

PERANGKAT KOHESIF DALAM ABSTRAK ARTIKEL ILMIAH

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Abstrak

Sebagai sebuah genre wacana tulis yang ringkas namun mampu memberi gambaran menyeluruh tentang isi sebuah karya tulis, abstrak harus memiliki ikatan gramatika dan leksikal yang memberi makna pada gagasan yang dituangkan. Gagasan itu disebut perangkat gramatika, yang dibedakan menjadi beberapa jenis. Tulisan ini bermaksud mengidentifikasi jenis perangkat kohesif tersebut, kemudian mengidentifikasi contoh perangkat yang paling sering muncul. Enam buah abstrak digunakan sebagai sampel dalam pengidentifikasian ini. Dari hasil identifikasi diperoleh dua contoh perangkat kohesif yang paling sering muncul, yaitu *and* dan *this*.

Key words: *abstrak, moves, perangkat kohesif dan jenis.*

1. Pendahuluan

Abstrak adalah bagian tak terpisahkan dari sebuah artikel ilmiah, artikel hasil penelitian, atau laporan hasil penelitian itu sendiri. Abstrak ditulis setelah artikel atau penelitian itu selesai dilaksanakan, tapi dalam sebuah tulisan abstrak ditempatkan paling depan. Hal ini karena abstrak menjadi bagian sebuah tulisan yang paling pertama akan dibaca orang. Oleh karena itu, abstrak harus memberi gambaran menyeluruh tentang isi artikel atau penelitian. Dengan demikian, abstrak hanya mengandung informasi faktual, yakni informasi yang ada dalam artikel atau hasil penelitian.

Orang yang sedang mencari informasi dalam suatu artikel atau hasil penelitian cukup membaca abstrak saja. Dia tidak perlu membaca seluruh isi artikel atau hasil penelitian. Dalam kaitan ini, abstrak berfungsi untuk menghemat waktu pembaca. Sehingga, abstrak itu harus ringkas, jelas, tepat, berdiri sendiri, dan objektif. (Santoso, 2009).

Abstrak itu harus ringkas, tapi pada saat yang sama dia harus memberikan gambaran menyeluruh tentang isi artikel atau hasil penelitian. Abstrak pula yang akan

menentukan apakah pembaca berketetapan hati akan membaca seluruh isi artikel atau hasil penelitian. Agar mampu memberi gambaran menyeluruh tentang isi artikel atau hasil penelitian, penulis abstrak harus memperhatikan elemen-elemen –atau biasa disebut *moves-* yang harus dituliskan dalam sebuah abstrak. Elemen-elemen itu misalnya *tujuan, metode, lingkup, hasil dan kesimpulan*. Elemen yang dituliskan pada abstrak tidak terbatas pada ke lima elemen itu. Jumlah dan macam elemen bisa bervariasi sebagaimana dicontohkan dalam abstrak berikut.

2. Contoh Abstrak

Contoh abstrak berikut memperlihatkan bagaimana elemen-elemen tersebut dihadirkan dalam sebuah abstrak. Ada enam buah abstrak yang ditampilkan dalam tulisan ini. Tiga contoh pertama diambil dari <https://unilearning.uow.edu.au/report/2bii1.html> (didownload tanggal 14/10/2017 jam 9.05) sedangkan tiga contoh kedua diambil dari <https://student.unsw.edu.au/sample-abstracts-writing> (didownload tanggal 14/10/2017 jam 9.15)

Contoh 1: Abstrak dari Kimia

(Description aim/objective) In this experiment, chromatography was used to analyse amino acids in solution. Standards were used to identify unknown amino acids in a mixture. **(Method)** Ascending layer chromatography with an isopropanol-based solvent was used to separate the amino acids, which were then detected with ninhydrin. **(Result)** The unknown mixture analysed was found to contain aspartate and histidine. It was observed that hydrophobic amino acids were most mobile. **(Conclusion)** This technique was shown to be an effective way of analysing unknown mixtures of amino acids. **(Further Conclusion)** A mechanism for ninhydrin binding to amino acids is proposed, based on observations from this experiment.

relationship remained unchanged. Differences in the response of the two materials are attributed to the differences in the activation energy for grain growth, and in grain boundary mobility. **(Further results (comparison of two methods of sintering))** Modulus of rupture and toughness of both microwave and conventionally sintered samples were similar. Following isothermal heating at 13000C, microwave heated samples were found to be significantly more dense than conventionally heated samples. This temperature also restricted grain growth once densification was approaching completion. **(Significance of the results)** These findings have significant implications for the commercial application of microwave sintering. It appears that this method of sintering produces a superior product to conventional sintering.

Contoh 2: Abstrak dari Laporan Ilmiah

(Aim of the research) A detailed comparison of the properties and microstructures of conventionally sintered and microwave sintered samples of 3 mol% and 8 mol% yttria zirconia was performed. **(Method)** Identical thermal profiles were used for both types of heating. **(Summary of overall)** For both materials, microwave heating was found to enhance the densification processes which occur during constant rate heating. **(Detailed result for one of the experiment's samples)** The 3 mol% yttria zirconia material exhibited a shift in the grain size/density relationship which favours densification, resulting in higher density samples with smaller grain sizes at densities below 96% of theoretical density. At higher densities, significant grain growth occurs. **(Detailed result for the other of the experiment's samples)** For the 8 mol% yttria zirconia material, the grain size / density

Contoh 3: Abstrak dari Biologi

(Background Information) Many plants in Australia have their seeds buried in order for the species to survive fires. The seeds start to germinate under the soil at certain temperatures. **(Outline of what was investigated in this experiment)** Seeds of *Acacia terminalis* and *Dillwynia floribunda* were examined in this experiment. **(Hypothesis)** It was hypothesised that the seeds need heat for the germination to start. **(Summary of Method)** Seeds of the two species were treated in hot and cold water and left to start germinating. **(Summary of Results)** *Acacia terminalis* showed a significant response in germination after the hot water treatment while *Dillwynia floribunda* did not. Neither seed showed a response in germination after cold water treatment. **(Summary of Discussion)** The results for *Dillwynia floribunda* were unexpected but may be explained

by factors such as water temperature and the length of time the seeds remained in the heated water.

Contoh 4: Genetic Mechanisms and Dissemination of Antibiotic Resistance

(Background statement) The spread of antibiotic resistance is aided by mobile elements such as transposons and conjugative plasmids. **(Narrowing statement)** Recently, integrons have been recognised as genetic elements that have the capacity to contribute to the spread of resistance. **(Elaboration of narrowing)** Integrons constitute an efficient means of capturing gene cassettes and allow expression of encoded resistance. **(Aims)** The aims of this study were to screen clinical isolates for integrons, characterise gene cassettes and extended spectrum b-lactamase (ESBL) genes. **(Extended aim)** Subsequent to this, genetic linkage between ESBL genes and gentamicin resistance was investigated. **(Results)** In this study, 41 % of multiple antibiotic resistant bacteria and 79 % of extended-spectrum b-lactamase producing organisms were found to carry either one or two integrons, as detected by PCR. **(Results)** A novel gene cassette contained within an integron was identified from *Stenotrophomonas maltophilia*, encoding a protein that belongs to the small multidrug resistance (SMR) family of transporters. **(Results)** pLJ1, a transferable plasmid that was present in 86 % of the extended-spectrum b-lactamase producing collection, was found to harbour an integron carrying *aadB*, a gene cassette for gentamicin, kanamycin and tobramycin resistance and a *blaSHV-12* gene for third generation cephalosporin resistance. **(Justification of results)** The presence of this plasmid accounts for the gentamicin resistance phenotype that is often associated with organisms displaying an extended-spectrum b-lactamase phenotype. (Jones 2004, p.9)

Contoh 5: Permeable Treatment Walls

(Background statement) A review of groundwater remediation in use today shows that new techniques are required that solve the problems of pump and treat, containment and in-situ treatment. **(Narrowing statement)** One such technique is the method that involves the use of permeable treatment walls. **(Elaboration)** These methods use a reactive medium such as iron to remediate contaminated groundwater. **(Aim)** Several methods of implementing this remediation strategy have been described. **(Elaboration of aim)** These methods include injection and trenching. **(Specific focus of aim)** The use of a funnel and gate system via a trench has been examined in detail **(Methods)** using a groundwater modelling option of the FLAC program. The modelling involved an analysis of the effect of changing the lengths of the walls and gate, varying the permeability, and varying the number of gates. **(Results)** The results showed that increasing the wall length, gate length and permeability increases the size of the plume captured. **(Key result)** An important factor in designing the walls is the residence time of the water in the gate or the contact time of the contaminant with the reactive media. **(Evaluation of results)** A sensitivity analysis has been conducted that shows that increasing the size of the capture zone decreases the residence

time (**Limitations**) which will limit the design. (**Future applications and research**) The results of the modelling and sensitivity analysis are presented such that they can be used as an aid to the design of permeable treatment walls.

(Dasey G. 1996 p.i)

* This is the aim of the research, but it is not very clearly stated. It might be better if the aim was made more explicit.

Contoh 6: The Effects of Flouride on the Reproduction of Three Native Australian Plant Species

Note: This abstract is referred to as an Executive Summary (original 2 pages)

(**Background statement**) No other form of environmental pollution has had as widespread detrimental effect on the growth and reproductive capacity of plants as air pollution. (**Narrowing statement**) Fluorides have long been recognized as highly toxic and research has shown that they are the most phytotoxic of all air pollutants. (**Elaboration of narrowing statement**) One of the most subtle impacts of fluoride on plant development is on their reproductive processes... There has been very little work directed towards forest trees, and especially native Australian species. (**Broad purpose of study**) An understanding of the effects of fluoride on the reproductive processes of plant species within a forest community may help predict changes within the community following an increase in atmospheric fluoride arising from industrial sources.

(**Narrowing of purpose of study**) This study investigates the effects of increased atmospheric fluoride emissions from an aluminium smelter, on the reproductive processes of three native species, *Banksia aemula*, *Bossiaea heterophylla* and

Actinotus helianthi. (**Elaboration of purpose**) Attention has also been paid to the soil seed reserve as an important resource for the replacement of adult plants within the community.

(**Results**) For *Banksia aemula* the study found that the reproduction of this fluoride-sensitive species may be affected in the close vicinity of the smelter... For the two ground layer species the study found that the fluoride may be affecting the *Bossiaea heterophylla* but having no discernible or very little effect on the *Actinotus helianthi*.**

(**Significance of results 1**) The implications of these results for the forest community are that sensitive native species such as the long-lived *Banksia aemula* and *Bossiaea heterophylla* will be removed from the plant community close to the smelter. This will reduce the resources they provide to the existing ecosystem but will, however, free more resources for the more resistant opportunist species such as *Actinotus helianthi* as well as the many introduced species. (**Significance of results 2**) The soil seed reserve study indicated that the seed reserve was very small in all areas. This would have several negative impacts on the natural regeneration of the area in the event of the closure of the smelter...

(**Future research**) Further research is recommended to assess the biochemical pathways for both the vegetative and reproductive processes and the mechanisms of the pollination of this important species... This may need to be repeated at certain intervals to monitor any further changes that may result from the higher fluoride emissions of the new expansion.

3. Perangkat Kohesi

Dalam bidang linguistik, kohesi adalah ikatan gramatika dan leksikal dalam suatu wacana atau kalimat yang mengikat wacana atau kalimat itu dan masih memberikan makna. Untuk bisa melakukan ikatan yang

bermakna tersebut, diperlukan beberapa Perhatikan duan contoh teks berikut (Anne Scott Hagen, 2017). Teks pertama tanpa perangkat kohesif sedangkan teks kedua sudah dilengkapi dengan perangkat kohesif.

Text 1

Bobby was a Skye Terrier. Bobby roamed the streets of Edinburgh. Bobby met John Grey in the 1850s. Grey worked as a night watchman in the Edinburgh police. Bobby kept John Grey company. The winters in Edinburgh can be very cold. Grey fell sick with tuberculosis. Tuberculosis was a fatal disease back in the 1800s. On 15 February 1858, Grey died.

Text 2

Bobby was a Skye Terrier roaming the streets of Edinburgh in the 1850s until he met John Grey. Grey worked as a night watchman in the Edinburgh police and Bobby kept him company. The winters in Edinburgh can be very cold and one day Grey fell sick with tuberculosis. This was a fatal disease back in the 1800s and on 15 February 1858, Grey died.

Perhatikan bagaimana 3 kalimat pertama dalam text 1 digabung menjadi 1 kalimat dalam teks 2 dengan hanya menggunakan 1 kata Bobby kemudian menggunakan pronomina he dan konektor until. Kalimat bentukan dalam teks 2 itu tetap mempunyai makna sesuai 3 kalimat dalam teks 1 tersebut. Perhatikan pula bahwa teks 1 berisi 9 kalimat sedangkan teks 2 hanya berisi 4 kalimat. Dari sini bisa disimpulkan bahwa perangkat kohesif berfungsi untuk menggabungkan kalimat dengan tanpa mengubah makna dari kalimat asalnya.

Halliday dan Hasan (1976) membedakan perangkat kohesif menjadi 5 yaitu reference, substitution, ellipsis, conjunction, dan lexical cohesion.

perangkat seperti konjungsi dan pronomina.

References meliputi personal reference, proper noun, demonstrative dan comparative

Comparative reference contributes to textual cohesion by setting up a relation of contrast or contrast and is expressed by such adjectives as: *same, identical, equal*, adjective in a comparative degree, and adverbs such as *identically, likewise, so, such*, etc.

Substitution or **Ellipsis** berkaitan dengan peniadaan kata atau meninggalkan kata. Ini cara yang digunakan untuk menghilangkan repetisi atau pengulangan kata.

Contoh:

“Now we’re finishing our essays. I know you want to go out, but before you can do that, please finish.

‘do that’ menghindari pengulangan kata ‘go out’. Kemudian pengulangan ‘finish our essays’ cukup ditulis ‘please finish’

(J Manuel Campos N, 2013, <https://englishpost.org/2013/06/21/what-type-of-cohesive-devices-are-there/>).

Konjungsi adalah konektor yang menggabungkan dua klausa. Konjungsi menandai hubungan yang hanya bisa dipahami melalui acuan (reference) pada bagian lain dari teks itu. Ada 4 jenis konjungsi, yaitu (1) additive, indicated by *and, or also, in addition, furthermore, besides, similarly, likewise, by contrast, for instance*. (2) adversative, indicated by *but, yet, however, instead, on the other hand, nevertheless at any rate, as a matter of fact*. (3) causal, indicated by *so, consequently, it follows, for, because, under the circumstance, for this reason* and (4) temporal which is indicated by *then, after that, the following day*, etc.

Lexical Cohesion terjadi ketika dua kata dalam suatu teks dihubungkan secara semantik dalam beberapa cara. Ada 5 jenis lexical cohesion, yaitu (1) collocation, (2) repetition, (3) synonymy, (4) antonymy, and (5) hyponymy.

SUMMARY OF COHESIVE DEVICES

<p>REFERENCE: Items that refer to something else in the text for their representation.</p> <ul style="list-style-type: none"> a. Pronominal; e.g. she, his, they, theirs b. Proper noun; e.g. Anton, Melia c. Demonstratives; e.g. this/these, that/those, here/there d. Comparatives; e.g. identify/similarity/difference/ordinals/ comparatives /superlatives; e.g. similar, bigger, such, different.
<p>ELLIPSIS/SUBSTITUTION: elements left unsaid or unwritten but are understood by the reader/the speaker.</p> <ul style="list-style-type: none"> a. Noun ellipsis: noun omission, e.g. She likes a yellow dress but I like the blue. b. Verbal ellipsis: verb omission, e.g. Tony drew a small boat and Amir a big boat. c. Clausal ellipsis: clause emission, e.g. A: would you like to help me? B: Yes, please
<p>CONJUNCTION: connectors between two independent sentences.</p> <ul style="list-style-type: none"> a. Additive: e.g. and, moreover, furthermore b. Adversative: e.g. but, yet, on the other hand, however c. Causal: e.g. so, then, therefore, hence, thus d. Temporal: e.g. and then, then, after, soon, after that, finally, next time e. Appositive: e.g. in other words, I mean, for example, actually
<p>LEXICAL COHESION:</p> <ul style="list-style-type: none"> a. Collocation: e.g. go home, have fun b. Repetition: e.g. rain/rainy/raining,

<p>swim/swimming</p> <ul style="list-style-type: none"> c. Synonym: e.g. frightened, afraid d. Antonym: e.g. big/small e. Hyponymy: (general-specific relations) e.g. fruit/banana, apple
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4. Perangkat Kohesif Dalam Abstrak

Dari penjelasan di atas dapat diketahui bahwa abstrak bukan hanya ringkas (dibatasi oleh jumlah kata) tapi dalam keringkasannya dia juga harus memberikan informasi menyeluruh tentang isi sebuah artikel atau hasil penelitian. Inilah alasan mengapa abstrak harus disusun berdasarkan elemen atau moves yang lazim dipakai. Penjelasan di atas juga mengindikasikan banyaknya cohesive devices (perangkat kohesif) dalam wacana tulis. Tulisan ini bermaksud mencari jawaban atau dua pertanyaan berikut:

- a. Jenis perangkat kohesif apa sajakah yang muncul dalam abstrak?
- b. Dari jenis perangkat kohesif yang muncul, jenis apakah yang paling sering muncul?

Untuk menjawab kedua pertanyaan tersebut, contoh abstrak yang akan digunakan sebagai contoh dalam sub bab 2 akan digunakan sebagai sample. Sedangkan perangkat kohesif yang akan

diidentifikasi dalam setiap abstrak adalah perangkat kohesif sebagaimana ditulis dalam summary Cohesive Devices pada sub bab 4.

Berdasarkan hasil identifikasi terhadap ke enam sample abstrak, jenis perangkat kohesif yang berhasil ditemukan adalah sebagai berikut:

**JENIS PERANGKAT KOHESIF
DALAM ABSTRAK ARTIKEL
ILMIAH**

No	Perangkat Kohesif	Nomor Abstrak					
		1	2	3	4	5	6
1.	REFERENCE						
	Pronoun	It (1)	It (1)	It (1) Their (1)		They (1)	They (2) Their (1)
	Proper Noun			Australia (1)			
	Demonstrative	This (3)	This (2) These (2)		This (6)	This (1) These (2)	This (6) These (1)
	Comparative	Most (1)	More than (1) Higher (2) Similar (1) Smaller (1)			Such (1)	Most (2) More (1) Higher (1)
2.	ELLIPSIS/SUBSTITUTION						
	Noun Ellipsis		Both types (1) Both materials (1) Heated samples (1)	Seeds of the two species (1) Neither seeds showed... (1)			
	Verbal Ellipsis			...while Dwillvana did not (1)			
	Clausal Ellipsis						
3.	CONJUNCTION						
	Addition		And (4)	And (4)	And (4)	And (6)	And (6) As well as (1)
	Adversative			But (1) While (1)			But (2) However (1)
	Causal						
Temporal	Then (1)	Once (1)	After (1)	Recently (1) Subsequent (1)			

No	Perangkat Kohesif	Contoh Perangkat Kohesif
1.	REFERENCE	
	Pronoun	It (3), They (3), Their (2)
	Proper Noun	Australia (1)
	Demonstrative	This (18), These (5)
	Comparative	Most (3), More (2), Higher (3), Similar (1), Such (1)
2.	ELLIPSIS/SUBSTITUTION	
	Noun Ellipsis	Both types (1), Both materials (1), Heated samples (1), Seeds of the two species (1), Neither seeds showed (1)
	Verbal Ellipsis	...while Dwillvana did not (1)
	Clausal Ellipsis	
3.	CONJUNCTION	
	Addition	And (24), As well as (1)
	Adversative	But (3), While (1), However (1)
	Causal	
	Temporal	Then (1), Once (1), After (1), Recently (1), Subsequent (1)
	Appositive	
4.	LEXICAL COHESION	
	Collocation	Results in (1), Means of (1), Belongs to (1)
	Repetition	
	Synonym	
	Antonym	
	Hyponymy	Plants (1), Seeds (1), Species (1)

5. Kesimpulan

Sebagaimana jenis wacana tulis lainnya, abstrak –sebuah wacana tulis yang ringkas namun mampu memberi gambaran menyeluruh tentang isi sebuah artikel ilmiah atau laporan hasil penelitian, juga memiliki ikatan gramatika dan leksikal yang memberi makna pada gagasan yang dituangkan.

Hampir semua jenis perangkat kohesif yang disebutkan oleh Halliday dan Hasan (1976) ditemukan dalam 6 sampel abstrak yang digunakan dalam tulisan ini. Namun jenis perangkat itu didominasi oleh **Reference** (pronomina, proper noun, demonstrative, dan

Tabel di atas memperlihatkan bahwa perangkat kohesif yang muncul dalam sampel abstrak beserta jumlah kemunculannya adalah sebagai berikut:

comparative) dan **Conjunction** (addition, adversative, dan temporal).

Di bawah perangkat reference, contoh kohesif yang paling sering muncul adalah perangkat kohesif yang masuk dalam sub jenis demonstrative, yaitu **this** (sebanyak 18 kemunculan). Sedangkan di bawah perangkat conjunction, contoh perangkat yang paling sering muncul adalah perangkat kohesif yang

masuk dalam sub jenis addition, yaitu **and** (sebanyak 24 kemunculan).

DAFTAR PUSTAKA

Campos, J Manuel N, 2013,
<https://englishpost.org/2013/06/21/what-type-of-cohesive-devices-are-there/>.

Hagen, Anne Scott dalam Text Cohesion,
<https://ndla.no/en/node/56814?fag=42>.

Halliday, M. A. K., and Ruqaiya Hasan.
1976.*Cohesion in English*. London: Longman.

Satoso. 2009. sebagaimana dikutip dalam *Cara Menulis Abstrak yang Baik dan Benar* dalam
<http://imranbuhe.wordpress.com/cara-menulis-abstrak-yang-baik-dan-benar/> diunduh tanggal 12 Sept 2013.

<https://unilearning.uow.edu.au/report/2bii1.html>, diunduh tanggal 14 Oktober 2017.

<https://student.unsw.edu.au/sample-abstracts-writing>, diunduh tanggal 14 Oktober 2017.