

PANDUAN MENGENAI **PROPOSAL PENELITIAN**

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edisi 1 - 2012



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Edisi 1

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2012

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PENDAHULUAN

Buku panduan ini bukan merupakan satu-satunya pegangan dalam membuat *research proposal* (proposal penelitian). Namun, buku ini diharapkan dapat memberikan gambaran mengenai research proposal dan bagaimana calon mahasiswa dapat menuliskan rencana studinya (baik S2 jalur riset maupun S3) dengan baik sehingga dapat mengomunikasikan rencana studinya kepada calon pembimbing dan universitas yang dituju.

Jika buku ini berguna, silakan disebarakan informasinya kepada orang lain yang membutuhkan. Kami juga mengharapkan adanya masukan, kritik, saran dan pertanyaan mengenai hal-hal yang ada di buku ini supaya buku ini dapat menjadi lebih berguna bagi mereka yang akan melanjutkan studi.

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‘the research proposal is often the key element to the successful thesis, as such, the most important step in the whole process’

(Meloy, 1994, *Writing the Qualitative Dissertation: Understanding by Doing*, p.3)

APA ITU *RESEARCH PROPOSAL*

Research proposal, atau selanjutnya disebut proposal penelitian, adalah sebuah dokumen singkat yang berisi rencana seseorang untuk melakukan penelitiannya. Sebuah proposal penelitian untuk studi lanjut (S2 maupun S3) bisa sangat singkat (1-2 halaman atau 500 kata) atau sangat panjang (15 halaman atau 6000 kata), tergantung persyaratan dari universitas

atau program studi yang dituju.

Proposal penelitian yang baik harus memiliki beberapa kriteria di bawah ini:

(disarikan dari <http://madeandi.com/2012/06/26/cara-membuat-proposal-penelitian-untuk-beasiswa-luar-negeri/> dan dari Centre of Excellence in Learning and Teaching, the University of Melbourne, http://tlu.fbe.unimelb.edu.au/pdfs/helpsheets/research_skills/research_proposal.pdf)

1. Judul penelitian harus tegas dan menarik. Judul atau tema sebaiknya menunjukkan isi dari penelitian itu sendiri.
2. Latar belakang harus jelas dan mendukung. Apa yang membuat kita ingin dan perlu meneliti hal tersebut? Apa yang kita saksikan (observasi) di sekitar kita? Apa yang kita telah baca dan ketahui? Apa yang sedang jadi persoalan? Fakta dan fenomena apa yang terjadi atau teramati sehingga kita merasa perlu adanya penelitian? Mengapa penelitian yang ingin dan perlu kita lakukan ini penting (adakah gap/celah antara apa yang ada saat ini dan yang ingin kita teliti)?
3. Pernyataan penelitian (*research statement* atau *thesis statement*) dan maksud harus disampaikan dengan tegas dan jelas. Maksud (*purpose*) ini kadang bermakna sama atau kabur dengan tujuan (*aim*) dan seringkali penggunaannya tertukar. Untuk proposal penelitian, hal ini tidak masalah, sejauh pernyataan penelitian kita jelas. Pernyataan penelitian ini bermakna sama dengan pertanyaan

penelitian (*research question*) yang menjadi motivasi filosofis mengapa penelitian itu dilakukan.

4. Adanya alasan (justifikasi) mengapa penelitian ini penting dilakukan, yang didukung oleh studi literatur tentang penelitian-penelitian yang telah dilakukan sebelumnya dan pernyataan mengenai kontribusi dari penelitian ini.

Judul atau tema harus menunjukkan isi penelitiannya sendiri. Dengan membaca judulnya, orang harus sudah bisa membayangkan isinya. Misal, sebuah proposal penelitian berjudul “*Study on Error Measurement on Several Standard Setting Methods*”? Bisakah kita langsung menebak bidang kajiannya? Sekilas mungkin terdengar bagus, tetapi mereka yang tidak berlatar belakang bidang ilmu yang sama akan menebak-nebak. Ada yang mungkin menduga judul ini terkait bidang teknik/sains, padahal judul ini terkait pendidikan. Bandingkan dengan judul ini “*Challenges and Opportunities in the Delimitation of Indonesian Maritime Boundaries – A Legal and Technical Approach*”. Apakah judul ini lebih menunjukkan bidang kajian dan isi penelitiannya?

Latar belakang harus jelas dan mendukung penelitian. Proposal penelitian dengan judul “*Challenges and Opportunities in the Delimitation of Indonesian Maritime Boundaries – A Legal and Technical Approach*”, misalnya, didukung oleh fakta bahwa Indonesia memiliki sepuluh tetangga yang dengannya perlu menetapkan batas maritim dan belum tuntas hingga hari ini.

Fenomena lain adalah bahwa dengan batas maritim yang belum tuntas itu sering ada insiden di perbatasan. Tentu banyak contoh yang bisa disebutkan. Insiden ini merugikan banyak pihak seperti nelayan dan lain-lain. Ketidakjelasan batas ini juga menyulitkan pengelolaan dan pemanfaatan sumberdaya laut. Maka dari itu perlu ada usaha untuk menyelesaikan batas maritim ini.

Pembeda utama antara riset untuk studi S3 dan S2 adalah riset S3 membutuhkan kontribusi yang unik, asli dan baru yang ditunjukkan dari topik, metodologi, data dan fakta baru serta interpretasi hasil. (Paltridge & Starfield, 2007, *Thesis and Dissertation Writing in a Second Language*, p. 55)

Penelitian yang serius terhadap ini jelas diperlukan. Penetapan batas maritim merupakan **gap** atau **celah** antara kondisi saat ini (ketidakjelasan batas) dengan apa yang ingin dicapai oleh penelitian ini.

Pernyataan penelitian (*thesis statement*) harus jelas dan didukung oleh maksud (*purpose*) dan/atau tujuan penelitian (*aims*). Dalam proposal penelitian, kadang maksud dan tujuan belum terpisahkan dengan baik. Hal ini tidak masalah, namun, pada dasarnya maksud (*purpose*) bersifat lebih luas. Contohnya adalah *“to evaluate existing approach in the delimitation of Indonesia’s maritime boundaries with its neighbours and to propose possible improvement”*. Setelah kita menentukan pernyataan penelitian (*thesis statement*) atau rumusan masalah, maka kita dapat membuat tujuan penelitian yang lebih spesifik.

Alasan (justifikasi) mengapa penelitian ini penting dilakukan perlu didukung oleh studi literatur untuk membuktikan bahwa kita telah melakukan studi dan analisis bahwa ada celah (*gap*) yang perlu menjadi perhatian. Alasan (justifikasi) dapat didasari oleh beberapa kriteria:

(diadaptasi dari

http://tlu.fbe.unimelb.edu.au/pdfs/helpsheets/research_skills/research_proposal.pdf)

- Perubahan ukuran sampel atau jumlah variabel/atribut yang diteliti,
- Area penelitian yang dilakukan berbeda dengan area yang telah diteliti,
- Celah dalam literatur yang perlu diuji dan dibuktikan,
- Perbedaan atau perbaikan metodologi penelitian,
- Kontribusi yang layak dipublikasikan,
- Keuntungan bagi penentu kebijakan atau implementasi.

Penelitian adalah kesempatan untuk mengisi celah (*gap filling*). *“Gap-filling might be called the ‘introduce your own research’ move, because here is where the author first gets the opportunity to introduce her own research”* (The Learning Centre UNSW, 2002, *Thesis Introductions & Literature Reviews*, adapted from Atkinson & Curtis, *Preparing to write your Mphil/PhD*, English Dept. HK Polytechnic Univ.)

TUJUAN RESEARCH PROPOSAL

Proposal penelitian bertujuan untuk meyakinkan calon pembimbing, universitas atau program studi yang dituju bahwa:

(<http://www.lc.unsw.edu.au/onlib/thesis.html>;
<http://www.education.monash.edu.au/students/current/study-resources/proposalwriting.html>)

1. Ada kebutuhan akan penelitian tersebut, dan penelitian ini signifikan dan penting. Selain itu, penelitian yang akan dijalankan ini merupakan sesuatu bentuk pencarian yang asli.
2. Ada hal baru (*original*) dan asli (*genuine*) yang diberikan oleh hasil penelitian ini (*original contribution to the body of knowledge*).
3. Penelitian ini merupakan sesuatu yang terkait dengan penelitian lain dan berhubungan dengan *school of thoughts* pada topik tersebut, dan berorientasi pada teori tertentu.
4. Penelitian merupakan hal yang dapat dilakukan (*feasible*) berdasarkan pertimbangan batasan waktu (sesuai masa studi), dana, ketersediaan pembimbing (kesesuaian sumber daya di universitas atau program studi atau kesesuaian bidang ilmu calon pembimbing) dan akses terhadap data yang diperlukan.
5. Penelitian sesuai dengan kemampuan dan latar belakang pendidikan peneliti ybs (calon mahasiswa).

SYARAT SEBUAH RESEARCH PROPOSAL

Proposal penelitian merupakan syarat dalam pendaftaran studi S2 jalur riset dan S3 di Australia.

“In assessing a research proposal, supervisors gave 3 most values to the logic of argument, a well-focused research questions and set of research objectives, and the width dan depth of the student’s reading.”

(Caldman, 2002 dalam Paltridge & Starfield, 2007 Thesis and Dissertation Writing in a Second Language, p. 62)

Untuk UNSW (University of New South Wales), proposal penelitian wajib disertakan pada saat mendaftar sebagai calon mahasiswa riset, dengan aturan sebagai berikut:

*(informasi dari Graduate Research School website, UNSW,
<http://research.unsw.edu.au/how-apply-postgraduate-research-study-program>)*

Faculty of Arts & Social Sciences

School of Languages and Linguistics

The prospective application should be accompanied by a research proposal of 1000-1500 words (Please format it in MS Word if possible, with the font-size 12 and the line-spacing 1.5). The proposal should give a tentative title, a brief outline of the research questions you intend to address (including why they are important and original), the methodology you intend employing, a brief review of the relevant literature, a short description of the theoretical approach envisaged, and an outline of the research materials you will use.

For applications to **all other Schools** within the Faculty of Arts & Social Sciences please provide a research proposal of 1000 words.

Faculty of the Built Environment

Applicants for a Masters by Research in the Faculty of the Built Environment must provide a preliminary research proposal of 1500 words.

For a PhD application in the Faculty of the Built Environment, the proposal should be 3000 words and include:

- a preliminary literature review
- a statement of the research problem and its significance
- an outline of the method used to analyse the problem

Faculty of Engineering

School of Computer Science and Engineering (CSE) only:

Applicants must make contact with a prospective supervisor before lodging an application. Applicants may send the research proposal to an academic directly and ask for consideration, particularly with regard to suitability. You must be able to provide copies of correspondence once you have the agreement of your prospective supervisor. The research proposal should be at least 500 words.

For applications to all other Schools within the Faculty of Engineering

The research proposal should be 100 words long and should include the following:

- a statement of the research problem and its significance
- an outline of the method to be used to analyse the problem
- the names of any academics you have contacted in the School
- details of previous publications and/or research undertaken in your nominated area of interest

Faculty of Law

School of Law

In-depth outline of your research proposal (around 5-6 pages).

LLM by Research in Law, SJD and PhD in Law submit a detailed research proposal of approximately 5-6 pages. This proposal should include the following information: proposed title of the research thesis; aims of the research thesis; background to the research, including a literature survey; significance of the research; and, research methodology.

Faculty of Medicine (except Australian Institute of Health Innovation and Prince of Wales Clinical School)

Applicants must ensure that the following is included:

- Evidence of support from the proposed supervisor
- A nomination by the proposed supervisor of a co- or joint-supervisor
- A research project title
- A *research proposal (maximum of 2 pages)*

The Australian School of Business

- A completed EOI questionnaire
- *A research proposal*
- Resume/Curriculum Vitae
- Academic transcripts for all previous degrees (at this stage it is not necessary to provide certified copies)
- Two recommendation letters or referee reports
- Any other relevant information available, such as an English score, GMAT/GRE score, an abstract of a thesis completed for your previous degree/s, etc

The research proposal should demonstrate:

- Clear aims and objectives
- Some consideration of method
- A good command of the English language
- That you are capable of independent and critical thinking

The research proposal should be 3-7 pages in length and include:

- A discussion of the issues you would like to explore (why it is important and interesting)
- Background literature supporting your project
- An explanation of the way your project would significantly add to the understanding of the topic
- A bibliography of your background literature

College of Fine Arts

Master of Art Education and Art Education PhD

Applicants are encouraged to submit an application with a developed research proposal which contains the following:

- A working title for the thesis;
- A 1,000 word statement (2,000 words for PhD applications) articulating the nature and objectives of the thesis;
- The proposal should establish the central “research question”, methods to be employed and the area of the research project, for example, community and museum centred projects, virtual educational environments, art and design education;
- Identify the theorists that you will use as the framework for the study;
- A preliminary bibliography;
- Names of major sources of primary material (eg: libraries/collections/educational resources/research projects);
- Research expertise and professional experience;
- Names of two academic referees

STRUKTUR *RESEARCH PROPOSAL*

Sebuah proposal penelitian biasanya terdiri dari hal-hal berikut (tergantung panjang atau pendeknya sebuah proposal):

disarikan dari <http://www.education.monash.edu.au/students/current/study-resources/proposalwriting.html>;

<http://madeandi.com/2012/06/26/cara-membuat-proposal-penelitian-untuk-beasiswa-luar-negeri/>;

http://tlu.fbe.unimelb.edu.au/pdfs/helpsheets/research_skills/research_proposal.pdf;

<http://webservices.cofa.unsw.edu.au/documents/download/24>

1. Halaman depan (cover page)
2. Pendahuluan atau Latar Belakang
3. Maksud dan Tujuan Penelitian
4. Studi Literatur
5. Usulan Metodologi Penelitian
6. Rencana Penelitian (Jadwal/Rencana Waktu)
7. Struktur Tesis
8. Signifikansi dan Hasil yang Diharapkan
9. Daftar Pustaka

Halaman depan (*Cover page*)

Halaman depan biasanya berisi judul dan siapa calon mahasiswa/peneliti yang akan melakukannya. Pemilihan judul merupakan kriteria penting dalam penulisan proposal penelitian. Judul harus menjelaskan fokus penelitian, singkat, mudah dipahami dan menggunakan kata-kata kunci di bidang studi yang dituju.

Selain itu, halaman muka biasanya menunjukkan juga universitas, program studi dan degree atau level pendidikan yang dituju (Master of Engineering, Master of Philosophy atau Doctor of Philosophy).

Pendahuluan atau Latar Belakang

Pendahuluan untuk sebuah proposal penelitian harus singkat (cukup dua atau tiga paragraf, bahkan mungkin satu paragraf). Proposal harus jelas dan padat, langsung pada fokus penelitian. Pendahuluan perlu memberikan arah atau penjelasan mengenai area penelitian sekaligus sub area yang dituju (spesifik). Selanjutnya, pendahuluan perlu menunjukkan ***research gap*** atau celah dari penelitian yang ingin diisi, dan dilanjutkan dengan pertanyaan penelitian (***research question***).

Pendahuluan ditutup dengan pernyataan penelitian atau yang sering disebut ***thesis statement***. *Thesis statement* merupakan usulan jawaban atas pertanyaan penelitian.

Contoh ***research gap*** dan ***thesis statement***:

(taken from:

http://tlu.fbe.unimelb.edu.au/pdfs/helpsheets/research_skills/research_proposal.pdf, p.3)

Research gap:

Philosophies from marketing management have recently been applied to almost every industry from insurance to travel and hospital services, but not often to farming.

Thesis statement:

In this research proposal, the role of marketing management in agricultural marketing theory and practice is described. It is argued that the marketing strategies of farmers are not adequately described by either the business or agricultural marketing disciplines, and a methodology for analysing the farm business marketing strategy process is outlined (Adapted from McLeay and Zwart, 1993).

Maksud dan tujuan penelitian

Seperti sudah dijelaskan sebelumnya, maksud penelitian merupakan tujuan yang bersifat luas dalam area penelitian yang ingin dilakukan. Dalam contoh yang diberikan, maksud penelitian adalah “*to describe the role of marketing management in agricultural marketing theory and practice*”.

Selanjutnya perlu dituliskan tujuan penelitian yang merupakan bentuk rinci

Beberapa pilihan kata kerja yang sering digunakan untuk menyatakan pernyataan penelitian (*thesis statement*) adalah:

- | | |
|-----------|-------------|
| - study | - report |
| - present | - describe |
| - explore | - examine |
| - develop | - introduce |
| - show | - aim to |
| - focus | - discuss |

dan lebih teknis dari maksud penelitian. Tujuan merupakan penjabaran dari maksud menjadi sesuatu yang **lebih terukur** dan jelas bagaimana cara pencapaiannya (menggambarkan metodologi yang diusulkan). Untuk mempermudah penulisan tujuan, biasanya disebutkan *What, How, Why* dan *What if* dari permasalahan ini.

Studi Literatur

Studi literatur berisi tentang penjelasan apa yang telah dilakukan oleh peneliti lain di area yang akan diteliti dan apa yang akan kita lakukan. Studi literatur biasanya diawali dengan pembahasan teori dan penelitian yang telah memberi signifikansi dalam area penelitian tersebut (dapat juga berisi: *state-of-the-art, school of thoughts*). Studi literatur selanjutnya menjabarkan gap atau celah dalam literatur secara lebih detil dibandingkan dalam pendahuluan. Studi literatur dapat juga menjelaskan definisi dari istilah kunci (*key terms*) yang digunakan.

Sebagai penutup, studi literatur biasanya juga berisi model atau kerangka kerja teoritis (*theoretical framework*) yang akan digunakan dalam penelitian.

Sebuah studi literatur dapat berbentuk penggambaran (deskripsi), pengategorian (klasifikasi) atau pengategorian dan evaluasi.

(Examiners) wish list for the literature review:

- *All the literature is included;*
- *The focus of the review is prominent and sharp;*
- *“Everything I’ve ever read syndrome: is avoided;*
- *All sources are relevant and recent;*
- *The study is located in the context of previous research;*
- *Literature on methodology is included.*

(from King, M., 1999, What Examiners Typically Say [Presentation])

Contoh studi literatur:

(taken from:

http://tlu.fbe.unimelb.edu.au/pdfs/helpsheets/research_skills/research_proposal.pdf, p.4)

An examination of textbook definitions of business and agricultural marketing provides the most general guide to theoretical content. Although there is no generally accepted definition of agricultural marketing, it is frequently viewed as part of the economic system (Ritson, 1986; Bateman, 1976) and is widely recognised as involving the exchange process. A typical definition is given by Shepard and Futrell (1982) who state: '...'. By this definition, agricultural marketing theory focuses on the workings of the distribution system, and is typically viewed as a process that begins after produce leaves the farm gate. ... Thus production planning is frequently excluded from the marketing process. ...

Although there is no universally accepted definition of business marketing, it is generally accepted that business marketing, like agricultural marketing, involves the exchange process. For example, Kotler (1972, p. 12) defines marketing as: '...'

Usulan Metodologi Penelitian

Dalam proposal penelitian, metodologi tidak perlu digambarkan secara detail, tapi perlu ada penjelasan atas pilihan metodologi tertentu yang akan digunakan pada penelitian ini. Misalnya, apakah penelitian akan dijalankan dengan metode penelitian kuantitatif atau kualitatif, apakah ada studi kasus yang akan digunakan dan bentuk studi kasusnya.

Pada metode penelitian kuantitatif, perlu dijelaskan juga, alat ukur statistika apa yang akan digunakan, variabel apa saja yang akan diuji. Selain itu, dalam usulan metodologi penelitian, dapat juga dijelaskan kemudahan akses terhadap data maupun cara analisis data yang akan dilakukan.

Rencana Penelitian

Rencana penelitian dilihat dalam sebuah proposal penelitian sebagai kemampuan calon peneliti (calon mahasiswa) dalam pengelolaan waktu studinya, dan kemampuan calon peneliti dalam menentukan arah dan rencana penelitiannya selama studi. Hal ini menunjukkan kemampuan pengorganisasian waktu dan pekerjaan.

Rencana penelitian dapat ditunjukkan dalam bentuk tabel ataupun *timeline* (*Gantt Chart*) ataupun peta aliran proses.

Dalam proposal penelitian yang singkat, rencana penelitian tidak perlu disajikan dalam bentuk tabel namun dapat dijelaskan dalam satu sampai dua kalimat saja, menjelaskan lama penelitian dan pentahapannya.

Dalam rencana penelitian yang terkait dengan proyek atau beasiswa tertentu, penulisan rencana studi lapangan (*field work*) menjadi aspek yang penting agar lembaga pemberi beasiswa dapat menentukan anggaran untuk *field work* yang biasanya membutuhkan anggaran ekstra.

Struktur Tesis

Struktur tesis tidak selalu harus ada dalam proposal penelitian yang ditujukan untuk mendaftar sekolah, namun perlu ada pada proposal penelitian setelah diterima di program studi/universitas yang dituju,

Struktur tesis berisi fokus dari masing-masing bab dalam tesis.

Signifikansi dan Hasil yang Diharapkan

Signifikansi dan hasil yang diharapkan biasanya hanya merupakan prediksi dari tujuan penelitian dan dari pernyataan tesis (thesis statement) yang telah dibuat. Pada proposal penelitian umum yang

digunakan untuk mendaftar ke program studi atau universitas tertentu, signifikansi dan hasil yang diharapkan tidak diperlukan sejauh thesis statement sudah terbangun dengan baik. Namun, jika proposal penelitian dibuat terkait dengan beasiswa atau proyek tertentu, maka bagian ini merupakan sesuatu hal yang penting.

Jika kita melamar beasiswa yang berhubungan dengan kerja sama antar negara (seperti Australia's Development Awards yang ditujukan bagi orang Indonesia), hal yang cukup penting untuk dituliskan adalah manfaat penelitian itu bagi Indonesia. Namun, penulisan manfaat ini perlu dipertimbangkan dengan baik sehingga bukan sesuatu manfaat yang bersifat umum saja.

Daftar Pustaka

Penggunaan daftar pustaka yang baik merupakan salah satu hal yang penting karena hal ini dapat menunjukkan kemampuan dan pengalaman kita dalam melakukan penelitian dan membuat pelaporan yang andal dan valid. Penulisan daftar pustaka akan lebih baik jika mengikuti tata cara pereferensian yang digunakan oleh calon pembimbing atau gaya selingkung baku yang dimiliki oleh program studi yang dituju.

It is very likely that there are many deviations from what the students initially propose as they make new discoveries and encounter unforeseen challenge over the research process. However, the proposal is a very important stage along the dissertation journey.

(Diadaptasi dari

Paltridge & Starfield, 2007 Thesis and Dissertation Writing in a Second Language, p. 62)

CONTOH RESEARCH PROPOSAL

Area: Ocean Affairs and Law of the Sea

Research Title:

Challenges and Opportunities in Indonesia's Maritime Boundary
Delimitation: A Legal and Technical Approach

(Sumber: http://www.borderstudies.info/wp-content/uploads/2011/02/Research_Proposal_Arsana.pdf)

General Description of Research

Indonesia is an archipelagic state with ten neighbours, namely clockwise from the northwest), India, Thailand, Malaysia, Singapore, Vietnam, the Philippines, Palau, Papua New Guinea, Australia and East Timor. Indonesia faces considerable challenges to settle and subsequently maintain its maritime boundaries with these neighbouring states. Achieving this objective has the potential to deliver significant benefits to both Indonesia itself and its maritime neighbours. In particular, maritime boundary delimitation provides certainty concerning sovereignty and sovereign rights between states. In economic terms, clarity of jurisdiction is likely to assist in enhanced ocean management and natural resource exploration and exploitation. In addition, the definition of boundaries helps to minimise or eliminate sources of stress between states. Indeed, it has been evident that failure in settling maritime boundary may cause devastating international disputes. Therefore, research and activities concerning maritime boundary settlement and management is of high importance for Indonesia.

Research Aims

To conduct a critical and comprehensive study and analysis concerning legal and technical/geodetic aspects of maritime jurisdiction and delimitation relevant to Indonesia. This research will contribute significantly to relevant disciplines such as surveying, geodesy, and law of the sea.

Methodology

This research will combine extensive literature study and technical experiments using geospatial data (maps, satellite images, and field data) to produce a comprehensive thesis concerning legal and technical/geodetic aspects of maritime boundary delimitation. Analysis will be achieved by comparative studies among the Indonesian cases against relevant state practice and international jurisprudence. Fieldwork will be conducted to carry out in-depth interviews and investigation involving government institutions related to maritime boundary issues in Indonesia such as Bakosurtanal, Ministry of Foreign Affairs, Ministry of Home Affairs, Ministry of Marine Affairs and Fisheries, Ministry of Energy and Mineral Resources, Indonesian Naval Hydro-Oceanographic Office, and educational institutions.

Relevant Research or Work Experience

My master thesis concerned maritime boundary delimitation between Indonesia and East Timor in the University of New South Wales. Since then, I have been publishing more than 50 publications (books, journals, newspapers, magazines, online publications, and conferences) within 3 years. As a lecturer I also established a new course in Boundary Delimitation and Demarcation and have been teaching students as well as providing technical training for government officials.

Significance to Indonesia

There are only a few researchers in Indonesia with expertise in technical aspects of the law of the sea, and even less in the particular area of maritime boundary delimitation. By completing this study and disseminating the results arising from it, it is hoped that the study will fill the vacancy of expertise in this area. The study I am proposing has potential of considerable significance to Indonesia in light of the number and scope of the international jurisdictional challenges it faces (internationally and nationally).

(497 words)

Area: Computer Science & Engineering

Research Title:

Model Checking in Software Engineering

(Sumber: <http://www.cse.unsw.edu.au/information/future-students/postgrad-research/sample-proposal.html>)

Keywords: concurrent systems, formal methods, software engineering

Concurrency is concerned with systems of multiple, simultaneously active computing components that interact with one another. While each component may be demonstrably correct, it is often difficult to predict what the behaviour will be when components interact. Concurrency bugs are particularly difficult to remove because they are often not reproducible. Problems that can arise include timing and sequencing problems, live-lock and dead-lock. These problems can lead to poor performance, unpredictable behaviour and system failure. In applications that are commercially or safety "critical", the results can be disastrous.

Model checking is a technique that can be used to detect concurrency problems. Classical model checking (see for example GPVW95, Kato99) is a brute-force technique that involves a complete state search of a finite-state (Buchi) automaton that represents the physical (concurrent) system together with the property that the user wishes to verify. The property is expressed in a temporal logic. The technique is well-known, and is used for example in the very popular model-checking tool SPIN (Holz97).

In this research, model checking of industrial size systems will be investigated with a view to making the technique more readily accessible to software engineers. This will involve defining more user-friendly but formal language to describe the finite-state automaton that models the system and the properties. This language can then be translated to input for SPIN (for example), which is then used to check the given properties of the system.

The new language should be related to semi-formal notations that are typically used in a software development setting to express the required functionality of the system. Two of the most popular notations used in software development are entity-relationship diagrams and data-flow diagrams. These notations are problematical because there is no semantic check of correctness, and properties cannot be checked. In this work, these diagrammatic notations will be translated to the new, more formal language, which in turn will be translated to input for an off-the-shelf model checker like SPIN. The former translation may need to be carried out interactively because the semi-formal notation may contain ambiguities and inconsistencies. These translators will comprise a tool that software designers can use to model how a system should behave. This model can be verified by the model checker and act as a specification of the system. Also included in the scope of this research is investigating whether this technology can be integrated with CASE tools that are used in industry.

A fundamental goal of this research is to make modelling an industrial system and verifying at the specification stage 'easy' for software engineers.

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GPVW95

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Kato99

J.-P. Katoen. Concepts, algorithms and tools for model checking. Arbeitsberichte der Informatik Vol. 32~1, University of Erlangen-Nuernberg, 1999.

(500 words)

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LAMPIRAN 1: PILIHAN KATA KERJA UNTUK RUJUKAN (*VERBS OF ATTRIBUTION*)

Diadaptasi dari:

Academic Language and Literacy Development, 2012, Writing a Proposal in Education (February 2012), Faculty of Education, Monash University, Melbourne, Australia. <http://www.education.monash.edu.au/students/current/study-resources/docs/booklet-writing-proposal-in-education.pdf>;

The Learning Centre, 2005, Academic Preparation Program – Postgraduate, The University of New South Wales, Sydney.

Lampiran ini dimaksudkan untuk memberikan referensi penggunaan kata kerja (dalam bahasa Inggris) yang biasa digunakan untuk studi literatur ataupun rujukan pada ide atau pernyataan dari orang lain.

(Diadaptasi dari Arnaudet, M. L. and Barrett., M.E., 1984. Approaches to academic reading and writing, Prentice-Hall, Englewood Cliffs, NJ, pp. 153-5)

Kata kerja yang bersifat netral dalam menyatakan ide, fakta atau pernyataan orang lain (*neutral verbs of restatement*):add

inform (of, about)	describe
remind (of, about)	remark
clarify	speak / write of
present	state
report (on)	

Kata kerja yang dapat berkonotasi positif ataupun negatif dalam menyatakan ide, fakta atau pernyataan orang lain (*verbs of restatement with a positive or negative connotation*):

apprise (someone of)	support
explain	argue (about)
indicate	express
urge	observe

Kata kerja yang menunjukkan **pendapat atau opini** kita terhadap pendapat, kesimpulan atau rekomendasi penulis lain (*verbs of opinion to report the content of another writer's opinion (or conclusion or suggestions)*):

Opini positif:

affirm	praise
agree (with)	support
applaud	desire
concur (with, in)	

Netral atau hanya melaporkan opini:

assert	expound (on)
believe (in)	maintain
claim	point out
determine	think

Kata kerja yang menunjukkan ketidakyakinkan kita atas pendapat penulis lain (*verbs of uncertainty to report the content of another writer's expression of doubt or uncertainty*):

challenge	dismiss
dispute	mistrust
question	wonder (at)
disagree (with)	argue against
doubt	hesitate
suspect (of)	

Jika merujuk pada argumen, maka kata kerja yang biasanya digunakan adalah (dalam bentuk pasif):

An argument can be:
founded on
based on
grounded in a theory/view/set of data
embedded in
underpinned by

Beberapa contoh awal kalimat dalam studi literatur:

Much research has focussed on (Foreman, 2001; Lee, 1999; Li & Phan, 2003; Smith et al. 2005)

A few researchers (Foreman, 2001; Lee, 1999, Smith, 2005) have paid attention to

Smith (2005) has headed the critique of ...

According to Jones (2001), the

In contrast with Li's (2002) view..., Smith (2005) argues that ...

It is clear from the literature that (Foreman, 2001; Lee, 1999; Li & Phan, 2003; Smith et al., 2005)

While many authors argue that ... (Foreman, 2001; Lee, 1999; Li & Phan, 2003; Smith et al. 2005), others maintain that ... (Johnston, 2003; Zavarce & Gonzalez, 2006).

LAMPIRAN 2: 15 KESALAHAN TATA BAHASA (DALAM BAHASA INGGRIS) YANG PALING SERING DILAKUKAN

Diadaptasi dari:

Burnett, L., 2001, 15 frequently occurring grammatical mistakes, The Learning Centre, UNSW, Sydney [unpublished material].

Kesalahan tata bahasa bukanlah faktor utama yang membuat sebuah proposal penelitian ditolak. Namun, kesalahan tata bahasa dapat mengurangi kualitas proposal penelitian yang kita tulis. Kita dapat melakukan pengecekan tata bahasa berdasarkan panduan berikut.

Berikut ini adalah 15 kesalahan tata bahasa yang terbesar dari tulisan seorang mahasiswa. Jika kita dapat mengurangi kesalahan-kesalahan berikut dari proposal penelitian yang kita tulis, maka tulisan kita menjadi lebih jelas dan benar.

1. Incorrect subject-verb agreement

Incorrect: The committee want a resolution to the problem.

Revised: The committee **wants** a resolution to the problem.

Incorrect: It is a combination of factors that cause the present situation.

Revised: It is a combination of factors that **causes** the present situation.

2. Wrong tense or verb form

Incorrect: They were required filling out a long form before enrolling in the course.

Revised: They **required** to fill out a long form before enrolling in the course.

3. Incorrect singular plural agreement

Incorrect: Tourism has been considered one of the most important factor in the town's economic development.

Revised: Tourism has been considered one of the most important **factors** in the town's economic development.

4. Incorrect word form

Incorrect: The primary emphasis of early research on leadership was psychologically and focused on the personality characateristic typical found among success leaders.

Revised: The primary emphasis of early research on leadership was **psychological and focused on** the personality characateristic **typically** found among success leaders.

5. Unclear pronoun reference

Incorrect: The boy and his father knew that he was in trouble.

Revised: The boy and his father knew that **the boy** was in trouble.

6. Incorrect use of articles

Incorrect: The meeting ended with call for humanitarian approach to be taken over a question of the refugees.

Revised: The meeting ended with **a call** for humanitarian approach to be taken over **the** question of the refugees.

Incorrect: The meeting will be finished in a hour.

Revised: The meeting will be finished in **an** hour.

7. Wrong or missing preposition

Incorrect: The study emphasized on the need of further research to ascertain the influence by television violence to young children.

Revised: The study emphasized on the need of further research to ascertain the influence **of** television violence to young children.

8. Omitted commas

Incorrect: When it comes to eating people differ in their tastes.

Revised: When it comes to eating, people differ in their tastes.

9. Superfluous commas

Incorrect: Field trips are required, in several courses, such as, botany and geology.

Revised: Field trips are required in several courses, such as botany and geology.

10. Possessive apostrophe error

Incorrect: In the current conflict its uncertain who's borders their contesting.

Revised: In the current conflict **it's** uncertain **whose** borders **they're** contesting.

11. Incorrect word used

Incorrect: The recession had a negative affect on sales.

Revised: The recession had a negative **effect** on sales.

Incorrect: The student took his advise to change the model.

Revised: The student took his **advice** to change the model.

12. Sentence fragment

Incorrect: Because some students work part-time as well as studying fulltime at university.

Revised: Because some students work part-time as well as studying fulltime at university **they are often very tired.**

13. Run-on sentence

Incorrect: Run-on sentences are sentences that run on forever they are sentences that ought to have been two or even three sentences but the writer did not stop to sort them out leaving the reader feeling exhausted by the sentences's end which is too long in coming.

Revised: Run-on sentences are sentences that run on forever. They are sentences that ought to have been two, or even three, sentences but the writer did not stop to sort them out. The reader is left feeling exhausted by the sentences's end, which is too long in coming.

14. Lack of parallelism

Incorrect: The candidate's goals include winning the election, national health program, and the educational system.

Revised: The candidate's goals include winning the election, **enacting** national health program, and **improving** the educational system.

15. Dangling, misplaced modifier

Incorrect: When writing a proposal, an original task is set for research.

Revised: When writing a proposal, **a scholar sets an original task for research.**

Incorrect: The professor wrote a paper on globalization in her office.

Revised: In her office the professor wrote a paper on globalization.

[illegible]

TENTANG PENULIS

I Made Andi Arsana, yang dipanggil Andi, adalah dosen di Jurusan Geodesi dan Geomatika Universitas Gadjah Mada, Yogyakarta. Saat ini Andi sedang menyelesaikan program S3nya di the Australian National Centre for Ocean Resources and Security (ANCORS), University of Wollongong, Australia dengan fokus penelitiannya adalah aspek teknis hukum kelautan, khususnya mengenai batas maritim. Andi telah mempublikasikan lebih dari 150 publikasi dalam bentuk buku, makalah di jurnal dan prosiding, artikel di surat kabar baik dalam bahasa Indonesia maupun bahasa Inggris. Andi merupakan pemakalah terbaik pada the Annual Research Seminar (Australia, 2005), pemenang the Olympic of Scientific Writing (Paris, 2009) dan pemenang lomba penulisan esai bertema “Solusi untuk Jakarta” (Belanda, 2012). Andi adalah presiden dari the Indonesian Students Association of the University of Wollongong, Australia (2009-2010) dan sekretaris the Balinese Community of New South Wales, Australia (2009-2011). Andi juga merupakan perwakilan (president) of the United Nations-Nippon Foundation Fellowship Alumni (2008-2009) dan sekretaris dari University of Wollongong AusAID scholar's Club (2008-2009). Andi adalah penerima berbagai awards: Australian Leadership Awards (2008), Alison Sudradjat Awards (2008), UN-Nippon Fellowship (2007), dan Australian Dev. Scholarship (2004-06). Andi dapat dihubungi di alamat email: **madeandi@gadjahmada.edu** atau **madeandi@gmail.com**.

Catharina Badra Nawangpalupi, yang dipanggil Katrin, adalah dosen di Jurusan Teknik Industri, Universitas Katolik Parahyangan (UNPAR), Bandung. Saat ini Katrin menjabat sebagai Ketua Program Studi Magister Teknik Industri, Program Pascasarjana, UNPAR. Katrin menyelesaikan studi S3-nya pada tahun 2010 dari University of New South Wales, Australia dengan fokus penelitian pada desain ramah lingkungan dan desain sistem produk dan jasa (*product service system*). Selain mengajar, Katrin juga banyak melakukan penelitian dalam mengevaluasi dampak lingkungan dan melakukan pendampingan untuk usaha kecil dan menengah (UKM). Katrin merupakan Research Fellow pada Pusat Kajian UKM UNPAR dan merupakan fasilitator dan pelatih untuk program *capacity building* disamping pelatih dalam bidang keselamatan kerja, ergonomi. Katrin merupakan anggota Australia Awards Alumni Reference Group untuk tim Energi dan Inovasi Teknologi dan Master Trainer untuk *Peer-reviewed journal article writing Workshop*. Katrin adalah penerima berbagai awards: Australian Development Scholarship (2000 dan 2005-2010), FBE Research Cluster Initiatives Grant (2007) dan Carrick Institute Citation for Outstanding Contribution to Student Learning, Australia (2006). Katrin dapat dihubungi di alamat email: **cnawangpalupi@gmail.com** atau **katrin@unpar.ac.id**.

