1), the writer wants to show that “contribution to the national and local economy ...” is still true at the time of reporting. So, this kind of shift is possible and it is in line with what Swan (1980:535) says: “... sometimes, even after past reporting verbs, the tenses are the same as the original speaker’s. This happens when we are reporting people saying things that are still true when we report them.” And the tense shift above also agrees with Day’s (1979:119) principle in scientific writing: “It is correct to say, ‘Smith *showed* that streptomycin *inhibits* S. nocolor.’

However, the second statement (XVIII-ITS) uses a different shift (present to past). If the writer really knows the English tense system, it can still be justified since it is in line with what Day (1979) says: “It is also correct to say ‘Table 4 *shows* that streptomycin *inhibited* S. everycolor at all pH levels.’” It means that “streptomycin which inhibited S. everycolor ..” is no longer true at the time of reporting. Such a phenomenon is similar to statement 1 (XVIII-ITS), i.e. “the circuit which was running well” is no longer true at the time of reporting.”

It is equally interesting to note here about the use of present perfect in certain moves which are against the principle of tense choice suggested by Weissberg & Buker (1990:186). They only suggest that the past tense or present perfect be used in the second move (principal activity or scope of the study), e.g. “In this study the readability of tax booklets from nine states *was evaluated*.” or “Net energy analyses *have been carried out* for eight trajectories which convert energy source into heated domestic water.”

Meanwhile, in the several sample abstracts (III-UDP, V-UGM, IX-UI) the present perfect is used in the opening lines or background information (Move One) and it is also used in Move Four (Results) in III-UDP. There must be a strong reason to use the present perfect in the opening lines.

In scientific writing the writers always refer to previous research done either by themselves or by others working in the same field. Based on his research, Trimble (1985:126) proposes as follows:

If the writers use the *past tense* in reporting research done previously by themselves or by others then that research is of secondary importance to the current work being reported on. If, on the other hand, the writer uses the *present perfect* or the *present tense*, then the research is of more direct and primary importance to the writer’s current work.

Consider the following:

- (1) The permeation rates of O₂, N₂, CO₂ and CH₄ *has been studied* for polyimidepolyethersulfone (PI/PES) blends-zeolite mixed matrix membranes synthesized in our laboratory. (Move One /III-UDP)
- (2) Two active mechanism producing self-induced stresses in immature concrete *have been identified* as a result of thermal and non-thermal deformations. (Move One/V-UGM)
- (3) The University of Indonesia (UI), Gerhard Mercator University (GMU), the Universiti Kebangsaan Malaysia (UKM) *have agreed* to cooperate as partners to develop a joint bachelor (3+1) and masters (1+1) degree, and collaborate in the research fields of multimedia- and internet-based learning and

application level active networks. (Move One/IX-UI)

In the first two extracts (III-UDP and V-UGM) the use of present perfect is intended to refer to the previous research and it is of more direct and primary importance to the writer's current work. However, in the third extract (IX-UI) the use of present perfect tense is not related to the previous research or study like in the first two extracts. Instead, it refers to the non-research issue, i.e. the institutional cooperation (UI, GMU, and UKM). In other words, the tense choice (present perfect) here is not concerned with rhetorical function or previous research.

In the 20 sample abstracts the present perfect is also used in other moves (Move Three: Methods and Move Four: Results). In reference with Weissberg & Buker's pattern, Moves Three and Four should use the past tense and the two extracts below (III-UDP and IX-ITS) do not conform to the pattern.

- Differential scanning calorimetry measurements of pure and PI/PES blends membranes *have showed* one unique glass transition temperature that supports the miscible character of the PI/PES mixture. (Results/ III-UDP)

- Tungsten oxides (WO₃) *have been supported* on the titanium silicalite (TS-1) by impregnation method. The solids *have been tested* for epoxidation of 1-octene with aqueous H₂O₂ in acetone as solvent. (Methods/ IX-ITS)

Another interesting finding is the tendency of tense usage based on the groups (UDP, UGM, UI, etc). In terms of tense occurrence in the 20 abstracts, the use of present tense is the most dominant (132), followed by past tense as the second rank (49), present perfect (11), modality (29), and past perfect (1). Seen from the groups, the writers of UDP, UGM, UI, and ITB tend to use present tense while the writers of ITS tend to use past tense (See Table 5).

Table 5
Tense occurrence in the Abstract section

No of paper	Present Tense	Past Tense	Present Perfect	Past Perfect	Modality
I-UDP	13	4	–	–	–
II-UDP	9	1	–	–	5
III-UDP	3	2	1	–	–
IV-UDP	7	–	–	–	4
Sub-total :	(32)	(7)	(1)	(0)	(9)
V-UGM	5	–	2	–	1
VI-UGM	6	3	–	–	–
VII-UGM	1	8	–	–	1
VIII-UGM	9	–	–	1	–
Sub-total :	(21)	(11)	(2)	(1)	(2)
IX-UI	1	–	1	–	2
X-UI	–	12	–	–	–
XI-UI	6	1	1	–	2
XII-UI	9	1	–	–	3
Sub-total :	(16)	(14)	(2)	(0)	(7)
XIII-ITB	7	–	3	–	4

XIV-ITB	10	–	–	–	5
XV-ITB	11	–	–	–	–
XVI-ITB	12	2	–	–	2
Sub-total :	(40)	(2)	(4)	(0)	(11)
XVII-ITS	8	3	–	–	–
XVIII-ITS	1	7	–	–	–
XIX-ITS	–	3	2	–	–
XX-ITS	4	2	–	–	–
Sub-total :	(13)	(15)	(2)	(0)	(0)

If scrutinized further, in terms of grammatical point of view the reason of choosing and shifting certain tenses is not quite clear. For instance, in paper XVII-ITS the tense shift occurs in one move (methods) :

The bluff body cut from a small circular cylinder *that is cut* at both sides parallel to the *y*-axis *was used* as passive control (sic) to reduce the drag of a larger circular cylinder. The small bluff body cut *is called* an I-type bluff body, which *interacts* with a larger one downstream. I-type bluff bodies with different cutting angles of $\theta_s = 0^\circ$ (circular), 10° , 20° , 30° , 45° , 53° , and 65° *were located* in front and at the line axis of the circular cylinder at a spacing $S/d = 1.375$, where their cutting surfaces *are* perpendicular to the free stream velocity vector. (XVII-ITS/Methods)

With reference to the principles of writing abstract (Day's or Weissberg & Buker's) the methods move should use past tense. In the above extract (XVII-ITS) the tense shift occur in one move: present tense - past tense – present tense – past tense – present tense. There are two possibilities here: the writer has not mastered

the tense system or he has a strong reason to do so. If we refer to Trimble's pattern (1985) concerning the apparatus used, he states as follows : "If the apparatus is used temporarily, the writer will use the past tense; on the other hand, if the apparatus is used permanently, he will use the present tense." But it seems that the extract above (XVII-ITS) does not conform to Trimble's pattern either. The tense shift in the extract does not reflect whether the apparatus is used temporarily or permanently. In the first sentence (a complex sentence), the writer uses present tense (...that is cut ...) in the subordinate clause, then he shifts the tense to past tense in the main clause (...was used ...) without a clear reason (whether it is permanent or temporary apparatus). Again in the second sentence (a compound-complex sentence), the writer uses present tense (... is called ...) in the first main clause and then shifts to past tense (...were located ...) in the second main clause without a clear reason. The following is a summary of the tense choice or shift in the Abstract section (Table 5).

Table 6
Tense Choice in Each Rhetorical Function

No of paper	Move One	Move Two	Move Three	Move Four	Move Five
I-UDP	Present T.	Present T.	Present T.	Past T.	Present T.
II-UDP	–	–	Present T.	Present T.	–
III-UDP	Pres. Perfect	Past T.	Present T.	Pres. Perfect	–
IV-UDP	Present T.	Present T.	–	–	Modality

V-UGM	Pres. Perfect	Pres. Perfect	Present T.	Present T.	Modality
VI-UGM	–	Present T.	Past T.	Present T.	Present T.
VII-UGM	Present T.	Past T.	Past T.	Past T.	–
VIII-UGM	Present T.	Present T.	–	–	–
IX-UI	Pres. Perfect	Present T.	–	–	–
X-UI	–	–	Past T.	Past T.	Past T.
XI-UI	Present T.	Present T.	Modality	Present T.	–
XII-UI	Present T.	Present T.	Present T.	Past T.	Modality
XIII-ITB	Present T.	Modality	–	–	–
XIV-ITB	Present T.	Present T.	Modality	Present T.	–
XV-ITB	Present T.	Present T.	Present T.	Present T.	–
XVI-ITB	–	Present T.	Past T.	Present T.	Present T.
XVII-ITS	–	–	Past T.	Present T.	–
XVIII-ITS	–	Past T.	Past T.	Present T.	–
XIX-ITS	–	–	Pres. Perfect	Past T.	–
XX-ITS	–	Past T.	Present T.	Present T.	–

CONCLUSION

In terms of moves (rhetorical function) there is still a great difference among the data (20 abstracts). Of the data, only three abstracts contain complete moves (5 moves) and even a few abstract (3) only contain 2 moves.

In expressing the moves, some abstracts do not use explicit discourse markers so that it is quite difficult for the reader to identify the shift of each rhetorical function.

In terms of tense choice or shift, there is also a great variety among the data. It seems that the rhetorical shift is not always followed by the tense shift.

REFERENCES

- Day, R. A. 1979. *How to Write and Publish a Scientific Paper*. Philadelphia: ISI Press.
- Graetz, N. 1985. Teaching EFL Students to Extracts Structural Information from Abstracts in Ulijn, J.M. and Pugh A.K. Eds *Reading for Professional Purposes*. Lenven Allo.
- _____, 2004. Forum Sastra dan Budaya.

Gutkowski, J. & Urquhart, A. H. 1989. *The Structure of Genetic Abstracts*. Plymouth: Marjons college of H.E.

_____, 2004. *Kompas*, Thursday 23 September.

Lackstrom, J., Selinker, L. and Trimble, L. 1973. *Technical Rhetorical Principles and Grammatical Choice*. TESOL Quarterly 7, 2: 127-136.

Packham, G. et al. 1985. *Studying in Australia: Writing Assignments*. Melbourne: Thomas Nelson Australia.

Paltridge, B. & S. Starfield. 2007. *Thesis and Dissertation Writing in a Second Language : A handbook for Supervisors*. London: Routledge.

_____. 2008. *Rencana Strategis Bisnis Universitas Diponegoro*. Agustus.

Rifai, Mien A. 2008. *Strategy in Selecting the Appropriate International Journals*. Workshop on International Scientific Paper Writing. Lemlit Undip.

Stapleton, P. 1987. *Writing Research Papers: an Easy guide for Non-native English Speakers*.

Canberra: Australian Centre for International Agricultural Research.

Swales, J. 1990. *Genre Analysis : English in Academic and Research Settings*. Cambridge: University Press.

Trimble, L. 1985. *English for Science and Technology: A Discourse Approach*. Cambridge: Cambridge University Press.

Swales, J. 1985. A Genre-based Approach to Language Across the Curriculum. Paper

presented at the *RELC Conference*, Singapore.

Swales, J. 1981. *Aspects of Article Introductions*. Aston Research Report, No. 1. Birmingham: University of Aston.

Swan, M. 1980. *Practical English Usage*. Oxford:OUP and ELBS.

Weissberg, R. and S. Buker. 1990. *Writing Up Research : Experimental Research Report Writing for Students of English*. New York: Prentice Hall Regents.