A WORDPRESS-BASED ACADEMIC WRITING INSTRUCTIONAL MODEL FOR EFL STUDENTS IN A THAI UNIVERSITY

Atikhom Thienthong

A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy in English Language Studies

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รูปแบบจำลองการสอนการเขียนเชิงวิชาการผ่านเว็ร์ดเพรสสำหรับนักศึกษาที่เรียนภาษาอังกฤษในฐานะภาษาต่างประเทศในมหาวิทยาลัยไทย

นายอธิคม เทียนทอง

วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาศิลปศาสตรดุษฎีบัณฑิต

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อธิคม เทียนทอง : รูปแบบจำลองการสอนการเขียนเชิงวิชาการผ่านเวิร์ดเพรสสำหรับนักศึกษาที่เรียนภาษาอังกฤษในฐานะภาษาต่างประเทศในมหาวิทยาลัยไทย (A WORDPRESS-BASED ACADEMIC WRITING INSTRUCTIONAL MODEL FOR EFL STUDENTS IN A THAI UNIVERSITY) อาจารย์ที่ปรึกษา : อาจารย์ ดร.สุขสรรพ์ ศุภเศรษฐเสรี, 300 หน้า

งานวิจัยนี้มีวัตถุประสงค์ 4 ประการ คือ (1) เพื่อพัฒนารูปแบบจำลองการสอนการเขียนเชิงวิชาการผ่านเวิร์ดเพรสเพื่อใช้เป็นกรอบแนวคิดในการสร้างบทเรียนการเขียนเชิงวิชาการผ่านเว็บ (2) เพื่อประเมินประสิทธิภาพบทเรียนการเขียนเชิงวิชาการผ่านเวิร์ดเพรสโดยใช้เกณฑ์มาตรฐาน 80/80(3) เพื่อศึกษาประสิทธิผลของบทเรียนการเขียนเชิงวิชาการผ่านเวิร์ดเพรส ที่มีต่อความสามารถทางการเขียนเชิงวิชาการของนักศึกษาระดับมหาวิทยาลัย และ(4) เพื่อศึกษาระดับความพึงพอใจของผู้เรียนที่มีต่อบทเรียนการเขียนเชิงวิชาการผ่านเวิร์ดเพรส งานวิจัยนี้แบ่งการศึกษาออกเป็น 2 ช่วงที่สำคัญ ได้แก่ การพัฒนา และการวิจัย ในช่วงการพัฒนาประกอบไปด้วยการสร้างรูปแบบจำลองการสอนการเขียนเชิงวิชาการผ่านเวิร์ดเพรส ซึ่งได้รับการประเมินจากผู้เชี่ยวชาญจำนวน 3 ท่านโดยใช้แบบประเมิน และทำการทดสอบประสิทธิภาพเบื้องต้นของบทเรียนการเขียนเชิงวิชาการผ่านเวิร์ดเพรสกับนักศึกษาจำนวน 31 คน ส่วนในช่วงการวิจัยประกอบไปด้วยการนำบทเรียนการเขียนเชิงวิชาการผ่านเวิร์ดเพรสไปใช้จริงรวมระยะเวลา 20 ชั่วโมง กับนักศึกษาจำนวน 33 คน ผู้ร่วมวิจัยทั้ง 64 คน เป็นนักศึกษาวิชาเอกภาษาอังกฤษจำนวน 2 ห้องเรียน ที่ลงเรียนในรายวิชา การเขียนเชิงวิชาการ ที่มหาวิทยาลัยอุบลราชธานี ทั้งข้อมูลเชิงปริมาณและเชิงคุณภาพเก็บจากแบบทดสอบการเขียนก่อนและหลังเรียน แบบสอบถามความพึงพอใจ และการสัมภาษณ์แบบกึ่งโครงสร้าง และวิเคราะห์โดยใช้ทั้งวิธีการทางสถิติและการวิเคราะห์เชิงเนื้อหา

ผลการวิจัยพบว่า รูปแบบจำลองการสอนการเขียนเชิงวิชาการผ่านเวิร์ดเพรสได้รับการประเมินจากผู้เชี่ยวชาญให้เป็นกรอบแนวคิดที่อยู่ในเกณฑ์ "เหมาะสมอย่างมาก" สำหรับการพัฒนาบทเรียนการเขียนเชิงวิชาการผ่านเว็บ โดยมีค่าเฉลี่ยรวม 4.45 ด้านประสิทธิภาพของกระบวนการและผลลัพธ์การเรียน (E_1/E_2) สำหรับทั้ง 4 บทเรียน เท่ากับ 82.01/81.13 82.22/81.01 82.58/82.12 และ 82.02/81.01 ตามลำดับ ซึ่งเป็นไปตามเกณฑ์มาตรฐาน 80/80 ส่วนผลการทดสอบการเขียนเรียงความก่อนและหลังเรียนพบว่า ผู้เรียนมีการพัฒนาความสามารถด้านการเขียนเชิงวิชาการอย่างมีนัยสำคัญทางสถิติ ($t(32)=17.34$, $p<.01$) และเมื่อวิเคราะห์งานเขียนของผู้เรียนอย่างละเอียดพบว่า ผู้เรียนเลือกใช้ภาษาได้อย่างเหมาะสม เพื่อให้บรรลุหน้าที่ของวาทศิลป์ (Rhetorical functions) ได้มากกว่าและหลากหลายกว่า หลังจากเรียนด้วยบทเรียนการเขียนเชิงวิชาการผ่านเวิร์ดเพรส และผลการศึกษาจากแบบสอบถามและการสัมภาษณ์พบว่า ผู้เรียนมีความพึงพอใจต่อบทเรียนการเขียนเชิงวิชาการ

ผ่านเวิร์ดเพรสในระดับ "สูงมาก" โดยมีค่าเฉลี่ยรวม 4.29 โดยเฉพาะอย่างยิ่งเนื่องจากบทเรียนมีประโยชน์ต่อการพัฒนาทักษะการเขียนเชิงวิชาการของผู้เรียน และสะดวกต่อกระบวนการเขียนและการเรียนรู้ด้วยตนเอง ผลการวิจัยนี้แสดงให้เห็นว่า รูปแบบการจำลองการสอนสามารถนำไปใช้เป็นกรอบแนวคิดในการพัฒนาบทเรียนผ่านเว็บ เพื่อสนับสนุนและปรับปรุงการเขียนเชิงวิชาการของนักศึกษาระดับมหาวิทยาลัยได้เป็นอย่างดี

สาขาวิชาภาษาต่างประเทศ
ปีการศึกษา 2559

ลายมือชื่อนักศึกษา _____
ลายมือชื่ออาจารย์ที่ปรึกษา _____

ATIKHOM THIENTHONG : A WORDPRESS-BASED ACADEMIC WRITING INSTRUCTIONAL MODEL FOR EFL STUDENTS IN A THAI UNIVERSITY. THESIS ADVISOR : SUKSAN SUPPASETSEREE, Ph.D., 300 PP.

INSTRUCTIONAL MODEL/ACADEMIC WRITING/GENRE-BASED APPROACH/WORDPRESS-BASED LESSONS/EFL UNIVERSITY STUDENTS

The objectives of this study are fourfold: (1) to develop a WordPress-based Academic Writing (WAW) Instructional Model as a conceptual framework for constructing web-based academic writing lessons; (2) to determine the efficiency of the WAW lessons according to the 80/80 criterion; (3) to investigate the effectiveness of the WAW lessons on university students' academic writing abilities; and (4) to explore the levels of students' satisfaction with the WAW lessons. The study consisted of two necessary phases: development and research. The development phase involved constructing the WAW Instructional Model which was evaluated for its applicability by three experts using evaluation forms and trialling the WAW lessons with 31 students. The research phase entailed fully implementing the WAW lessons with 33 students for 20 hours. These 64 participants were two intact classes of English-major students who registered for Academic Writing at Ubon Ratchathani University. Both quantitative and qualitative data were collected from writing pretest and posttest, satisfaction questionnaire, and semi-structured interview. They were analyzed using both statistical methods and content analysis.

The study found that the WAW Instructional Model was appraised as a "very appropriate" conceptual framework for developing web-based academic writing lessons with a cumulative mean of 4.45. The efficiency values for the process and the product (E_1/E_2) of the four lessons were 82.01/81.13, 82.22/81.01, 82.58/82.12, and 82.02/81.01 respectively, which achieved the 80/80 criterion. The results from the pretest and posttest essays showed that the students demonstrated significantly statistical improvement on their academic writing abilities ($t(32)=17.34$, $p<.01$). The fine-grained analysis of the students' essays revealed that the students deployed a greater number and broader range of appropriate lexico-grammatical features intended to perform rhetorical functions after the treatment. The results from the questionnaire and interview indicated that the students expressed a "very high" level of satisfaction with the WAW lessons with a cumulative mean of 4.29, especially because they were useful for their academic writing skills and convenient for their composing and self-learning processes. The results of this study suggest that an instructional model can serve as a viable conceptual framework for developing web-based lessons to support and improve university students' academic writing.

School of Foreign Languages Student's Signature _____

Academic Year 2016 Advisor's Signature _____

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LIST OF ABBREVIATIONS

ADDIE	=	Analyze, Design, Develop, Implement, Evaluate
EC	=	English and Communication
EFL	=	English as a Foreign Language
ESL	=	English as a Second Language
ICT	=	Information and Computer Technology
ISD	=	Instructional Systems Design
L1	=	First Language
L2	=	Second/Foreign Language
LMS/CMS	=	Learning/Content Management System
SFL	=	Systemic Functional Linguistics
SLA	=	Second Language Acquisition
UBU	=	Ubon Ratchathani University
WAW	=	WordPress-based Academic Writing
WBI	=	Web-based Instruction
ZPD	=	Zone of Proximal Development

CHAPTER 1

INTRODUCTION

This chapter contains the rationale of the study, the statement of the problem, the research objectives, the research questions, the expected outcomes, the significance of the study, the definitions of the key terms, and the conceptual framework of the present study. Finally, it finishes with the structure of this thesis.

1.1 Rationale of the Study

Academic writing has been an important issue in pedagogy and research in the undergraduate context. In this context, university students' success often depends on their ability to write a variety of academic texts, such as academic essays, course papers, project proposals, and independent studies. In order to develop their academic writing skills, genre-based approaches to academic writing have been introduced as an alternative teaching method. The concept of genre has attracted greater interest in the strands of writing pedagogy and research (Hyland, 2007; Paltridge, 2007). This growing attention takes place in response to a shifting conception of academic writing that incorporates better insights into how texts are created for social purposes in a certain context (Hyland, 2007). In Thailand, genre-based pedagogies have increasingly played an influential role in academic writing due to relatively unsatisfactory outcomes of product-based approaches. Empirically, a genre-based approach grounded in systemic functional linguistics (SFL) (Halliday, 1994; Halliday

& Hasan, 1989; Knapp & Watkins, 2005; Martin & Rothery, 1993) has proved effective for EFL learners and has been advocated for implementation in Thai composition classrooms (e.g., Chaisiri, 2010a, 2010b; Changpueng, 2012; Kongpetch, 2006; Lerdpreedakorn, 2010). This SFL genre-based approach is considered to be pedagogically accessible and feasible to teachers and students who are culturally disadvantaged (Derewianka, 2003; Hyland, 2004a; Johns, 2008; Knapp & Watkins, 2005). The SFL notion of genre views writing as goal-oriented, semantically driven, and socially situated (Derewianka, 2003; Johns, 2003; Knapp & Watkins, 2005; Martin, 1989). This SFL orientation foregrounds meaning in context and rhetorical effects, thereby situating academic writing in a meaningful context.

Writing is a goal-oriented, meaning-making act in which language is deployed as a functional tool to fulfill a social purpose. In this way, learning to write does not simply focus on context-absent formal accuracy and discrete instances of language. Rather, language is contextualized and purposeful, not seen as mainly linguistic features of writing. Hyland (2003) states that SFL genre theory foregrounds a relationship between language and its social purpose. Language serves as a lexico-grammatical resource for construing context-bound meanings through a written text to present its disciplinary content or knowledge. These meanings are configured in functional units to produce a logical and coherent text for a given communicative setting or purpose (Knapp & Watkins, 2005). In practice, a genre-based or functional approach to writing is worthwhile in that linguistic features and structures are taught and studied in an explicit way that raises students' awareness and understanding of linguistic choices or "the process of making meanings...in order to empower [them] to make informed decisions" (Yunick, 1997, p.321). These linguistic decisions are

activated in terms of functions lexico-grammatical features perform, rather than merely correct grammatical forms.

One central tenet of SFL lies in a rhetorical functionality of language in writing. In this view, writing is an interpersonal process during which authorial voice and social perspectives are negotiated and projected in their written text for a credible and persuasive argument. That is to say, writers manipulate lexico-grammatical features as meaning-making resources they develop to shape their argument by responding to the expectations of readers and at the same time projecting their level of personality or authorial voice. Ivaniĉ and Camps (2001) argue that "...'voice' is not an optional extra: All writing contains 'voice'..." (p.3). This authorial voice is conditioned by how writers position themselves with respect to their argument and with respect to expected readers. In this case, not only do writers present ideational content or neutral facts, but they also convey their personal voice and build a relationship with readers (Charles, 2006a; Hyland, 2004b). Hence, writers exploit a diverse array of lexico-grammatical forms and structures to produce rhetorical impacts on readers (e.g., acknowledging possible positions, obscuring subjectivity, reducing criticism, expressing/removing personal stance, and heightening credibility) (Martin & White, 2005). In practice, focusing on voice issues, students as writers can develop a sense of empowerment and authorship. They can speak "their inner voices freely" (Buripakdi, 2011, p.25); they can express their personal views, authority, and presence (Ivaniĉ & Camps, 2001). Concomitantly, students perform a strategic manipulation of linguistic features to design their argument by anticipating and responding to the potential negation of audience (Hyland, 2004b). Based on this SFL perspective, therefore,

students can learn to deploy lexico-grammatical features as interpersonal and rhetorical resources as they attempt to convince readers to accept their position.

Because of their importance, researchers (e.g., Buripaki, 2010a, 2011; Hyland, 2002a, 2004b; Spigelman, 2001; Tang & John, 1999) have advocated the inclusion of interpersonal and rhetorical features (i.e., authorial identity or voices, reader-writer relationship) as essential agendas in academic L2 writing pedagogy. Ivaniĉ and Camps (2001, p.31) consider that "...issues of identity [are] so fundamental to writing that failure to address them from the outset can only hinder learning and, conversely, that setting these issues at the center of learning is likely to promote it". It is imperative that instructors empower students to express their internal voices liberally and raise their awareness of linguistic resources and rhetorical options. Students should be instructed to exploit interpersonal resources to project themselves in their text and create engagement with expected readers and thereby persuade them to accept their argument. Also, they should be assisted to understand how these interpersonal features influence interpersonal or rhetorical functions. When they have a better understanding of these rhetorical aspects, they can make more critical decisions and gain control over their writing (Tang & John, 1999; Hyland, 2002a, 2004b). This intersubjective emphasis can help students develop a good sense of authorship and readership which are dominant issues in any academic writing. In turn, they will make language choices appropriate for rhetorical purposes or meaning-driven functions.

One rhetorical option to enhance credibility and persuasiveness in academic writing is attribution to source ideas or external voices. Reference to external sources as a legitimate constituent of argumentation is a mandatory and authentic practice by

academic community members. This authenticity in academic writing is enhanced through reading-to-writing tasks in which students are required to attribute to other authors' propositions to support their argument (Hirvela & Du, 2013; Plakan & Gebril, 2012). This intertextual view is supported by SFL scholars. Martin and White (2005, p.92) state that writing is a social event; in some way, it "always" orients itself with prior work. Especially, in a social or soft discipline where its knowledge advances reiteratively, writers respond to and build on others' views to justify their position since there is a lack of consensus and verification, given nature of knowledge (e.g., value-laden, subjective) (Becher & Trowler, 2001). By drawing on external sources, writers can select what and how to present in a rhetorical way that is credible and persuasive, thus likely gaining acceptance from readers. They can choose whether and how to manifest themselves and convey their personal stance (e.g., attitude, feeling, opinion, commitment) and how to engage readers with their discourse by anticipating possible responses (Charles, 2006a; Hyland, 2008). As a result, they can develop a more critical evaluation and presentation of source ideas and a deeper process of thinking in their writing as they manage an interplay between their own voices and external voices.

Therefore, it is essential that students in English and Communication (EC), Faculty of Liberal Arts, Ubon Ratchathani University (UBU), should be oriented to academic writing that accentuates interpersonal semantics and rhetorical functions as they move from experience-oriented writing primarily for their own fulfillments to more persuasive academic writing for distributing their disciplinary knowledge to a wider audience. This current study argues that EC students need to learn to develop knowledge which is "appropriate both for their specific purposes and within their

disciplinary community." (Charles, 2006b, p.327). In their final year, they are required to conduct an independent study (IS) of their own interest covering a broad range of study areas, such as communication, linguistics/applied linguistics, literature, etc. Inevitably, they have to read a variety of materials (e.g., books, articles, statistics) related to their chosen topic in order to demonstrate their knowledge of literature, identify existing gaps, seek support, and respond to opposing views (Bloch, 2009). In most cases, students are motivated to integrate source voices into their own voice as a rhetorical strategy for backing up their argument; they put forward other people's views to argue their position in relation to those views. For their IS advisor or perhaps interested public, students have to present their own claims and reported claims in a way that they consider to be persuasive and credible to them. To achieve these qualities, students should learn a diverse array of lexico-grammatical features typical of written academic registers and understand how specific lexico-grammatical choices contribute to rhetorical functions in their argument.

It can be seen that academic writing entails and requires a broad range of knowledge; it is a thoughtful and time-consuming process involving felicitous lexico-grammatical options. Given this demand, it may not be sufficient for students to write and learn to write in the classroom. In fact, when they produce a synthesis academic text, they need considerable time in reading, planning, writing, and reviewing. These activities are usually seen as a recursive cognitive process that operates internally in a person's mind, rather than linear practical stages of completing a written product (Flower & Hayes, 1981). This notion suggests that each individual student tends to learn and write in their preferred way which can be accommodated through the adoption of technology. WordPress, a learning management system (LMS), is applied

as a web-based delivery system to present online lessons and practices and online learning platforms (e.g., Scott, 2012). When students work online on their own, they can use relevant resources available them to build up knowledge, generate ideas, and review their drafts. Driven by their needs, they can take control of what, when, where, and how to learn; they do not need to wait for in-class teaching where lessons are usually managed more or less similarly in terms of time, pace, and order. This process of learning appears to be congruent with constructivism that views learning as an internal act of self-construction of knowledge and co-construction of knowledge as learners encounter a multiplicity of perspectives and seek assistance from more advanced people (Driscoll, 2005; Kamii, 1984; Lantolf & Thorne, 2007). It is plausible that modern technology can be an excellent tool for fostering autonomous and collaborative learning.

However, just because we are challenged by emerging technologies to contemporize a curriculum and students are familiar with them, we can implement them perfunctorily in teaching and learning. Indeed, scholars note that technology use for education needs to take into account "pedagogical and instructional design aspects of instruction and learning" (Lim & Zhang, 2004, p.653). To address these aspects, instructional systems design (ISD) has been applied to underpin the designing and development of online learning environments (e.g., Tian & Suppasetseree, 2013; Suppasetseree, 2005). The concepts of ISD in technology use are useful and practical in that theoretical principles of learning and teaching are translated into optimal actions and working plans for instruction (Ertmer & Newby, 2013). Specifically, instructors as designers can identify necessary ISD activities, including formulating learning goals and objectives, devising teaching and learning plans, developing

support materials, and constructing evaluation tools (Smith & Ragan, 2005). These activities are performed in a systematic fashion that students can stay focused on various learning aspects during their process of learning, such as learning goals, performance outcomes, and support resources.

1.2 Statement of the Problem

It is generally recognized that writing competence in an EFL context is greatly determined by direct teaching methodologies employed in a classroom. However, many EFL writing classes tend to place much emphasis on product-based approaches in various aspects (e.g., cohesive devices, peer feedback, collaborative writing) that are primarily aimed at evaluating students' ability and knowledge of textual features (e.g., grammar, vocabulary, structure). Through this scholarship, students are often measured on their accurate choices of grammatical and lexical features and organization of their written essays. For example, some writing instructors from EFL contexts (e.g., China) tend to draw on a product-based approach although they believe they employ a process-based approach. Because they consider process-based instruction as a tedious and time-consuming process, especially in a large class size, they then shift a greater attention to students' written products (Bhowmik, 2009). In addition, other EFL writing teachers perceive that teaching writing is a form of linguistic practice that focuses on formal accuracy and grammatical correctness and consists primarily of reproducing language frames at a sentence level (e.g., substitutions, transformations, expansions, completions of linguistic patterns) (Fu & Matoush, 2012). As can be seen, product-based approaches to teaching writing have remained a common practice due partly to teaching constraints and teachers' principles.

Similarly, in many Thai EFL contexts, writing tends to be treated as a mere medium of reinforcing and mastering a set of language forms and structures. These linguistic features are often taught and learned independently of context. Puengpipattrakul (2014) states that most writing classes in Thailand have drawn on a traditional product-oriented approach that emphasizes structural linguistics or formal aspects of writing in isolation. In this orientation, writing is intended to assist students in improving their language accuracy of writing skills so that they can produce error-free sentences and well-formed texts with a special focus on grammatical and structural aspects. However, students are likely to structure their writing by stressing linguistic patterns at a level of individual clauses or sentences (Padgate, 2008; Piriyasilpa, 2009). Since writing is structurally driven, students often express their thoughts into the target language directly, rather than creating meaning to serve the real purposes of writing and fulfill the expectations of audience (Piriyasilpa, 2009). Therefore, writing is usually seen as an extension of grammar practice, form-focused activities which do not suffice to promote students to write and express for a real purpose.

Because of this heavy emphasis on language rules and patterns, many Thai tertiary students are not very successful to develop extended academic arguments that involve meaning-making, reasoning, and making rhetorical appeals in a credible fashion beyond a good knowledge of grammar. Kongpetch (2006) points out that in EFL writing courses, writing skills are taught with much attention to discrete grammatical and lexical items. In effect, students might be capable of forming accurate sentences and paragraphs, but when they are required to compose extended texts, they often fall shy of developing and sustaining complete arguments which are

credible and persuasive. This view is supported by Ka-kan-dee and Kaur (2014), who surveyed the difficulties of argumentative writing articulated by Thai EFL students. The survey showed that they experienced difficulties in argumentation, especially limited knowledge of elements and structure of arguments (e.g., forming a thesis, organizing ideas, providing evidence). Thus, the teaching of writing focusing on formal features of language may not provide sufficient knowledge about the development of arguments in academic discourses that attend to appeals to logos (rationality) and ethos (credibility).

To develop a credible academic argument, students need to integrate other authors' ideas from source texts. However, academic writing instruction in Thailand is likely to treat typical academic skills--synthesizing, paraphrasing, and summarizing-- as isolated activities regardless of context (e.g., McDonough, Crawford, & Vleeschauwer, 2014). These individual activities are usually intended to assess students' reading comprehension and paraphrasing ability, which is considered as a partial process of argumentation. Consequently, two essential aspects of academic arguments have been undervalued, which may impact students' perception of academic writing. First, students are not assisted much to understand when and why to incorporate external ideas to underpin their argument. Zhao and Hirvela (2015) found that undergraduates' understanding the functions of sources played a significant role in their successful synthesis writing because they knew when to draw on external views to designate a credible support for their own argument. Second, students have relatively limited opportunities to practice how to rhetorically present their own voices and external voices and position themselves and audience with respect to their argument in a meaningful context. It is argued that persuasive academic writing depends largely on how writers choose to present their self, readers,

and text (Hyland, 2000; Charles, 2006a). By focusing on isolated tasks, therefore, students may not be sufficiently promoted to produce academic writing for a specific communicative purpose.

In addition to the aforementioned problems, some problems in the context of the present study are also addressed. The current EC curriculum has privileged the teaching of academic writing to its undergraduate students, so that students can develop essential writing skills and knowledge required in their immediate and professional discourses. However, some teaching methods and practices need to be reconsidered and revitalized in order to further assist and prepare students to write more effectively and extend useful linguistic resources characteristic of academic registers. There are three areas of problems addressed based on my direct experience and mostly on the review of the writing courses conducted by Kongpetch and her colleagues in 2014. First, academic writing instruction is largely based on a product-oriented approach in which students write primarily for their own fulfillment and their writing products often serve as artifacts responded by instructors to measure students' demonstration of correct linguistic features. These features are usually treated as, what Ivaniĉ (2004, p.227) calls, "a unitary, context-free activity". In this way, it is assumed that language forms are applicable to all types of texts independent of context; students are not assisted to compose a certain text for a communicative intent which gives rise to the choices of language. Therefore, grammatical features seem to be considered as merely textual aspects of writing, as opposed to meaning-making resources for creating rhetorical functions for a certain purpose.

Second, given more emphasis on the linguistic and technical aspects of writing, students are not sufficiently encouraged to use language as a semantic resource for presenting and evaluating credible and persuasive writing. In this way, not only do

students convey their content, but they also need to learn how to present that content. That is, they can select from a diverse range of lexico-grammatical resources to rhetorically present their argument and themselves and involve expected readers by influencing their attitudes and expectations. However, academic writing involves teaching linguistic and technical skills, such as language features (e.g., passive voice, nominal groups, nominalization, complex sentence), citations, and paraphrasing. This teaching enterprise usually places emphasis on its impersonal or objective nature as characterized by some certain features, rather than how those academic features are employed to construe interpersonal semantics or accomplish rhetorical functions. For instance, general subjects (e.g., scientists, researchers, research) can rhetorically operate to obscure subjectivity and heighten credibility in an argument (Martin & White, 20005). These rhetorical functions raise students' awareness of and constrains their choices of lexico-grammar as they attempt to frame their argument responsive to readers' perspective.

Finally, student treatment is considered as one contributing factor responsible for either success or failure in language learning (e.g., Dueraman, 2012; Nicholls & Apiwattanakorn, 2015). At UBU, academic writing classes have remained highly authoritative where instructors are perceived as possessing knowledge, and students are accustomed to waiting for that knowledge to be disseminated to them by their instructors. Most classroom events are expository in nature; instructors deliver lectures to their students mostly in a one-way mode. This classroom-oriented practice may also be due to a lack of external support resources relevant and useful for students to solve their learning tasks regardless of time and place and self-regulate their process of writing and learning to write. Though some online materials are

suggested for students' further study by some instructors, they are not designed to deliberately engage students and respond to their specific needs of learning.

Grammar is an essential aspect of writing and learning to write, and it remains a paramount agenda in any writing courses, especially for Thai EFL students. However, good quality and persuasive writing is not solely determined by a sound knowledge of grammar as emphasized by many EFL writing classes. Instead, writing should be seen as a social and rhetorical activity in which lexico-grammatical choices are deliberately and contextually made for a communicative purpose and persuasive text. To address this writing aspect, a genre-based approach will be adopted as an instructional strategy, and technology will be applied as a delivery system of genre-based lessons to enrich students' learning experience. However, it is argued that effective web-based learning is determined by a principled design and thoughtful use of technology (Lim & Zhang, 2004; Samson, 2010; Warschauer, 2010). Therefore, this present study addresses these important issues by developing an instructional model that integrates a SFL genre-based approach as an instructional framework, WordPress as a content delivery tool, and constructivism as a theoretical framework. The integration of these components offers a coherent instructional model as a conceptual framework for developing online academic writing lessons to support and improve students' academic writing inside and outside the classroom.

1.3 Purposes of the Study

This research study is carried out to find solutions to the problems as discussed in the previous section. Based on these problems, the purposes of the study are fourfold:

1. To develop a WordPress-based Academic Writing Instructional Model for Thai EFL university students.
2. To determine the efficiency of WordPress-based Academic Writing lessons based on the 80/80 standard.
3. To investigate the effectiveness of WordPress-based Academic Writing lessons on the students' writing achievement.
4. To explore the levels of the students' satisfaction with WordPress-based Academic Writing lessons.

1.4 Research Questions

The main purpose of the study is to develop an instructional model for enhancing Thai undergraduate students' academic writing. Based on the purposes of the study, four research questions are posed as follows:

1. What are the elements and logical steps of developing a WordPress-based Academic Writing Instructional Model?
2. What is the efficiency of WordPress-based Academic Writing lessons based on the 80/80 standard?
3. What is the effectiveness of WordPress-based Academic Writing lessons on the students' writing achievement?
4. What are the levels of the students' satisfaction with WordPress-based Academic Writing lessons?

1.5 Expected Outcomes

Corresponding to the purposes of the study, the following results of this study are expected:

1. The WAW Instructional Model will be evaluated by three experts as an "appropriate" conceptual framework for developing online academic writing lessons. It consists of logical phases and steps that correspond to the purpose of the study.
2. The efficiency of the WAW lessons meets the 80/80 standard. The participants who perform well during the process of learning (e.g., exercises) will also perform well on their end-of-lesson tests.
3. The participants' posttest mean scores will be significantly higher than their pretest mean scores after the treatment. The participants can improve their academic writing abilities and become more aware of lexico-grammatical features and their functions.
4. The participants will express a high level of satisfaction with the WAW lessons. They will find them useful in helping improve their academic writing skills.

1.6 Significance of the Study

It is anticipated that this research study will contribute to the domains of pedagogy and research as follows:

First, this study takes a genre-based approach to designing academic writing lessons that view writing as a meaning-making activity in context beyond a set of context-absent linguistic skills as prioritized by many Thai writing classrooms

(Lerdpreedakorn, 2010; Padgate, 2008; Piriyasilpa, 2009; Puengpipattrakul, 2014). Through these genre-based lessons, students will be encouraged to use lexico-grammatical features as meaning-making resources to create meanings or perform rhetorical functions to serve a particular purpose for writing. It is expected that students can develop academic writing skills necessary in their immediate and professional contexts. They will be assisted to learn academic skills and lexico-grammatical features typical of written academic registers to develop persuasive academic texts. Rhetorically, they can exploit linguistic features and structures to present their academic argument that considers their self, purpose, subject, and readers. This rhetorical focus will enable students to develop a sense of authorship and readership and understand the impacts of lexico-grammatical choices on readers.

Second, more higher education institutions are beginning to realize the importance and potential of educational technologies in language teaching and learning. However, they tend to apply most of these technologies in the way that does not sufficiently address theories of teaching and learning and ISD principles (Richey, Klein, & Tracey, 2011; Tennyson, 2010). It is therefore hoped that this study contributes to a body of literature regarding the application of educational technology in academic L2 writing from theoretical and practical viewpoints. This knowledge base will serve as a reference for researchers and teaching professionals who work on the same concept in other EFL contexts.

Third, this study can provide guidelines for designing and developing a contemporary curriculum that incorporates technology as an additional element at UBU and also in other contexts in Thailand. Today, it is undeniable that technology has become an integral part of our modern society, changing the ways of teaching and

learning (Warschauer, 2010; Schneider, 2004). However, in Thailand and at UBU in particular, English teaching and learning is highly classroom-oriented; learning is mostly determined and dominated by instructors. By drawing on this study's findings, curriculum stakeholders (e.g., instructors, course designers, administrators) may consider integrating technology elements into their current curricula to revitalize traditional teaching and learning practices and to compensate for classroom constraints (e.g., class times, class sizes, peer dominance, instructor control, class inequality).

Finally, this study may enhance students' empowered and autonomous learning. In traditional classrooms, most choices are usually made and learning materials are distributed by instructors. In today's digital era, however, language teaching and learning is more convenient and flexible as a massive amount of resources are available online (Chen, 2008; Lian, 2011). Therefore, this study will allow students more choices and flexibility in taking learning initiatives on their own and determining their process of learning. Plus, they have extended opportunities to work either individually or collaboratively regardless of time and space. This digital learning landscape will promote students' sense of empowerment and autonomy which are powerful constructs in learning.

1.7 Definitions of the Key Terms

There are several key terms frequently mentioned in this study. They are operationally defined as follows:

1. **WordPress-based Academic Writing (WAW) Instructional Model** is a systematic visual representation that specifies phases and steps for integrating three

proposed aspects: a genre-based approach as an instructional framework, WordPress as a delivery system of online learning content, and constructivism as a theoretical underpinning. Informed by three ISD models: ADDIE, KEMP, and SREO, it serves as a conceptual framework for developing web-based academic writing lessons drawing on a genre-based approach.

2. **WordPress-based Academic Writing (WAW) Lessons** are learning contents of genre-based academic writing lessons in Academic Writing, specifically designed for English-major students to develop their awareness and understanding of lexico-grammatical choices and their rhetorical effects on readers. Delivered through WordPress, they contain four lessons: Structure of Discussion Genre, Language Choices, Academic Arguments, and Use of Source Texts. In each lesson, there are reinforcement exercises and end-of-lesson tests that enable students to enhance their understanding and assess their overall knowledge of focused topics.

3. **Academic Writing** refers to argumentative writing through a discussion essay or genre (Derewianka, 2003; Knapp & Watkins, 2005; Martin, 2009) that serves a broad context with a social purpose for students to learn essential academic writing skills and knowledge, such as generic structures of a discussion genre, functions of each paragraph, lexico-grammatical features typical of a discussion genre and academic written register, elements and functions of argument (e.g., claim, grounds), forms of citations, reporting verbs, tenses of reporting verbs, paraphrasing, and quotation.

4. **Rhetorical Functions** are primary driving forces in the choices of language made by writers to make their argument or position seem to be more persuasive. They are expressed in relation to a rhetorical situation that consists of writer, audience,

purpose, subject, and genre (Matsuda, 2007; Wilhoit, 2009). This rhetorical situation, functioning as a context of writing, influences and constrains the choices of lexico-grammatical features and structures. In this study, such rhetorical functions include enacting interaction with readers, acknowledging possible views, revealing and masking personal voice or subjectivity, reducing criticism or objection, defending a position against criticism, expressing and removing personal stance, emphasizing and obscuring responsibility, increasing argument credibility, and enhancing readers' understanding.

5. **80/80 Standard** is a criterion applied to evaluate the efficiency of the WAW lessons. This efficiency is statistically measured based on the E_1/E_2 formula proposed by Brahmawong (2013). E_1 is an efficiency index for learning process that is calculated from exercise scores while E_2 is an efficiency index for learning product that is calculated from end-of-lesson scores. The E_1/E_2 formula will be explained in more details in Chapter 3.

1.8 Conceptual Framework of the Study

The conceptual framework in Figure 1.1 illustrates the development process of the WAW Instructional Model which involves two main phases: development phase and research phase.

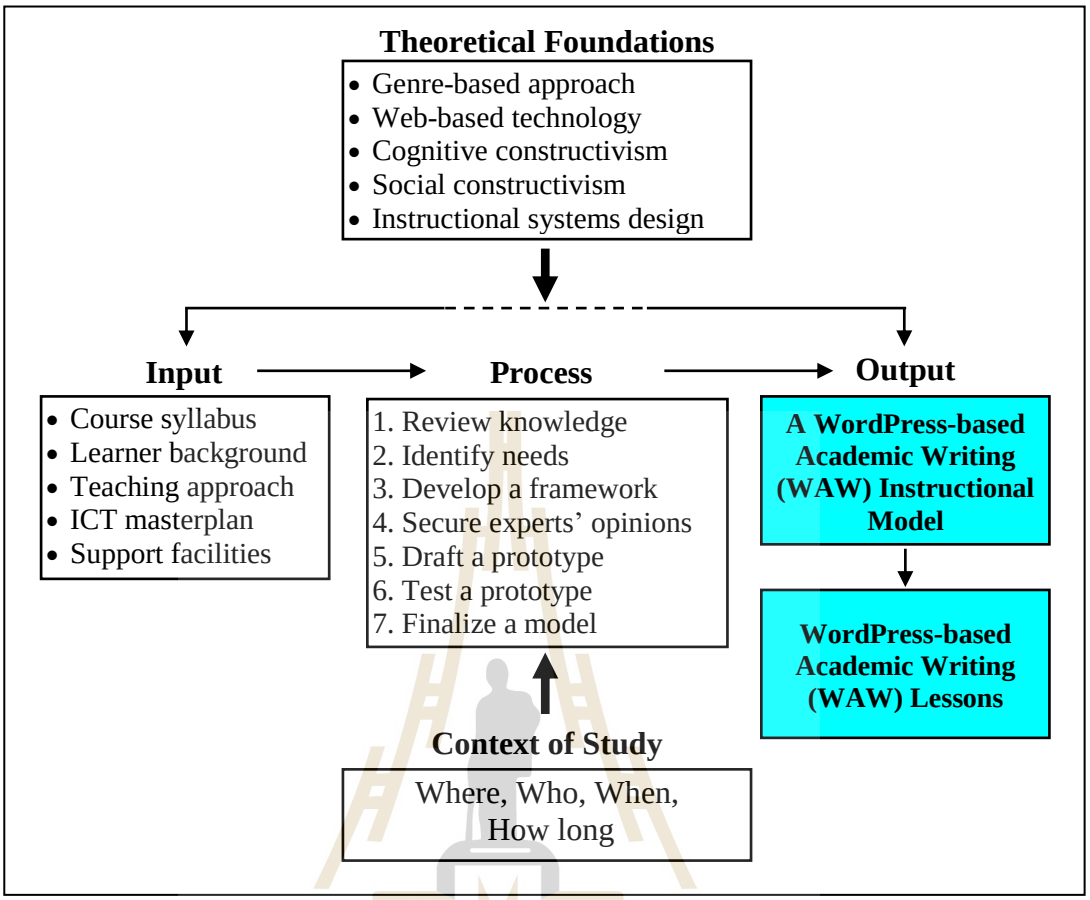


Figure 1.1 Conceptual Framework of the Research Study

The development phase intends to develop the WAW Instructional Model as a conceptual framework for producing the WAW lessons. In this phase, interplaying variables in the present context are identified, including course syllabus, learner background, teaching approach, ICT masterplan, and support facilities. These identified variables can serve as useful input data to be analyzed and processed in seven steps to develop the output in response to the context. During the development process, it is important that theoretical concepts need to be translated to underpin the production of online learning materials. The theoretical foundations include a genre-based approach to writing, web-based technology, cognitive constructivism, social

constructivism, and instructional systems design (ISD). The outputs of this development phase are the WAW Instructional Model and the WAW lessons devised under the conceptual framework. The WAW lessons were then trailled for 20 hours with 31 English-major students through three-step developmental testing to determine the efficiency.

The research phase intends to examine the effectiveness of the WAW lessons derived and revised from the development phase on the students' writing abilities. These research activities are important because they are directly related to the issues of reliability and validity. The research phase encompasses considering various variables, including research context (where), participants (who), research phases (when), and timeframes (how long). In the research phase, the WAW lessons were fully implemented for 20 hours with 33 English-major students who enrolled for Academic Writing by Department of Western Languages and Literature, UBU. Their writing performances were measured through writing pretest and posttest, and also their levels of satisfaction were investigated through self-reported questionnaires and semi-structured interviews.

1.9 Structure of the Thesis

Chapter 1 presents the rationale of the study, statement of the problem, the purposes of conducting this research project, the research questions, the expected outcomes, the significance of the study, the definitions of the key terms, and the conceptual framework of the study.

Chapter 2 undertakes a comprehensive review of five main areas: writing, theoretical framework, web-based instruction (WBI), instructional systems design

(ISD), and relevant studies. These reviewed issues constitute a theoretical foundation of the present study.

Chapter 3 describes and explains the research methodology and approaches consisting of research design, research participants, research instruments, data collection, and data analysis.

Chapter 4 reports and discusses the quantitative and qualitative analysis of the research results obtained from lesson efficiency testing, writing pretest and posttest, satisfaction questionnaires, and semi-structured interviews.

Chapter 5 describes the elements of the WAW Instructional Model and the major components of the WAW lessons and suggests some guidelines on the implementation of the WAW Instructional Model.

Chapter 6 summarizes the major results in response to the research questions, provides pedagogical implications, and addresses limitations and recommendations for further studies.

CHAPTER 2

LITERATURE REVIEW

This chapter undertakes a thorough review of the key concepts that provide the theoretical foundations for the present study. The content in this chapter is divided into five main parts: writing, theoretical framework, web-based instruction (WBI), instructional systems design (ISD), and relevant studies.

2.1 Writing

This section presents the nature of L2 writing, a genre-based approach to academic writing, academic writing as argumentation, and discourse synthesis in academic writing.

2.1.1 Nature of L2 Writing

Writing is a challenging task to teach and learn. While it is challenging to provide writing instruction in L1 contexts, it is even so in L2 contexts where English is mainly taught in educational institutions (Richards & Renandya, 2002). Writing is difficult for both native and non-native speakers because dealing effectively with writing requires a multiplicity of knowledge (Tribble, 2001). Hyland (2003) elaborates that effective writers have to acknowledge these various types of knowledge: content, system, process, genre, and context. Judging from these required aspects, writing is fundamentally different from speaking in that it is hardly impossible to acquire writing naturally (Halliday, 1989). That is, only can writing be mastered through a range of

direct teaching methods (Knapp & Watkins, 2005) and considerable experience (Grabe & Kaplan, 1996). Therefore, it is imperative to understand the nature of L2 writing so that suitable approaches to teaching and assessment can be adopted to deal with it effectively and fairly in response to EFL writers' special needs. Widely discussed in the literature, the nature of L2 writing is salient in composing processes, textual features (rhetorical and linguistic), and socio-cultural orientations (Bhowmik, 2009; Grabe & Kaplan, 1996; Silva, 1993, 2006). These multi-dimensional aspects of L2 writing should receive attention and awareness across the board from L2 writing instructors.

Writing is a mental activity, yet it is constrained by social variables. This view of writing contrasts a process of L2 writing with that of its L1 counterpart. The variation is due to different cultures, rhetorical traditions, and linguistic backgrounds (Silva, 1997). Basically, there are three composing processes of planning, translating (transcribing), and reviewing (Silva, 1993; Flower & Hayes, 1981). They are seen as recursive cognitive processes (psycholinguistic) that operate internally in a person's mind, rather than linear practical stages of completing written products. The cognitive model of writing intends to look at "the inner process of the person [as a writer] producing it" (Flower & Hayes, 1981, p.367). Practically, it is thus essential that L2 writing instructors should be sensitive to their students' mental process and the practical process borrowed from L1 theories (Stotsky, 1990). Since writing is an internally-processing activity, L2 writing instructors should devote more attention to writing processes to promote students' deep thinking and learning.

It is generally recognized that L2 writers characterize the certain ways they construct and organize their concepts. This phenomenon can be explained by the notion of contrastive rhetoric that rhetoric, as a primary indicator of textual organization, is

determined by cultural and linguistic resources (Silva, 2006). Bhowmik (2009) further explains that culture-specific variables have a significant influence on thought processes which in turn possibly manifest through textual patterns of writing. The idea of cultural influences on rhetoric has received a greater recognition in the domain of L2 writing pedagogy and research since the publication of Kaplan's (1966) study of L2 student essays. Kaplan found that students from diverse cultures expressed and arranged their ideas in various ways (Hyland, 2003). Therefore, it is imperative to recognize contextual and cultural factors in the study of L2 writing to address EFL students' specific needs.

Linguistically, it is evident that L2 writers have a lower level of competence than their L1 counterparts. Kaweera (2013) states that one of many other contributing factors is interlingual interference, causing serious lexical and linguistic errors in L2 writing. This poor level of proficiency is not surprising since L1 and L2 writers have a differing level of linguistic and lexical knowledge (Leki, 1990). For instance, in a meta-analysis of 72 research reports between L1 and L2 domains, Silva (1993) found that holistically L2 writers' texts were less effective. L2 writers made more linguistic errors and a limited use of lexical items, such as simple and incorrect sentences, shorter words, less specific words, and less lexical variety. This evidence is supported by Chuenchaichon's (2013) review of L2 writing studies conducted in Thai EFL context. Chuenchaichon reported that Thai EFL students still struggle with textual features, including vocabulary, grammar, and syntax. Undoubtedly, linguistic knowledge has become a major focus in L2 writing pedagogy and research as linguistic accuracy is an essential ingredient of good quality writing.

Recently, L2 writing pedagogy has shifted its focus from a cognitive process to a socio-cultural paradigm. This relatively new tradition calls for an exploration of L2 writing studies in relation to context and culture as extensions, rather than replacement, of prior orientations and traditions (e.g., cognitive process). In this sense, writing is viewed as a socially constructed act; it needs to be studied beyond textual features in respect with a broad spectrum of contexts where it is produced (Leki, Cumming, & Silva, 2008). The idea of writing in a social context is advocated by a genre-based approach that emphasizes a context of writing. Generally, each context consists of situation, purpose, writer's position, audience, and text (genre) (Matsuda, 2007). These contextual elements co-function in immediate writing contexts and require special concurrent consideration in composition studies. Therefore, a genre-based approach is beneficial for EFL students in that writing is situated in realistic contexts where they use language meaningfully.

In addition to contextual variables, L2 writing is greatly influenced by a community of social practices if it is intended for a wider group of readers, especially people in a discourse community. This constellation of social practices constitutes what it is called "a disciplinary culture" (see e.g., Atkinson, 2004; Connor, 2004) which is a wider socio-cultural context of writing (Ivaniĉ, 2004). In this view, writing is a socio-cognitively shaped process during which meanings are negotiated between writer and audience, as noted by Connor (2004, p.293):

> The expectations and norms of discourse communities or communities of practice (cultural and disciplinary), of course, may shape these situational expectations and practices. Social construction of meaning as dynamic, socio-cognitive activities is a term used to describe this approach to texts. Instead of analyzing what texts mean, we want to understand how they construct meaning.

Therefore, it is necessary that L2 writing studies should expose students to social practices and reconsider writing classroom practices. Xing, Wang, and Spencer (2008, p.73) claims that "[L2 writing] is not an isolated classroom activity, but a social and cultural experience". This socio-cultural orientation to L2 writing is captivating because it involves personal and social issues, including affiliation and recognition in a respective discourse community (Hyland, 2002b), authorial identity (Hyland, 2002a; Xing et al., 2008), expectations of a discourse community (Ramanathan & Kaplan, 2000), and issues of power (Ivaniĉ, 2004). Crucial to L1 and L2 writing alike, these issues should be raised in academic writing to benefit culturally disadvantaged students and increase their awareness of socio-cultural influences on writing.

2.1.2 Genre-based Approach to Academic Writing

Systemic functional linguistics (SFL) (Halliday, 1994; Halliday & Hasan, 1989) advocated by James Martin and others (e.g., Derewianka, 2003; Hammond et al., 1992; Hardy & Klarwein, 1990; Knapp & Watkins, 1994, 2005; Martin, 1989; Martin & Rothery, 1993) has played an influential role in L2 writing classes. This theory of language has grown out of participatory efforts in research and pedagogy into analyzing and identifying elemental genres (or school genres) that are practical and useful in the classroom (Cope, Kalantzis, Kress, & Martin, 1993). These principled efforts have been made in a strong belief that an understanding of elemental genres will assimilate culturally disadvantaged students into academic and professional settings (Johns, 2003). The central notion of SFL genres is that language is functional; language enables us to perform things. This functional approach to language focuses on meaning and regards lexico-grammar (or grammar in short) as a resource for making meaning. This meaning needs to be construed and interpreted in relation to a social context

(Derewianka, 1990; Hammond et al., 1992; Martin, 1993; Martin & Rothery, 1993). Essentially, a SFL genre-based approach emphasizes language in context and grammar as a meaning-making resource, thus developing students' awareness and understanding of linguistic features and their functions.

From this SFL perspective, genre is recognized as a socially-determined process articulated by individuals to serve social purposes. Martin and Rose (2003, p.7) defines genre as "a staged, goal-oriented social process". They elaborate that genres are a social process because they are socially shaped as writers attempt to consciously choose language features to construct a written text in response to the expectations of audience. Genres are goal-oriented because they are used to get things done. They are developed in unfolding stages to achieve a specific purpose (Martin, 2009). Genres are staged because they use generic structures. In fact, it takes more than one stage to work through a genre. Each stage is an obligatory part that performs its own function. Together, they work toward its overall social purpose (Derewianka, 2003). It is acknowledged that a social purpose is one important aspect that appears in most definitions of genres proposed by respected genre scholars (e.g., Martin & Rose, 2003; Paltridge, 2006; Swales, 1990, 2001) since it is a primary driving force that influences the choices of meanings and wordings--lexico-grammar.

The choices of lexico-grammatical features in a specific genre are constrained by what is called "register", a contextual and semantic context (Halliday & Hasan, 1989). This context of situation is where a created text is language in use to represent a network of meanings, as illustrated in Figure 2.1. It consists of three variables: field (What a text is about), tenor (Who is involved–relationship between a writer and reader), and mode (How a text is being organized). These contextual variables are integral to the making

of three kinds of meanings or macro-functions: ideational meaning as a need to interpret and represent experience, interpersonal meaning as a need to enact interaction with readers, and textual meaning as a need to organize content (Halliday & Matthiessen, 2004). It can be seen that the strata of context, semantics, and grammar function in a dialectical way. In other words, Hasan (2009, p.170) points out that "looking from above, contextual choices ACTIVATE semantic choices activate [grammatical] ones; looking from below, [grammatical] choices CONSTRUE semantic choices construe contextual ones." This realization is useful for students' learning to write as they are encouraged to construct meaning through linguistic features and structures in relation to a context.

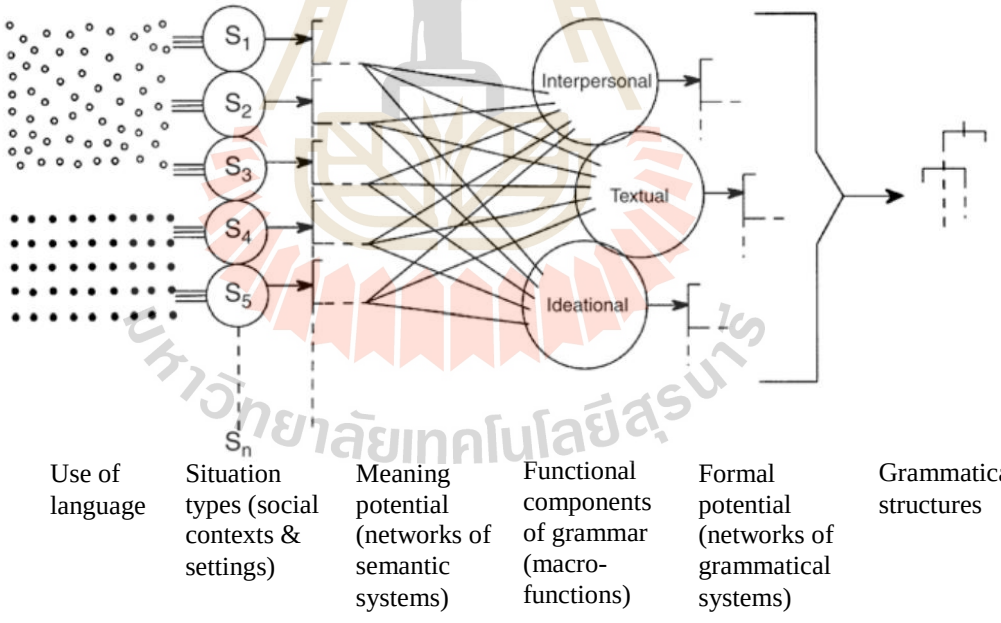


Figure 2.1 Stratification of Language (Hasan, 2009, p.173)

The concepts of SFL have contributed to L2 writing, especially academic writing which foregrounds three strands of meanings or macro-functions: ideational, interpersonal, and textual. These tripartite functions are realized through a wide array

of lexico-grammatical choices into a complex of system networks as represented by a written text. The ideational function, dealing with content and ideas (experiential meaning) and relationship between ideas (logical meaning), is realized by transitivity, lexical choice, verb type, verb form or tense, human agency, reference, projection (quoting and reporting), and expansion (Bloor & Bloor, 1995; Halliday & Matthiessen, 2004; Hasan, 2009; Ivanič & Camps, 2001; Martin & White, 2005). The interpersonal function, encompassing interaction or relationship with readers and expression of personal stance (e.g., feelings, attitudes, judgment) and voice (e.g., authoritativeness, authorial presence), is realized by a wide range of linguistic resources, such as modality, qualification, self-reference, human agency, inanimate/general subjects, anticipatory 'it', reporting verbs, and citation forms (Gardner, 2012; Halliday & Hasan, 1985; Hyland, 2004b, 2008; Yasuda, 2014). The textual function, concerned with an organization of a cohesive and coherent text; that is, organizing ideational and interpersonal meanings as a discourse in context, is realized by grammatical choices, such as theme/rheme, reference, cohesive devices, lexical choice, active and passive structure, and nominalization (Gardner, 2012; Halliday & Hasan, 1985; Martin, 2009; Knapp & Watkins, 2005). It should be noted that grammatical instances can construe three types of meaning simultaneously. For example, passive structures can be deployed to background authorial agency and subjective voice, dominating features of academic language.

One key interpersonal variable that characterizes academic language is that of tenor – a relationship between writer and reader. In academic argument, a writer-reader interaction is usually not interpersonally charged and emotionally motivated as being found typical of interactional conversation. In other words, academic argument is

developed to present ideational content to non-interacting audience who is not simultaneously present (Schleppegrell, 2001). Even though there is no possibility of spontaneous interaction and reciprocal response, academic writers perceive that readers are present and projected in their text. They are aware that there is a discursive space for negotiation influenced by readers' shared beliefs and assumptions and their own perspective and authoritativeness (Sanderson, 2008). This putative relationship inevitably conditions writers' language choices of lexical and grammatical features functional for construing meanings valued in academic discourse. The salient features of academic argument include lexical density, nominalization, elaborated nominal groups, objective or neutral evaluation, moderation or qualification, thematic progression, explicit logical relations, and rhetorical operation (Martin & White, 2005; Schleppegrell, 2001). These certain features configure academic language that functions to make logical and credible appeals to readers, seeking to persuade them to change their viewpoint and accepts the proposition.

2.1.3 Academic Writing as Argumentation

Arguments are produced for a variety of purposes. Developing an argument (or argumentation) is employed to handle a variety of aspects of educational knowledge and successful participation in academic and professional discourses (Knapp & Watkins, 2005). The concept of argument varies from discipline to discipline. However, this section is devoted to reviewing academic arguments. Wingate (2012, p.146) states that argument is defined as either a single claim or a whole text. As a single claim, argument is viewed as "a proposition [that] is supported by grounds and warrants". In this view, argument is equivalent to a rhetorical unit of a complete text--paragraph which contributes to a primary proposition or thesis statement. As a whole text,

Andrews (1995, p. 3) defines argument as “a process of argumentation, a connected series of statements [claims] intended to establish a position and implying response to another (or more than one) position”. The definitions demonstrate that argument is regarded as a product and process that involves developing and maintaining a position on a topic through a logically-connected series of claims and justifying such each claim with grounds (i.e., reasons, evidence) and warrants. Meanwhile, argument writers anticipate and respond to readers’ alternative positions in a way that persuades them to accept their position or stance as reasonable and credible.

The argumentation of a position contains a primary goal of persuasion, with an attempt to convince readers to adopt a certain viewpoint or accept that position. To achieve this persuasive goal, writers can incorporate three rhetorical appeals into argumentation: logos, pathos, and ethos as originally proposed by Aristotle, a Greek philosopher. These appeals are looked at from three contextual aspects: argument, reader, and writer respectively (Seyler, 2009). In academic argument, logos is appeal to logic or reason; compelling arguments require an explanation of relationship between a claim and its grounds. Pathos is appeal to values and emotions of readers; understanding this appeal can determine what claims and evidence should be included. Ethos is appeal to authorial credibility and authority, placing emphasis on field knowledge and disciplinary practices (Raimes & Jerskey, 2010; Wilhoit, 2009, 2010). In academic writing, three modes of persuasion, especially logos and ethos, can be employed as rhetorical functions for credible and persuasive arguments that take into account a context of situation (e.g., argument, reader, writer) as stressed in SFL theory.

To present an effective and persuasive argument in a coherent manner, Wilhoit (2009) simplified an original model of argumentation developed by British philosopher

Stephen Toulmin. Specifically intended for academic arguments, this simplified model consists of five common elements, including claim, qualifier, grounds, explanation, and rebuttal. Claim is an assertion made in an argument which is usually stated initially as a major point; a central claim is made up of minor claims. In certain cases, most claims need to be qualified or limited precisely, so that they are more arguable. Each claim is substantiated with grounds (e.g., reasons and evidence) which render an argument credible and persuasive. Explanation is a line of reasoning or a set of assumptions that connects a claim to its grounds. That is, writers are obliged to explain how grounds support, justify, or lead to a claim. Furthermore, a rebuttal might be addressed to improve credibility as it shows thoroughness and open-mindedness (Andrews, 2010; Seyler, 2009; Wilhoit, 2009). However, while this modified model is not fully applicable to a large-scale structure of argument (Wingate, 2010), it can be deployed as a support tool for learning to develop a coherent and effective argument, especially at a paragraph level. This rhetorical unit is vitally important for novice writers' academic writing as they are apprenticed to write more challenging academic arguments.

These elements are also found in academic writing although not all of them are present. Typically, academic paragraph is composed of three major elements, serving as a rhetorical constituent of a complete text and contributing to that text's overall purpose. The first element "claim", or topic sentence, usually carries one major point and covers other contents in the paragraph. In one's own voice, most claims are usually stated at the beginning through one or more sentences. Harvey (2008) argues that academic writers should begin a paragraph with a sentence in their own words, whether they are summarizing, analyzing, or critiquing source materials. This inclusion can offer clarity to readers and help them understand writers' viewpoint or position. The

second element “evidence” is advanced in support of a claim, providing justification for arguments and positions. It is generally accepted that academic written discourse makes a rhetorical appeal to credibility (Wilhoit, 2009), which is established through the attribution of other authors’ works (Charles, 2006a; Hyland, 1999; Wilhoit, 2010; Wolfe, 2011). As a matter of fact, Hyland (2000) asserts that source citation is central to credible and persuasive arguments. The last element “analysis” is a concluding observation writers make in relation to a claim and its evidence. Harvey (2008) suggests that academic writers should end a paragraph with their own discussion or analysis. The analysis can be performed in forms of explanation, interpretation, implication, generalization, evaluation, limitation, and prediction (Swales & Feak, 2012; Wilhoit, 2009). It should be noted that there are variations across these elements that may be attributed to paragraph length, rhetorical structures, and rhetorical functions.

2.1.4 Discourse Synthesis in Academic Writing

Synthesizing sources in academic writing is conceptualized as a constructive or meaning-making process, which is consistent with a notion of SFL. Reference to other sources as a means of argumentation entails “discourse synthesis, a process in which readers (writers) read multiple texts on a topic and synthesize them” (Spivey & King, 1989, p.11). This process leads writers to take on a dual role of reader and writer. Spivey (1990, p.256) explains that “[w]riters construct meaning when they compose texts, and readers construct meaning when they understand and interpret texts”. In this constructivist model, writers perform meaning construction and textual transformation through three operations: organizing, selecting, and connecting. They organize source content and construct meaning in their own text, select relevant content from that source text, and connect that selected content with their own content generated from their

existing knowledge (Spivey, 1989, 1990). Through a SFL lens, similarly, writers construct ideational meaning in source texts and select only relevant and important content to fulfill rhetorical purposes, and then they re-express this ideational meaning in their created text through different grammatical forms. The choices of linguistic forms are determined by a context of writing (e.g., readers, purpose), a process during which interpersonal meaning is negotiated with expected readers. To configure these two meanings, writers build textual meaning as they attempt to execute discourse synthesis to establish cohesiveness and coherence.

The notion of discourse synthesis addresses the common nature of academic arguments valued by community members. Novice writers (students) must learn to develop integrated arguments and citation knowledge to align themselves with social practices. Pecorari and Shaw (2012) state that citation is a prominent nature of authentic scholarly activities; academic writers advance new arguments drawing on other existing works. Given its authenticity, attribution to sources enables writers to contextualize their current works and justify their arguments or positions, thus increasing credibility by showing an allegiance to a certain viewpoint (Dontcheva-Navratilova, 2008). Likewise, Hyland (2000) argues that reference to other sources as a summary from one source or generalization from multiple sources is most effective for achieving persuasion. It is particularly persuasive in that writers choose sources to reflect a shared view with readers. That is, they can manipulate those sources which they attribute to their arguments by either emphasizing or avoiding their own responsibility (Hunston, 2000) as they have to anticipate and respond to the potential rejection of their arguments. It can be seen that synthesis writing is oriented to authenticity, credibility,

and persuasion. These key features of source-based arguments are vitally important for student-writers if they wish to interact with wider academic contexts.

Despite its importance and presence in academic contexts, synthesis writing is a challenging genre for most writers, especially L2 writers. Studies have revealed that paraphrasing, a common strategy for synthesizing sources, poses difficulty for L2 writers due to language proficiency (Keck, 2006), vocabulary knowledge (Plakans, 2009a), reading comprehension (Plakans, 2009b), understanding of synthesis and its rhetorical functions (Zhao & Hirvela, 2015), and conception of plagiarism (Shi, 2006). It is even more difficult for them as paraphrasing involves critical thinking (e.g., interpretation, reasoning). Yamada (2003) argues that during a paraphrasing process writers can make inferences to produce non-plagiarized work: deductive (drawing a conclusion based on a series of premises) and analogical (making a comparison between one domain and another). In this sense, they may think beyond what they see and include ideas that are not explicitly stated. Furthermore, writers face difficulty in connecting source ideas with their own ones since they have to generate a new discourse or rhetorical structure in their own perspective. Numrich and Kennedy (2016) state that synthesis writing requires a new representation of information--categories, relations, and patterns--that reflects writers' original viewpoint. This evidence indicates that writing from sources places considerable demands on writers as they have to deal with a broad range of skills, such as reading, writing, and reasoning.

One challenging, yet necessary aspect of source-based arguments is that writers not only attribute ideational content to other sources, they also use language to represent their self (i.e., voice, stance) and create involvement with readers. In academic writing, integrating source materials into an argument requires a wide variety of linguistic realizations, such as reporting verbs (Bloch, 2010; Dontcheva-Navratilova, 2008;

Hyland, 2000; Swales, 2001), tenses (Caplan, 2012; Malcolm, 1987), and citation forms (Swales, 2001; Charles, 2006a). The choices of these features can convey writers' evaluative stance as it enables them to display "not only *what they know*, but also *what they think*" (Swales & Feak, 2012, p.156). In other words, writers can indicate if they think a cited claim is either a fact , opinion, or belief, thus revealing their attitudes, confidence, responsibility, authority, and solidarity (Hyland, 2002b; Martin & White, 2005; Swales & Feak, 2012). In fact, how writers present source ideas depends on their careful scrutiny of readers' expectations; they can choose linguistic resources to frame their arguments to convince those readers. Charles (2006a) and Hyland (2000, 2004b) assert that reader-oriented writing is constructed to secure rhetorical purposes, thus persuading readers to accept writers' perspective. While it is challenging for writers to manipulate language to control their level of personality and project readers in their argument, it is imperative for them to understand how lexico-grammatical choices can influence their credible ethos and rhetorical functions when they work on other authors' information.

The realization of rhetorical functions is not only through choices of lexical and grammatical features, but also use of citations in argumentation. There are many rhetorical functions citations perform in academic discourse. For example, Petric (2007) studied the rhetorical functions of citations in high- and low-rated master's theses and found that citations serve these rhetorical functions in order of frequency: attribution (knowledge display), exemplification, further reference, statement of use, application, evaluation, establishing links between sources, and comparison of writer's own findings or interpretation with other sources. These categories are not exhaustive as most of them have more than one rhetorical function and are generally labeled as

attributions (e.g., Hyland, 2000). Essentially, however, academic writers attribute to external sources to justify their position as a rhetorical strategy of developing credible and persuasive argument.

2.2 Theoretical Framework

This section reviews the theoretical concepts that underpin the development of teaching and learning activities in the present study.

2.2.1 Constructivism

The theoretical concepts in the present study are grounded in constructivism separated into two orientations: cognitive constructivism by Jean Piaget (1896-1980) and social constructivism by Lev Vygotsky (1896-1934). They are implemented to underpin the design of teaching and learning activities.

2.2.1.1 Cognitive Constructivism

Cognitive constructivism has been influenced by the studies of Piaget since the 1980s. Other advocates, including Bruner, Ausubel, and von Glasersfeld, are instrumental in the theoretical development of cognitive constructivism. Cognitive constructivists argue that knowledge is internally constructed, not transmitted directly and passively from person to person, through interactions with the environment (Liu & Matthews, 2005). In this notion, learners have a mindful and active role in a process of knowledge construction, operating internally in a mindful way to make sense of surroundings and create personal understanding drawing on their existing knowledge. Driscoll (2005) points out that learners self-construct knowledge in a continuous way so as to acquire such knowledge. In other words, knowledge is not somewhere completely external to learners, awaiting to be discovered. Rather, knowledge is within

learners who self-create and recreate it as they develop and transact with the world. This cognitive view of knowledge is rooted in the constructivist movement of cognitive psychology. Rovai (2004) further states that as individuals become mature, gradually they build their personal understanding of the world through experience, interpretation, and maturation. From this constructivist perspective, learners are therefore viewed as the active processor of new ideas and concepts, as sharply contrasted to an objectivist viewpoint in which learners are seen as a passive recipient of information.

Smith and Ragan (1999) identify the key assumptions pertaining to the constructivist orientation to learning as follows: (a) knowledge is acquired from experience, (b) learning takes place as knowledge is personally interpreted, and (c) learning is an active process in which making meaning is experience-based. In order to allow these functions to take place, schemata must be available to human. Schema is a very important construct in Piaget's theory. It can be regarded as a crucial element in our cognitive structure. The availability of schemata determines how we respond to physical environments, making it manifest either overtly or covertly. The latter is roughly equated with our thinking (Olson & Hergenhahn, 2009). Richey et al. (2011) state that existing in a long-term run, schema refers to how knowledge is structured in our memory. The notion of mental schema is an integral part of understanding cognitive theory. Specific parts of memory are attended to and activated through the use of schemata that facilitate a magnitude of learning acts, such as comprehension, selective attention, information storage, and retrieval of new knowledge. These learning acts are internally processed, restructured, and constructed in a mindful and active way.

It is very obvious that cognitive constructivism stresses individuals' psychological mechanisms as they experience new environments (e.g., people,

concepts, objects, information) to develop new understanding or knowledge. Three critical processes can be explained to understand these psychological operations relative to cognitive development (see Driscoll, 2005; Olson & Hergenhahn, 2013; Williams & Burden, 1997). This explanation begins with individuals' cognitive structures or schema. Each individual has different cognitive structures which are critical to their building of personal understanding. The extent to which they understand incoming information depends on their available schema which refers to "a general potential to perform a class of behaviors" (Olson & Hergenhahn, 2013, p.248). This schema will be applied as they confront new experiences. This initial process is called "assimilation", a process during which individuals perceive the environment, causing an imbalance between their cognitive structure and the environment. Driscoll (2005) explains that individuals tend to apply their cognitive structure to assimilate new information into their cognitive structure. In their active mind, incoming information is perceived and modified, so that this information can be fit in their cognitive structures (Williams & Burden, 1997). However, learning does not occur yet. Instead, individuals can develop intellectual growth when they go through a process called "accommodation". During this process, individuals' cognitive structure is modified (i.e., reorganized, restructured) to mindfully consider incoming information (Olson & Hergenhahn, 2013). These two processes make a mutual contribution to learning as a result of a balance between what individuals already know (available schema) and what they are confronting (incoming information). This balance-restoring process is called "equilibration" (Williams & Burden, 1997). Equilibration is utilized to explain steady intellectual growth observed in individuals through their performance and performance potentials (Driscoll, 2005; Olson & Hergenhahn, 2013). This intellectual growth is a

cognitive development available in individuals as a new schema, an element in their cognitive structure. In this perspective of human cognition, knowledge is invented, transformed, and reinvented, not an accumulation of experience or knowledge. Let's see Figure 2.2 portraying graphically how learning takes place as a transformative process.

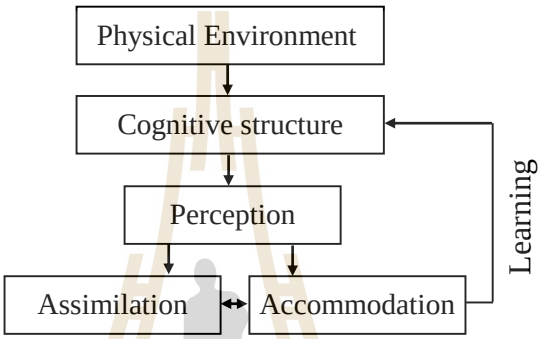


Figure 2.2 Transformative Process of Cognitive Development (Olson & Hergenhahn, 2013, p.286)

However, how individuals acquire learning varies according to different types of knowledge. Piaget differentiated three types of knowledge that learners acquire, including physical knowledge, logical-mathematical knowledge, and social knowledge (see DeVries, 2000; Driscoll, 2005). However, this discussion will focus on social knowledge since language is categorized as social knowledge. In the view of social knowledge, Driscoll (2005) states that individuals acquire knowledge through their active actions on and interactions with other people. In this respect, people are the primary source of social knowledge, yet the acquisition of this kind of knowledge originates in the actions of individuals. That's to say, as individuals interact with other people, they have to make sense of other people's perspectives to become more aware of "a system of social relations" (DeVries, 2000, p.194). Put it simply, individuals are

in control of this developmental process. DeVries (2000) adds that social knowledge like language is acquired through means of communication; instructors can even tell students some aspects of social knowledge, especially language rules or systems agreed upon by people in a community.

2.2.1.2 Social Constructivism

Over the past two decades, after the early 1990s, Vygotsky's theories have received a great attention from applied linguists and SLA practitioners (van Lier, 2004). In Vygotsky's works, social interaction is used as a theoretical framework for learning and development (Lutz & Huitt, 2004). Although Vygotsky did not intend to elaborate SLA specifically, he provided a great basis for SLA research through his analysis of mental mechanisms. He examined the relationship between thinking and language processes in acquiring and developing communicative capacity in social interaction. Subsequently, Vygotsky's contributions have had a significant influence on SLA theory and research (Mahn, 2013) as well as general educational theories (Geerson, 2006). Its central concept is that social interaction plays a vital role in human cognition (Mitchell & Myles, 2004; Liu & Matthews, 2005). Therefore, "knowledge is a social product, and learning is a social process" (Pritchard & Woollard, 2010, p.9), and they are mutually constructed (Santrock, 2001). In the field of education, Vygotsky's works have made both theoretical and practical contributions.

Based upon Vygotsky's notion of social constructivism, social constructivist proponents (Wertsch, 1991; Lantolf, 2000; Lantolf & Thorne, 2007) maintain that learning is an interpersonal activity rather than an individual activity; learning takes place as learners interact with others in a social context. Gass and Selinker (2008) point out that this social activity forms the foundation for individual

functioning, and social interactions are crucial in the development of cognition. The benefits of interaction with other participants include increased critical awareness and distributed thinking processes with developed literacy skills (Lian, 2011). According to Vygotsky, social interaction is a fundamental nature of successful cognitive and intellectual development (Pritchard & Woollard, 2010). In short, learners internally develop knowledge as they are engaged in purposeful social events.

Social constructivism provides a theoretical foundation for teaching and learning approaches. In this social constructivist theory, learning is explained as a collaborative process (Perera, 2011). This collaborative learning model has been developed under the theoretical foundation of social constructivism (Brown, 2007). This learning theory places emphasis on the social aspect of learning and stresses the importance of collaborative learning (Gass & Selinker, 2008). Likewise, instructional designs that promote interaction in the social context offer authentic contexts, student activities, and collaborative tasks (Schneider, 2004). As a result, knowledge acquisition is enhanced through social meaningful interaction among collaborative students (McInnerney & Roberts, 2004). Ubiquitously, collaborative activities and classroom events are largely influenced by social constructivism.

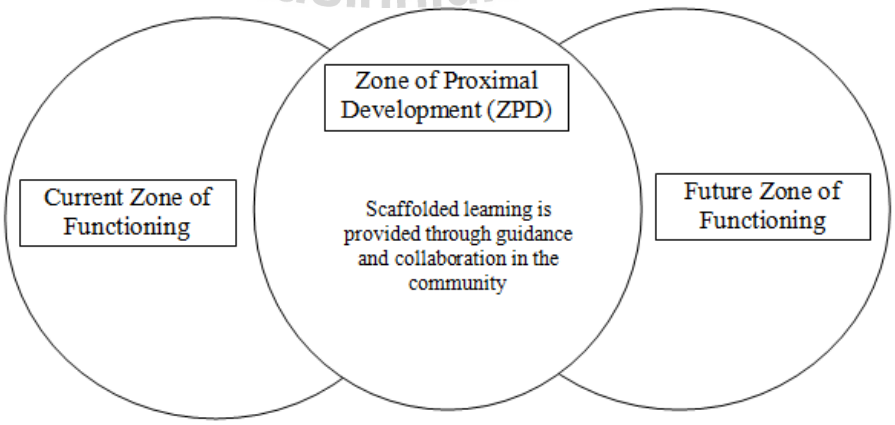


Figure 2.3 Collective Zone of Proximal Development (ZPD)

The Zone of Proximal Development (ZPD) (see Figure 2.3) is a major theme in social constructivism (Pritchard & Woollard, 2010; Fani & Ghaemi, 2011). It is defined as "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky, 1978, p.86). In other words, the ZPD describes the difference between what a person can learn individually and what that person can learn with assistance from more advanced and capable individuals, such as parents, instructors, and even peers. In instructional contexts, as students learn collaboratively, they can undergo qualitative developmental changes (Lantolf & Thorne, 2007). Engaging in a group activity, every individual interchanges a contribution at his/her own level of capacity as they interact meaningfully.

The ZPD is captivating for a couple of reasons. The first attribute is the notion of assisted performance. In this learning process, more capable people (e.g., the instructor, peers) are essential. As less capable students learn in the context of social learning activities, they are modeled or assisted by more advanced persons. This process results in assisted performance and is described as scaffolding. Also, the ZPD asserts that knowledge acquired by others' assistance can determine the learner's future performance (Lantolf & Thorne, 2007). Assistance or support does not need to be provided by more capable people, but subsequently, learners can be a good source of knowledge in L2. They can perform individually at later times as they are getting more capable of performing certain tasks (Johnson, 2004). In the end, less skilled learners are scaffolded or assisted until they are confident that they can work independently.

2.2.2 Applications of Constructivism

Constructivism is a philosophy that underlies learning theories on which teaching methodologies are drawn to inform instructional practices. Constructivism provides a guiding set of principles in various instructional aspects, such as instructor intervention, student treatment, student and instructor roles, and classroom management. The following section will present the pedagogical implications of cognitive constructivism and social constructivism based on their emphasis extensively discussed in the literature.

2.2.2.1 Cognitive Constructivism

It is strongly argued that students can self-explore to solve their problems and discover new concepts (or knowledge) as they transact with an environment which is useful to them and rich with resources. Hannafin and Hill (2007) claim that students construct knowledge as they make an effort to interpret and make sense of their surroundings. They then suggest that the design of learning environments should enable students' personal construction of knowledge and understanding. To facilitate this process of knowledge construction, resources in their learning environments should be relevant and useful for problem-solving activities. Jonassen (1999) suggests that instructors should decide on information students need to understand and resolve their learning problems. Rich resources of a variety of formats should be included to respond to students' different styles of learning. For example, instructors can include documents, graphics, audio-visual media, and animations to allow a multiplicity of alternatives on which individual students draw to complete their learning tasks. Now it can be seen that information-abundant environment is a crucial catalyst for students' process of learning.

It is apparent that rich resources can support students' learning. However, instructors need to determine different kinds of information to help students learn new concepts. Students tend to develop new knowledge when they study subject matters which are challenging and meaningful. Olson and Hergenhahn (2013, p.249) state that learning takes place when materials are "partially known and partially unknown". They further explain that learning new materials leads to a modification of cognitive structures. Facilitating process, challenging materials and experiences are optimal for learning to occur. In contrast, no learning will occur as students are exposed to non-challenging materials and experiences. This encounter does not stimulate a process of modifying cognitive or mental structures, which is integral to intellectual growth. Likewise, Williams and Burden (1997) claim that learning tasks designed by instructors should not be so simple that they are below students' actual level of competence. Since it is difficult to determine students' competence, instructors need to be very careful in choosing learning tasks and setting up task requirements. Support or scaffolding may be provided when students are incapable of solving problems at their own level of competence.

In addition to choosing challenging tasks and materials, it is argued that learning takes place when students learn authentic tasks which are meaningful and relevant to them. It is authentic in a way that learning is situated in a realistic context that benefits students both in their immediate and future contexts. Scholars (e.g., Driscoll, 2007; Ertmer & Newby, 2013; Hannafin & Hill, 2007; Hyland, 2003; Janassen, 1999; Smith & Ragan, 2005; Tschirner, 2001; Wurst, Smarkola, & Gaffney, 2008;) have advocated the inclusion of authentic language in L2 teaching and learning. Wurst et al. (2008) note that learning is situated in authentic and real-world contexts.

That's to say, context and learning are inextricably interrelated and inseparable. Therefore, it is a smart idea to use authentic activities in the classroom as they can contribute to an increasing level of motivation that in turn improves students' learning outcomes (Tschirner, 2001; Hyland, 2003). Authentic tasks can keep students motivated and engaged as they find it meaningful and relevant to their real life. The idea is that learning should be "application-oriented" in an authentic learning context where students can gain language skills and knowledge relatively similar to those in a real-life situation (Tschirner, 2001, p.305). Hyland (2003) goes on to say that being exposed to contextual features, learners are able to process real language that they are likely to use in their real world. In addition, students are likely to transfer knowledge to other similar future situations when they are engaged in authentic tasks embedded in a meaningful context (Ertmer & Newby, 2013). Based on these justifications, it is imperative that authentic learning should be stressed in order to establish students' transferability of learning, which is believed to be one ultimate goal of education.

Constructivists maintain that learning takes place as learners learn mindfully. During their process of learning, learners are prompted to process incoming information in their working minds and modify their mental structures to construct meanings or personal understanding (Williams & Burden, 1997). This meaning-making process is an internal mental operation that can often be understood and manifested by learners themselves through reflections on their cognitive development. Constructivist advocates (e.g., Driscoll, 2007; Jonassen, 1999; Jonassen, Gernusca, & Ionas, 2007; Wurst et al. 2008) have stressed the significance of reflections in students' cognitive development. Driscoll (2007) suggests that students should be urged to "reflect on what and how they are learning" (p.42). They should be assisted and fostered to become

reflective learners in order to help them make sense of their learning process (Wurst et al. 2008). Practically, instructors can form questions that provoke students' reflections, such as 'what have you done?', what strategies have you used?', 'how have you come up with this idea?', and 'how have you evaluated different ideas?' (Jonassen, 1999). In a constructivist perspective, reflections play a significant role in students' learning because reflections on their learning experiences enable them to become more aware of and attentive to their own learning.

It appears that interactions can be implemented based on cognitive and social constructivist principles (see Jonassen, 1999; Porcaro, 2011; Rovai, 2004; Wurst et al. 2008) since these two orientations share the same epistemology--interpretivism. It is well-known that interactive environments play a vital role in stimulating intellectual growth. The formation of such class events allows students to exchange perspectives. During the learning process, students can confront, conflict, and negotiate multiple viewpoints articulated by other peers. Students' learning takes place as they interact with their peers in a purposeful, mindful way. This engagement is essential because meanings are created through conflicting ideas (Pocaro, 2010; Rovai, 2004). It is then important that purposeful discussions should be fostered to help students develop their understanding at a profound level. DeVries (2000, p.209) states that construction of knowledge is "interactively constituted". This means that during a meaningful interaction, each individual creates meanings (equated with learning) dependently of others' contributions (i.e., ideas, actions). Kamii (1984) explains that students learn better when they consider all relevant ideas, including wrong ones. Instructors need to encourage students to defend their own idea and relate one idea to another. For example, if two students arrive at different answers, instructors can ask

each of them to justify his/her idea and scrutinize the other's opposing idea. At this point, one student attempts to persuade the other of his/her idea until the other is convinced that his/her idea is better. This activity can promote students' consideration of all viewpoints from others in a serious and respectful way. Consequently, students modify their old ideas to accommodate new ones when they are convinced that their ideas are wrong and new ideas are better.

2.2.2.2 Social Constructivism

Social constructivists argue that students' learning takes place as a result of meaningful collaboration and co-construction of meaning; that is, students can perform certain tasks with assistance or modeling by more capable peers who have an influential role in cognitive development. The most obvious of this concept is the implication of the ZPD which describes the distance between what individuals can learn independently at their actual level of language competence and what they can be assisted to learn by other more advanced people to attain a potential level of language development. Based on this perspective, instructors usually build learning environments that facilitate collaboration and cooperation in a community of practice. In fact, according to Smith and Ragan (2005), there are various patterns of collaboration, such as student-student, instructor-student, and student-content. These interactive forms can benefit students' learning in a way that various perspectives from other people (e.g., instructor, peers) are processed internally by students to construct meanings. Smith and Ragan further say that when students are engaged in content (e.g., text, vedio), they attempt to interpret and compare the author's viewpoint to create their own understanding. It can be claimed that interaction and collaboration with other people and materials have a

significant impact on students' cognitive structures and development. Thus, class events should be organized to enable students to interact with mixed-ability peers.

The most realized concept of the ZPD is "scaffolding" which has been widely adopted in language classrooms. According to De Guerrero and Villamil (2000), scaffolding refers to "...supportive behaviors by which an expert can help a novice learner achieve higher levels of regulation". In other words, less advanced students are assisted by more competent peers (mediators of learning) to complete a given task that they are unable to perform at their current level of competence. Jonassen (1999) describes three forms of assistance and support provided to assist less capable students to achieve a higher level of competence. First, modeling which focuses on expert performance provides an example of desired performance. Second, coaching which focuses on learner performance involves providing feedback, motivating students, and inspiring reflections. Finally, scaffolding which focuses on a target task (e.g., adjusting task difficulty) is intended to support learning and performance beyond students' capacity. The ultimate goal of assistance is to enable less capable students to gain sufficient potential skills and knowledge, so that they are ready to perform a similar task with no or minimal assistance. Undoubtedly, the notion of scaffolding has been ubiquitously applied in L2 teaching and learning (e.g., De Guerrero & Villamil, 2000; Phadvibulya & Luksaneeyanawin, 2008; Suthiwartnarueput & Wasanasomsithi, 2012).

The underlying concept of scaffolding in the ZPD serves as a theoretical foundation for implementing collaborative activities, especially peer collaboration. De Guerrero and Villamil (2000) investigated the mechanisms of scaffolded peer revision of a narrative text written by two intermediate ESL college students. The two students were assigned to write a narrative prose individually in class, and their narrative pieces

were collected by the instructor before the revision session. Then, they were required to comment his/her peer's writing draft by focusing on content and discourse first and then on language use and mechanics. Thus, these two students took on two roles as a writer and a reader. Upon revising, they were instructed to record all their comments (e.g., tape-recorded, note-taken). The data for analysis included tape-recorded dialogue, students' first draft (jointly revised), and students' final draft. The results showed that peer revision scaffolding tended to be more mutually than singly beneficial to the students. As a writer, they had grown more self-regulated and independent, requiring less assistance from their revising peer. Meanwhile, as a reader, they had improved a range of writing aspects and strategic support and collaboration. Plus, they both benefited from explicit peer scaffolding in reinforcing and re-learning knowledge of structural and rhetorical features. This peer revision suggests that in peer scaffolding, meaning is negotiated and co-created; that is, an individual's personal understanding is promoted through social interaction and collaboration.

Phadvibulya and Luksaneeyanawin's (2008) study is another example of the application of scaffolding and mediation, the central concepts of social constructivism. They developed a hybrid network technology-enhanced language learning (HybridNTELL) model based on a social constructivist approach to promoting EFL learner autonomy. The HybridNTELL model used a hybrid mode of synchronous face-to-face learning and asynchronous online learning. Moodle was used to serve as a online learning platform that mediated learning, complementing face-to-face instruction. These two platforms served as a meaningful space for discussion and collaboration. The HybridNTELL model was implemented with 90 out of 143 EFL first-year students from three classes selected by a means of stratified random sampling.

Since social interaction and collaboration were considered as a mediation of language learning, students were assigned to a group of five with different levels of language proficiency and computer literacy. In this case, more capable students assisted less skilled peers to move into the level where they could perform similar tasks and solve learning problems autonomously in the future. The study's findings showed that the HybridNTELL model yielded positive effects on learner autonomy and language development. Learning through the collaborative model, students made good learning progress in language development. The learners improved their language skills regardless of their previous English proficiency levels. Furthermore, the mean score of the experimental students on the curriculum-based achievement test showed a statistically significant difference from that of the overall population. However, the varying degrees of achievement were dependent upon the patterns of their learning process in the environment. The findings also suggested that the degree of autonomy, patterns of social interaction, discourse patterns in collective scaffolding, and instructor's scaffolding in the HybridNTELL environment were strong predictors of students' language proficiency development.

The aforementioned discussions demonstrate that various instructional strategies can be implemented based on cognitive and social constructivist principles. It is useful at this point to reiterate that these two orientations to language learning cannot be separated in a clear-cut way, but instead they can be assimilated reciprocally to benefit students' learning (see DeVries, 2000; Jonassen, 1999; Jonassen et al., 2007; Porcaro, 2011). The present study constitutes an effort to translate these salient theoretical principles into instructional applications in several major ways. First, students will be exposed to abundant materials and authentic tasks. It is abundant in a way that students will have sufficient resources to complete their given tasks, and it is authentic in a way

that students will perform real-world, relevant tasks required in their immediate and professional contexts. Second, students will be assigned to work in teams of 3-5 students with different levels of capability as determined by their pre-test writing performance. It is hypothesized that this grouping assignment will permit students to learn through multiple viewpoints, and more competent students will make contributions to their less capable peers until they become more self-regulated and independent to work on future similar tasks. It should be noted that these two orientations to knowledge cannot be decisively divided, but they will be extended in a complementary way.

2.3 Web-based Instruction

The dynamics of learning theory and instructional theory have continued due partly to emerging technologies. Nowadays, teaching professionals have faced two challenges: shifting conceptions of learning and affordances of technology (Salomon, 1991). Constructivism presents the first challenge that reconceptualizes learning as a constructive process through which knowledge is internally constructed by individuals and actively co-constructed with other learners (Morphew, 2002). The second challenge is posed by emerging technology. Ubiquitously, technology has played an influential role in educational contexts. The application of technology in education has resulted in a transition from learning as others-guided to learning as self-guided (Salomon, 1991). In the realm of education, these challenges have amplified and extended new forms of teaching and learning.

2.3.1 Digital Technology and L2 Writing

Currently, digital technology has significantly transformed the ways of teaching learning. This novel paradigm is inextricably linked to the application of Internet technology as a mediating tool to enhance traditional teaching and learning practices. Empirically, digital technology has offered pedagogical implications for L2 writing as evidenced by previous studies (e.g., Asawaniwed & Boonmoh, 2012; Buripakdi, 2010; Khampusaen, 2012; Noytim, 2012; Suthiwartnarueput & Wasanasomsithi, 2012). Overall, these studies have shown that computer-mediated learning contributes to EFL students in various aspects, such as extended learning spaces, collaborative or scaffolded learning, self-regulated learning, writing skills and knowledge, and self-expression.

The exponential growth of digital technology has afforded teaching and learning in a social context beyond the classroom. For example, it can be exploited to transform an unrealistic, decontextualized learning into an engaging, authentic learning in real-world contexts (Kramsch & Thorne, 2002). Online tools and resources can open up more opportunities for students to expand their use of English and improve their language skills (Phadvibulya & Luksaneeyanawin, 2008). Because of these benefits afforded by technological revolutions, there have emerged several novel learning paradigms, such as individualized learning, blended learning, flipped classroom, and online/distance learning (see e.g., Rosetta Stone, 2012; Tam, 2009). These learning paradigms can provide new learning platforms and facilitate both synchronous and asynchronous modes of communication.

The use of technology allows meaningful collaborations and discussions beyond the classroom since these dialogical activities are often restricted by time constraints

and teaching in large classes (Angeli, Valanides, & Bonk, 2003). The view of collaborative learning is underpinned by social constructivist principles which are applied for building technology-supported learning environments that nurture supportive, collaborative, and social learning (Tam, 2009). In effect, students can have computer-mediated classroom discussion and even online extended discussion beyond the classroom regardless of time and place (Warschauer & Meskill, 2000). Obviously, it is convenient for students to exchange ideas, resources, and feedback for completing writing tasks when they face problems and need help from their peers.

Computer-mediated learning can promote students' learning autonomy due to availability of online learning materials and platforms. In today's digital world, a vast number of resources are available and accessible to everyone regardless of hierarchy, making it convenient for them to look for things they want (Sparrow, Liu, & Wegner, 2011). As a result of this technological change, learning is no longer determined by instructors and restricted to the classroom. That is, students have significantly more power to have access to knowledge and make their own decisions on how to deal with such knowledge (Lian, 2011). In this digital landscape, therefore, students play an independent role in making their own choices of learning and self-regulating their process of learning.

It is acknowledged that online tools and resources support students' composing process with their own needs. As a result of technological advancements, we live in a knowledge society where knowledge travels effortlessly, knowledge is available to everyone, and everyone can produce knowledge (Drucker, 2002). Upon planning and writing, students have more freedom to look for relevant information online to build up more knowledge and generate ideas. Inevitably, they have to evaluate the credibility

and quality of online resources before deciding to use them. In addition, upon reviewing, online tools and resources facilitate students' reviewing activities, no matter individual or collaborative and synchronous or asynchronous. For example, students can rely on thesauruses and concordancers to select suitable words and edit linguistic features (Stapleton & Radia, 2010). Therefore, it is possible that digital technology can fulfill students' just-in-time needs to solve their problems.

There is evidence suggesting that computer-mediated writing fosters self-expression, authorial voice, and readership. Warschauer and Grimes (2008) point out that blogging constitutes "an informal, idiosyncratic style" (p.8). In this virtual space, students develop a sense of ownership, thus allowing them freedom and authority to express themselves and personal voice. Empirically, Sun and Chang (2012) found that students acquired a sense of authorship as they had a virtual venue that allowed them to identify as an author, write for a purpose, and project authority in writing. They positioned themselves as academic writers whose responsibility was to produce effective texts for readers.

2.3.2 Applications of WordPress

WordPress is an advanced blogging tool and web software that can be used to create both a website and weblog. It functions beyond a typical weblog and a static website and offers a variety of functional features useful for language teaching and learning. Originally conceived of as a blogging system, WordPress has evolved to be a fully-fledged CMS for creating and managing the content of a website through the installation of themes, plugins, and widgets (Hedengren, 2014; Ratnayake, 2013; Scott, 2012). Technically, WordPress is a free and open-source content management system (CMS) software based on PHP (web scripting language) and MySQL (database or data

storage) that operates on a web hosting service (Scott, 2012). It is a web 2.0 tool that transforms a static website that is primarily used for accessing information to a more social, interactive web that allows end users to create, share, and publish content in a participatory way (Berger & Trexler, 2010; Warschauer, 2010). Functionally, WordPress is used to handle a variety of content types, including creation, storage, retrieval, description or annotation, and publication (Stern, Damstar, & Williams, 2010) and construct collaborative learning communities (Douglass, Little, & Smith, 2006). Thus, from a learning standpoint, WordPress, as a weblog and a CMS, creates new promising opportunities for learner-generated content production, learner-learner and instructor-learner interaction, collaborative learning activities, and self-exploration of online resources.

Over the past decades, WordPress has gained its increasing popularity and has been discussed more in books in the domain of both education and business (e.g., Douglass et al., 2006; Hedengren, 2014; Kuhlmann, 2012; Pearce, 2011; O'Connor, 2013; Ratnayake, 2013; Scott, 2012). O'Connor (2013) and Ratnayake (2013) state that the first version of WordPress was released in 2003 as a simple blogging tool, becoming one of the most widely used weblog. To date, WordPress has matured into a fully-functional CMS, which is the most popular and perceived as a CMS rather than merely a blogging platform. Since then, it has been used on millions of websites. W3techs (n.d.) reports that WordPress is the most widely used CMS, accounting for 27.7% of all the websites, which is the CMS market share of 58.9%. It powers websites, weblogs, complex portals, enterprise websites, and even applications (WordPress, n.d.). It is expected that this number continues to grow. WordPress has been increasingly popular due largely to its concentration on aesthetics, web standards, and usability (Douglass et

al., 2006) and simplicity, flexibility, and extensibility (Stern et al., 2010). The following section is devoted to reviewing and discussing three affordable aspects of WordPress: simplicity, functionality, and usability. They are approached from three crucial standpoints: designing, affordance, and learning.

2.3.2.1 Simplicity

Most EFL instructors believe that the integration of technology requires sound technical knowledge and skills. These beliefs can discourage them from integrating technology into language teaching practices. However, today there are a variety of learning tools available that do not require much technical expertise (e.g., Richardson, 2010). With principled designing and development, they can be integrated into language pedagogy. WordPress is a sophisticated tool that can make technology use simpler and more accessible to designers who are inexperienced and non-technically minded. They can build their own website from scratch through the use of WordPress (O'Connor, 2013). Hedengren (2010) and Scott (2012) point out that the setup of WordPress is relatively straightforward and time-saving in no longer than five minutes, requiring minimal technical knowledge, with step-by-step instructions available on wordpress.org and books. Alternatively, instructors may approach their IT department technicians for assistance during the installation stage and perform the remaining tasks (e.g., administration, designing, development, content & user management) to manage and construct the website with desired attributes.

The core feature of WordPress lies in its simple interface. It is similar to a desktop publishing software for generating documents using layout skills on a personal computer. Even end users with no coding experience or expert knowledge can create a beautiful and attractive website (WordPress, n.d.). O'Connor (2013) notes that websites

that are built using HTML codes can cause technical difficulties for non-technical designers when they create, update, and maintain content. However, WordPress can handle these tasks via a WYSIWYG editor more easily and quickly without HTML codes. Thus, designers do not necessarily depend on expert web designers when they want to make changes to the website. They can manage and customize content without knowledge of HTML coding (Messenlehner & Coleman, 2014). Using the WordPress editor, designers can add content to the website with ease, such as audios, videos, and texts. To do this, they embed URLs in a post or page and preview the embedded content before publishing it. This function avoids the need to copy and paste HTML from the website hosting the content (Wordpress, n.d.). Because of its simplicity, even instructors without HTML coding knowledge can create websites and weblogs for teaching-related purposes.

2.3.2.2 Functionality

Functionality refers to a set of functions or affordances of WordPress that contribute to the development of an online support system in the present study. WordPress is a versatile tool that can be supercharged with plugins and themes (Hedengren, 2010). There are hundreds of plugins to increase its functionality and responsive themes designed to nicely scale to the size of users' devices (Scott, 2012). In this respect, WordPress is implemented to manage learning content (as a CMS) and build a collaborative learning community. WordPress is used as a learning or content management system (LMS or CMS) to create, manage, and present content in various ways. After years of development and refinement, WordPress has been conceived of as a robust CMS that enables and simplifies the management of web-based content in various formats without specialized knowledge, such as HTML coding (O'Connor,

2013). Through WordPress, instructors can manage and organize content, including texts, images, audios, and audios as learning materials or objects (Hedengren, 2010; Richardson, 2010). They also can design and create learning tasks, exercises, and activities in which students can practice independently online to reinforce students' understanding of concepts.

In addition, the power of WordPress is harnessed to construct a collaborative learning community as informed by the principles of constructivist learning theory. WordPress supports hundreds of useful plugins that increase its functionality and extendibility. These plugins have been developed by third-party developers and contributors (WordPress, n.d.). To enhance the functionality afforded by WordPress, plugins are installed to create discussion forums and communication channels for meaningful interaction and collaboration. According to Hedengren (2010), WordPress has a standard feature of discussions and comments, supporting different tools or plugins to manage and maintain discussions and comments. For example, the bbPress plugin allows the creation of discussion forums both group forums and sitewide forums. Through these forums, students can ask questions and respond to others' ideas (Scott, 2012). In short, WordPress facilitates the creation of online collaborative learning environments beyond the classroom.

2.3.2.3 Usability

Usability is approached from a learning perspective, covering the affordances of WordPress that contribute to students' learning. The project in the present study was initiated by the strong needs to design and create online learning resources and environments to support students' alternative ways of learning. Richardson (2010) states that weblogs are a democratic tool that can fulfill students'

different needs of learning. Some students may not feel confident enough to express ideas in the classroom, but when they operate in a virtual world, they can develop a sense of expression and participation. To address this diversity, Gardner (2011) suggests that instructors prioritize topics, ideas, and concepts and present them in multiple ways (e.g., diagrams, videos, group works). The multiple ways of delivery reach more diverse students who learn in various ways, thus broadening and deepening their understanding of concepts. To achieve this goal, WordPress is applied as a mode of delivery to pluralize the presentation of learning contents.

The constructivist and collectivist nature of learning can be fostered through the use of WordPress as a mediating tool between learners and content, learners and learners, and instructor and learners. The notion of a constructivist learning is that students learn through their self-discovery of knowledge and concepts; learning is a active process of constructing knowledge rather than acquiring knowledge (Phillips, 1995; Pritchard & Woollard, 2010; Santrock, 2001; Smith & Ragan, 1999). Thus, the online presentation of useful content and engaging activities can support students' individual construction of knowledge. The online support system can be designed to include up-to-date, sufficient, and useful content and content that exactly fits students' needs (Shee & Wang, 2008; Wang, 2003). In contrast, the notion of a collectivist learning (or social constructivist) is that learning is mediated by multiple perspectives, thus taking place as a result of social interaction and collaboration (Hung, 2001; Pritchard & Woollard, 2010; Santrock, 2001). WordPress can serve as a collaborative learning community where students can collaborate meaningfully with other peers or the instructor to seek feedback, exchange perspectives, and develop new

understandings (Berger & Trexler, 2010; Scott, 2012). In short, students can benefit from WordPress as they learn independently and collaboratively.

In summary, WordPress is a sophisticated blogging and web software primarily designed to deliver web-based instruction. It offers functional features and user-friendly interface that allow even language instructors with little coding know-how to create a practical and effective website for teaching purposes. Given these superior values and potentials, WordPress is applied to design and create a web-based support system to mediate students' different ways of learning beyond the classroom. It serves as both a scaffolded learning tool and a content management system (CMS). Essentially, learning is scaffolded in a way that WordPress is used as a collaborative and interactive medium that facilitates collaboration and fosters divergent thinking to support the collectivist nature of learning. Meanwhile, it is used as a CMS to create and present materials online in various ways to support the constructivist nature of learning. However, some scholars (e.g., Lim & Zhang, 2004; Smith & Ragan, 2005) points out that effective learning is largely influenced by principled design, not by technology alone. Therefore, the concepts of ISD theory will be applied to the design of online lessons. These theoretical concepts are useful in a way that a design process is treated in a systematic way; they allow course designers to translate theory into practice and proceed in a principled way.

2.4 Instructional Systems Design

It is useful at this point to understand the concept of a system as it is directly related to the design of instruction and materials to support that instruction. A system is defined as "an integrated set of elements that interact with each other" (Bahathy, 1987, as cited in Gustafson & Branch, 2007, p.17). Instruction operates in a broad, complex context that includes multiple actors and interactive events. Thus, a system

responds to multiple situations and interactions to facilitate its complexities. As its name implies, instructional systems design (ISD) is a systems approach. In a system, all components are interdependent. That's to say, other components respond as a result of a changing component (Branch, 2009). Even if each element in a system has a unique function, together they work toward a proposed goal (Dick, Carey, & Carey, 2009). Figure 2.4 depicts an application model of a systems approach to instructional design.

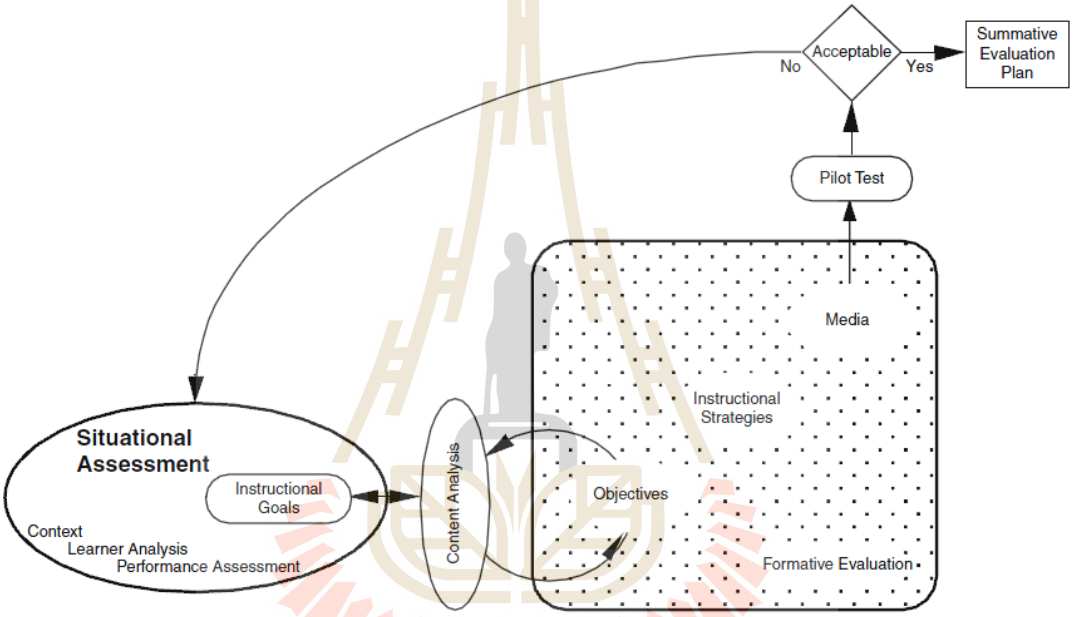


Figure 2.4 Application Model of a Systems Approach to Instructional Design (Branch, 2009, p.11)

The process of ISD is both systematic and systemic. It is systematic in a way that it adopts an input-process-output (IPO) paradigm. These systems are constructed by the clearly specified processes of input data and output data. Meanwhile, it is systemic in a sense that the outcomes of each element have direct or indirect impacts on each other element of the ISD process to some extent, thus producing a ripple effect (Edmonds, Branch, & Mukherjee, 1994). As depicted in Figure 2.5, the **input** phase is responsive

to the variables identified in the learning context by addressing, conditions, information, and knowledge. The **process** phase finds ways to promote divergent and creative thinking by using procedures, methods, or actions to interpret, explain, configure, and portray various methods to events that tend to occur in learning. The **output** phase delivers the outcomes of the process by explicitly presenting ways of knowing that are translated into ways of practice (Branch, 2009).

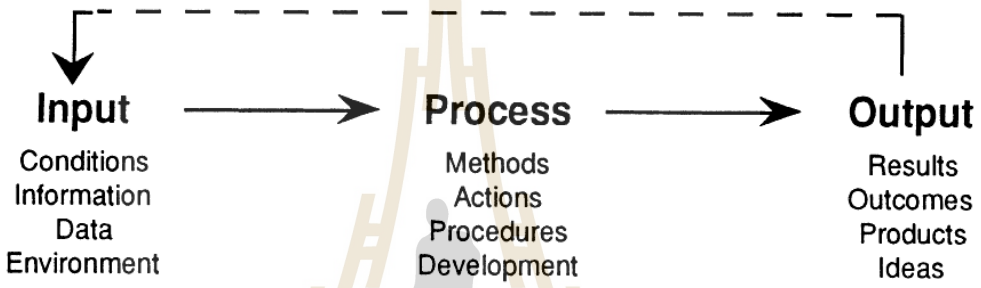


Figure 2.5 Input-Process-Output Paradigm of Instructional Systems Design (Edmonds et al., 1994, p.57)

2.4.1 Definition of Instructional Systems Design

Over the years, the term "instructional systems design" has been defined in a number of various ways. It has varied meanings if it is not further elaborated (Willis, 1995). Though most definitions place emphasis on process and function, Richey et al. (2011) note that process tends to be more common than function. Some authors highlight the process of ISD. Smith and Ragan (1999) defines ISD as "the systematic and reflective process of translating principles of learning and instruction into plans for instructional materials, activities, information resources, and evaluation" (p.2). This definition stresses the scientific process of ISD starting from applying theories of learning and teaching to guide the development of a range of instructional products and

learning activities. Similarly, Richey et al. (2011) synthesized the previous definitions and came up with their own definition of ISD as “the science and the art of creating detailed specifications for the development, evaluation, and maintenance of situations which facilitate learning and performance” (p.3). It is obvious that this definition pays attention to the process that requires both expertise and knowledge in the area.

Several definitions stress the function of ISD. Willis (1995) defines ISD as “the process of designing instructional materials” (p.5). In the similar sense, Gagné et al. (2005) view ISD as “the process of creating instructional systems” (p. 18). The definition by Willis is unlike the one by Gagné et al. in that it is concerned only with instructional products, which is not very exclusive. The underlying reason is perhaps because his article is devoted to a systematic approach to designing learning materials. Gustafson and Branch (2007) define ISD as “a systematic process that is employed to develop education and training programs in a consistent and reliable fashion” (p.17). These function-oriented definitions are similar in that the use of ISD offers a conceptual framework for designing and creating instructional products, learning environments, and education programs.

2.4.2 Instructional Systems Design Models

In some literature, models are often confused with theories. These two terms are often used interchangeably. In fact, they are two different concepts (VanPatten & Williams, 2007; Richey et al., 2011). While “[a] theory is an organized set of statements that allow us to explain, predict, or control events” (Smith & Rogan, 1999, p.18), “a model describes processes or sets of processes of a phenomenon” (VanPatten & Williams, p.5). Many scholars have defined “model” in slightly different words, but the central focus of the definition is on the view of a model as a representation of reality in

a systematic manner. Gustafson and Branch (2007) views a model as “a simple representation of more complex forms, processes, and functions of physical phenomena or ideas” (p.21). Similarly, Richey et al. (2011) define a model as “a representation of reality presented with a degree of structure and order, and models are typically idealized and simplified views of reality” (p.8). In practice, theory provides useful guidelines to practice; its statements are usually translated into practice through a model.

In reference to the foregoing definitions, a model is formed to represent and indicate reality to create a sense of understanding. It is helpful in capturing reality since reality is abstract. Due to its complexity, interpreting and understanding reality varies markedly from person to person, and it is highly impossible that reality can be simply conveyed to other people. In this sense, a model can serve this purpose by describing how various steps can be conducted and the entire process can be conceptualized (Gustafson & Branch, 2007). Gustafson and Branch (2002) note that a model can facilitate and simplify our view of reality as it is too complex to visualize reality. “Since much of that complexity is unique to specific situations, models help by identifying what is generic and applicable across multiple contexts” (p.24). To sum up, a model can help us understand a system or process that transforms complex real-life situations to flexible and easy steps at the level of practice.

Since the 1970s, a greater number of ISD models have been devised (Gustafson & Branch, 2002). Of course, they are distinct in details. Although they exhibit a high degree of variation in specific features (e.g., phases, graphics), practically they adhere to the core elements of ADDIE used as a conceptual framework. ADDIE is an acronym for analyze, design, develop, implement, and evaluate (Gustafson & Branch, 2007; Gagné et al., 2005; Dick et al., 2005; Baturay, 2008). The following section is devoted

to reviewing and examining the conceptual ISD models that provide conceptual guidelines for designing and developing the WAW instructional model.

2.4.2.1 The ADDIE Model

The ADDIE Model is one of the most referenced and influential ISD models. It illustrates the conceptual elements of ISD (Gustafson & Branch, 2007), thus regarded merely as a process serving as a guiding framework or a fundamental concept for developing educational products and learning resources (Branch, 2009). In fact, the ADDIE Model is not specific and fully elaborated in itself, but rather it is an umbrella term that refers to a family of models that share common fundamental elements (Branch & Merrill, 2012; Molenda, 2003). Molenda (2003) asserts that the ADDIE Model is just a colloquial term that describes a systematic approach to instructional development. Having informally evolved through oral tradition, it seems not to be created by one author; its author is unknown.

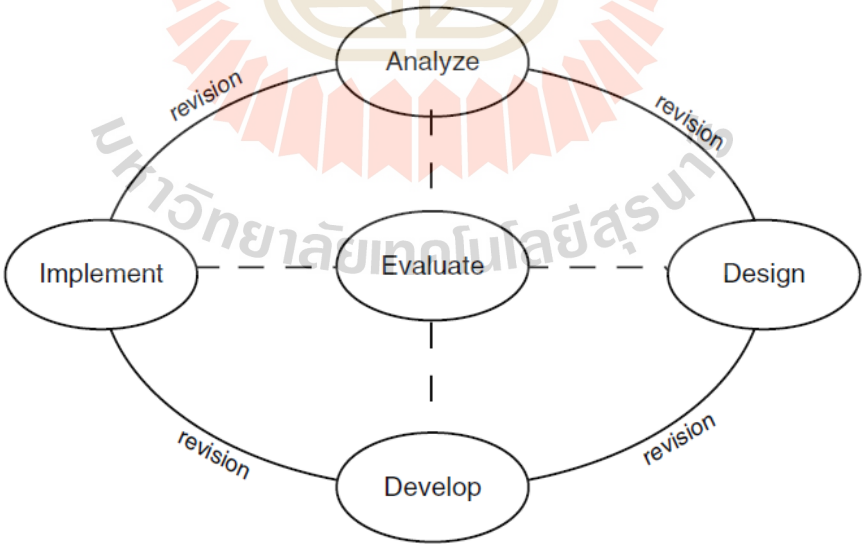


Figure 2.6 Components of the ADDIE Model (Gustafson & Branch, 2007, p.18)

It is widely understood that ADDIE refers to the core ISD process comprising the five generic elements as conceptually depicted in Figure 2.6. When these major elements are used in the development of ISD models, they are considered to be both sequential and iterative (Molenda, 2003). In other words, the activities of ADDIE typically are not performed in a linear, orderly way although some authors may present them so for the sake of convenience. In the entire ISD process, instructional designers often have to move back and forth among the phases. The nature of the ISD process is iterative and self-correcting, emerging as one of its strongest points (Gustafson & Branch, 2007). Each element informs the others as development and revision takes place throughout the design process at least up to the implementation (Gustafson & Branch, 2002). The ADDIE Model includes core elements inherent in other ISD models.

Figure 2.6 illustrates the connection of elements. The solid lines indicate the process flowing from analysis to evaluation while the dotted lines indicate the routes of feedback. Evaluation activities can reveal which element needs to be revised. The entire process is based upon systematic problem-solving models. However, these problem-solving activities can take place in each element and are not necessarily carried out in a rigidly linear and procedural manner (Gagné et al., 2005). Due to its salient linearity, the model is flexible and iterative enough to allow for the overall process to take place at any particular phase (Gustafson & Branch, 2007). The elements of the ADDIE Model are inherent to most ISD models and related to a set of ISD tasks required to complete the project.

2.4.2.2 The Kemp Model

The original version of the current Kemp Model was devised by Jerrold Kemp and further developed by Jerrold Kemp, Gary Morrison, and Steven Ross in 1994 (Gustafson & Branch, 2002). The Kemp Model is eclectic as it is created on theoretical

ideas from other disciplines and approaches. For instance, both behavioral and cognitive approaches are incorporated into the model. In the recent sixth edition of the book, Designing Effective Instruction, they added a new author, Howard Kalman. So far, they have made significant updates to keep abreast of recent trends and research. The 2011 version of this popular ISD model focuses more attention on the considerations of integrating technology (e.g., computer-based, web-based, distance) into designing and developing instruction. In addition, the Kemp Model presents the ISD process with emphasis on instruction that is approached from the perspective of learners rather than from the perspective of content (Morrison et al., 2011). In other words, learner characteristics and feedback are crucial to developing instruction.

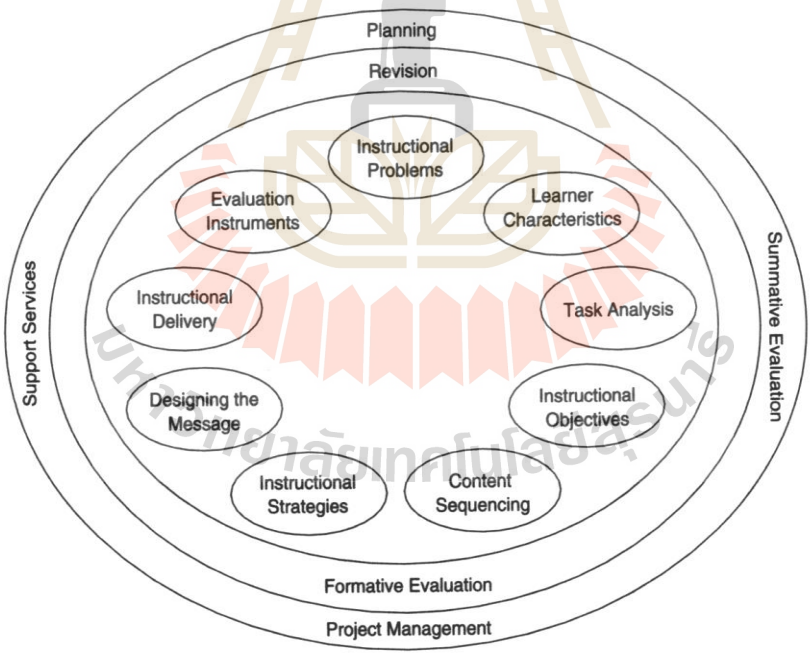


Figure 2.7 Components of the Kemp Model (Morrison et al., 2011, p.12)

Graphically presented in an oval shape as in Figure 2.7, the Kemp Model is circular rather than linear. The model consists of nine elements that are not connected with lines or arrows to prevent linearity and at the same time to convey flexibility

(Morrison et al., 2011). The model holds a belief that the ISD process is an ongoing activity informed by revision or feedback linked with all the elements. Instructional developers can start the project at any point and work on it in any sequence. “This is essentially a general systems view of development wherein all elements are interdependent and may be performed independently or simultaneously as appropriate” (Morrison et al., 2011, p.29). Despite this, the presented conventional framework suggests that they start with the stage of “task analysis” (Gustafson & Branch, 2002), whereas some (e.g., Christensen, 2008) prefer to start with specifying instructional problems and instructional goals as presented in order by Morrison et al. (2011). Then proceed clockwise. It is logical to develop evaluation tools right after objectives are defined (Morrison et al., 2011). It can be seen that the Kemp Model responds to the nature of actual practice.

Morrison et al. (2011) identify nine key elements that should receive great attention: (1) identify instructional problems and instructional goals for designing and developing an instructional system; (2) define learner characteristics that will influence instructional decisions; (3) identify subject matter and analyze task elements relevant to proposed goals and purposes; (4) formulate instructional objectives; (5) perform content sequencing in each teaching unit for logical learning; (6) decide on instructional strategies that are both creative and innovative; (7) design the instructional message and select the most appropriate and effective means of presenting information (e.g., words, graphics); (8) develop the instruction involving putting all the parts together to produce instructional resources (e.g., video recordings, web pages); and (9) develop evaluation instruments to assess students’ achievement in relation to stated objectives.

2.4.2.3 The SREO Model

The application SREO Model, short for Suppasetseree's Remedial English Online, was developed by Suksan Suppasetseree (2005) to serve Remedial English for first-year university students. The SREO Model is a web-based instructional system, implemented to design and produce learning materials and multimedia to support students' independent learning. The SREO Model consists of 6 phases and 16 steps as shown in Figure 2.8.

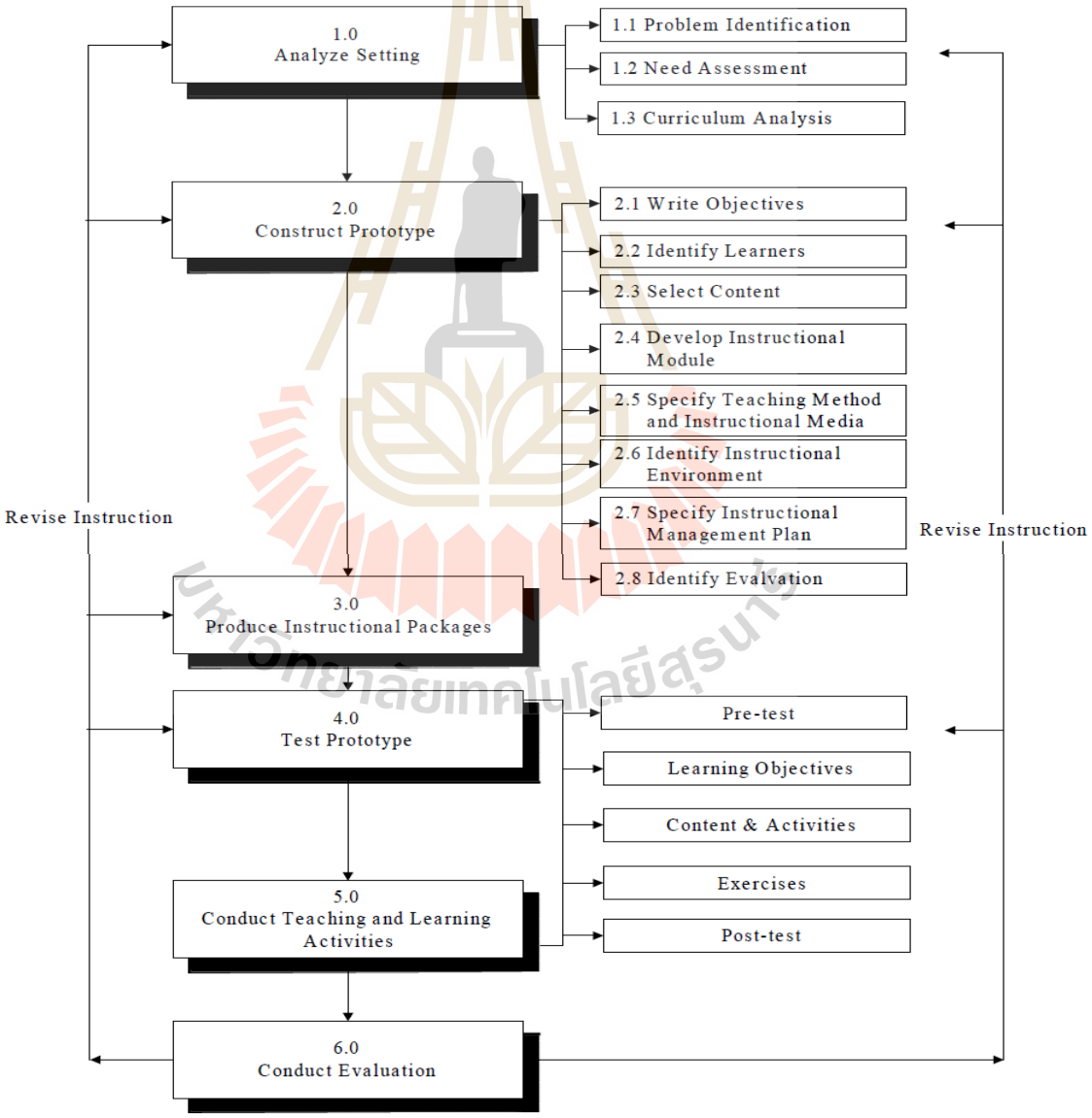


Figure 2.8 Phases and Steps of the SREO Model (Suppasetseree, 2005, p.108)

Phase 1 : Analyze Setting

This initial phase aims at analyzing learner needs, problems, and curriculum. The analysis of these aspects contributes to the definition of learning goals and objectives and the specification of pre-requisite skills and knowledge.

Phase 2 : Conduct Prototype

This step includes these tasks: definition of objectives, identification of learners, selection of content, development of instructional modules, specification of teaching methods and instructional media, identification of instructional environment, specification of instructional management plans, and identification of evaluation methods.

Phase 3 : Produce Instructional Packages

The third phase intends to construct a lesson plan. The creation of this lesson plan is determined by a related set of learning goals and objectives which are formulated in the second phase. In this phase, learning activities are created in alignment with these learning goals and objectives.

Phase 4 : Test Prototype

In this phase, the developed prototype is field-tested and assessed. The process of testing and assessment can take place in an iterative way. Some issues or steps might be addressed several times until the proposed objectives are achieved.

Phase 5 : Conduct Teaching and Learning Activities

In this phase, learning packages (e.g., lessons, activities) are implemented in the mode of web-based instruction to support students' out-of-class learning. Online tools and applications are installed to support communication and manage teaching and learning activities.

Phase 6 : Conduct Evaluation

The SREO Model is implemented and evaluated through students' performance and feedback. Learning outcomes and feedback can determine which elements are effective and which elements need to be revised.

2.4.3 Applications of Instructional Systems Design Models

Typically, ISD models are often designed for a specific purpose and context. In this respect, course designers who are interested in adopting a certain model have to further modify and specify phases and steps. These sub-components are more specific and detailed in nature, providing step-by-step guidelines responsive to a desired purpose and context. The specific and detailed phases and steps may not be suitable for some contexts and courses. Edmonds et al. (1994) and Gustafson and Branch (2002) argue that specific contexts and purposes are crucial indicators of the usefulness of ISD models; no single model can serve every purpose and context effectively.

Therefore, this present study intends to develop a novel ISD model as a conceptual framework for developing web-based lessons in response to a specific purpose and context. The development is based on three ISD models: ADDIE Model (Gustafson & Branch, 2007), Kemp Model (Morrison et al., and SREO Model (Suppasetseree, 2005). Their essential features are highlighted and integrated. The ADDIE Model is a generic ISD model that includes major fundamental components. Practically, these fundamental components specify common ISD tasks at different phases. Unlike the other two models, the ADDIE Model focuses on its major components, rather than its characteristics. That's why, the ADDIE Model is regarded as a process of ISD (Branch, 2009), instead of a model with particular characteristics that vary according to authors' perspectives.

The Kemp Model is a model for designing instruction that includes elaborated elements. It emphasizes flexible process and learner perspectives. First, it is flexible in that its development process can start at numerous points and does not need to proceed in sequence. Designers can even work on single elements independently or more than one element concurrently. Second, its development process is approached from learners' perspectives. During the analysis phase, learner characteristics are analyzed focusing on learning backgrounds. The data obtained from this analysis are used as guidelines for selecting and developing instructional strategies appropriate for them.

The SREO Model is a web-based instructional system developed to produce an online remedial English course to help first-year students with low proficiency. It illustrates logical phases and steps in designing and developing web-based lessons. These course lessons are delivered online to support students' learning beyond the classroom. The SREO Model provides a useful set of logical and clear steps and sub-steps for designing and developing web-based learning materials and multimedia to support students' self-regulated learning and practices.

2.4.4 Model Development and Lesson Efficiency Testing

This section reviews the process of model development and the efficiency testing of web-based lessons.

2.4.4.1 Seven Steps for Model Development

It is vitally important that designing and developing an instructional model necessitates a thoughtful and systematic execution. To address this necessity, Brahmawong and Vate-U-Lan (2009) proposed a Seven-Step Model for R&D Prototype Development that functions as a conceptual framework for developing an instructional model or model prototype to enhance the understanding of complex

situations. This conceptual framework consists of seven important steps that are described and explained as follows:

Step 1.0 – Review Bodies of Knowledge. This step involves documentary research and literature by reviewing relevant theories and principles, interviewing experts and authorities, and conducting field visits (e.g., attending classrooms, seminars or conferences).

Step 2.0 – Conduct Needs Analysis. This step sets out to identify the actual needs and purposes for a prototype in terms of components, procedures, logical steps, and specifications. The needs assessment can be performed by studying existing documents and related policies and/or by conducting a survey or interview with stakeholders.

Step 3.0 – Develop a Conceptual Framework. This step intends to construct a conceptual framework of a prototype drawing on necessary data obtained in Step 1.0 and Step 2.0. A drafted conceptual framework elucidates and describes the proposed elements of a prototype, including theoretical principles, functions, processes, logical steps, and specifications.

Step 4.0 – Secure Expert Opinions. This step aims at evaluating a conceptual framework by experts who have special knowledge of a subject in inquiry. Comments and suggestions from these experts can be utilized for improving a conceptual framework. The evaluation can be conducted by employing a variety of research instruments, such as questionnaire, one-on-one interview, and focus group interview.

Step 5.0 – Develop a Draft Prototype. Once a conceptual framework is approved and revised, a draft prototype is designed and developed. The development of a prototype involves two necessary components: prototype and specifications. A

prototype consists of phases and steps and displays clear and logical relationships among elements. Each element is clearly specified and detailed.

Step 6.0 – Verify or Test a Prototype. In this step, a draft prototype is trailled to measure its efficiency through two testing steps: tryout and trial run. The tryout step involves trialling and improving a prototype according to performance outcomes and comments from end-users (e.g., students, teachers). The trail run step includes implementing a prototype in a real-life situation to ascertain its quality. This efficiency testing enables the determination of expenses, optional time, suitability, and usefulness.

Step 7.0 – Finalize a Prototype. This step entails finalizing a prototype and writing a final report that details its finalized elements, such as principles, functions, processes, logical steps, and specifications.

In conclusion, this seven-step model provides a very useful blueprint for creating an instructional model as a viable conceptual framework for developing instructions and materials. It enables course designers and developers to work in a systematic and logical manner ranging from reviewing relevant knowledge to identifying needs to developing a prototype to fulfill those needs.

2.4.4.2 Efficiency Testing of Web-based Lessons

Before instructional packages and learning materials are implemented, it is imperative that they undergo efficiency testing to determine whether they contribute to students' learning. Brahmawong (2013) developed "developmental testing" that allows materials developers to test multi-media and learning materials through a series of phases and steps to measure efficiency or quality. This efficiency testing is statistically

computed using an E_1/E_2 formula. E_1 refers to efficiency of process while E_2 refers to efficiency of product.

The formula for E_1 is as follows:

$$E_1 = \frac{\left(\frac{\sum x}{N}\right)}{A} X\ 100$$

Here, E_1= The efficiency index for the process in terms of percentage score (%) from exercises

Σx = Summation of students' scores obtained from exercises

A = The full score of exercises

N = The number of students in the sample

The formula for E_2 is as follows:

$$E_2 = \frac{\left(\frac{\sum f}{N}\right)}{B} X\ 100$$

Whereas, E_2 = The efficiency index for the product in terms of percentage score (%) from posttests.

Σf = Summation of students' scores obtained from posttests

B = The full score of posttests

N = The number of students in the sample

The criterion of E_1 and E_2 needs to be designated only once and the same across a series of efficiency testing steps of process and product. This task must be done prior to the implementation of instruction and learning materials. Based on this designated criterion, materials developers (or teachers) attempt to reach the target values. In practice, criterion setting is determined by whether instruction is intended to improve cognitive, or affective, or skill domains. For example, a domain (e.g., writing) that requires considerable practice and development needs to be designated at 80/80. It should be noted that higher values tend to indicate higher quality.

The obtained figures of E_1 and E_2 indicate whether the efficiency of process or product needs to be revised in a corresponding way to meet the proposed criterion. The variation between the E_1 and E_2 values should not be greater than 2.5%, otherwise either process or product has to be adjusted and re-evaluated to ensure students' consistency of performance. This means that students who perform well during their learning process (exercises) are believed to perform well on their learning products (posttests).

2.5 Relevant Studies

This section sets out to review previous studies that employ the concepts of a SFL genre-based approach to academic writing, WordPress as a support for language pedagogy, and instructional models in writing instruction.

2.5.1 Genre-based Approach to Academic Writing

A genre-based approach informed by SFL has played an influential role L2 writing in general and academic writing in particular. Despite its influence, it has been found that there have been a sparse number of empirical studies into the effectiveness

of a SFL genre-based approach to academic writing in Thailand (e.g., Chuenchaichon, 2014; Piriyasilpa, 2016).

Kongpetch (2006) designed a SFL-inspired teaching unit that was aimed at implementing a genre-based approach to teach an exposition genre to 42 English-major and -minor students at Khon Kaen University, Thailand. The main goal of this study was not to investigate the effects of a genre-based approach, but to explore ways in which a genre-based approach could be adjusted to suit an educational and cultural context in Thailand. The teaching unit which focused on teaching the specific stages and lexico-grammatical features typical of an exposition genre was developed in accordance with the four stages of the teaching-learning cycle by Hammond et al. (1992): knowledge building, text modeling, joint construction, and independent writing. Using an ethnographic approach to collecting and analyzing the multiple-source data (e.g., written texts, students' diaries, informal discussions), she found that the students perceived the genre-based program as having significant impacts on their writing experience. The majority of them thought that they knew how to write and improved their writing skills.

A few years later, Lerdpreedakorn (2009) implemented a SFL genre-based approach to teach a discussion genre in order to investigate two aspects: values of a genre-based approach and students' perceptions to a genre-based approach. The subjects were 39 third-year English-major students who enrolled for Extended Writing Course at Udon Thani Rajabhat University, Thailand. This genre-based writing course focused on developing writing skills through a discussion genre, with a special focus on its salient generic structure and lexico-grammatical features. The teaching and learning activities were drawn on the four stages of the teaching-learning cycle by

Disadvantaged Schools Program (1989): knowledge building, text modeling, joint construction, and independent writing. The analysis of multiple-source data (e.g., written products, students' diaries, teacher's journal, interviews, self-assessment questionnaires) revealed that a genre-based approach had a significant impact on students' writing ability, and they developed positive attitudes towards learning to write through a genre-based approach.

Instead of either exposition or discussion, Srinon (2011) focused on these two genres by examining the common aspects of 72 Thai students' academic writing in two classes at Kasetsart University, Thailand. The main objective of this study was to observe developments in the students' academic writing after they learned through a genre-based approach. The teaching procedures in this study were based on the teaching-learning cycle; however, there were five stages developed by Feez (1998): knowledge building, text modeling, joint construction, independent writing, and linking to related texts. The posttest writing performances indicated that the students produced essays with conventionalized patterns of textual organizations typical of exposition and discussion genres. The close linguistic analysis revealed the students' more various choices of lexico-grammatical resources for construing inter-clausal relations (e.g., coordination, subordination) and logical relations (e.g., causality, concession).

The literature review has revealed that these research studies employed genre-based approaches as underpinned by SFL to teaching academic writing skills through school genres (e.g., exposition, discussion). The principal findings are that genre-based approaches can be effectively implemented for teaching academic writing to EFL students with minimal exposure to academic discourses. In addition to their enhanced writing ability, they express their positive attitudes towards genre-based instruction.

This approach is particularly worthwhile as students are promoted to compose for a communicative purpose in a realistic context. However, the three reviewed studies conducted in Thailand tend to focus much on textual structures, grammatical features, and teaching-learning processes. In order to extend their research scope, this study aims to expose students to lexico-grammatical features typical of academic registers so as to develop their repertoire of linguistic resources and sensitize them to rhetorical effects realized by their choices of lexico-grammatical instances. By emphasizing rhetorical functions, students can become more critical and aware of lexico-grammatical choices they intentionally make to construe ideational meaning, interpersonal meaning, and textual meaning as foregrounded by SFL.

2.5.2 WordPress in Language Teaching

In spite of its widespread popularity, research on the application of WordPress remains relatively scant, especially language pedagogy and research. In recent years, however, both researchers and practitioners have shifted their interest to the adoption of WordPress for teaching-related purposes due to its functionality and versatility.

Asawaniwed and Boonmoh (2012) investigated the attitudes and motivation of 39 first-year tertiary students when they performed writing tasks on WordPress. These non-English major students enrolled in English Skills and Strategies at King Mongkut's University of Technology Thonburi, Thailand. WordPress was chosen as a blogging platform because of its friendly interface, abundant features, and simplicity. In this project, the students were required to post at least four blog entries in the topics given and of their interest on WordPress over a period of four weeks. Then, they were also required to voice their reflections on the use of WordPress. The analysis of actual blog entries and reflexive logs showed that participants expressed a positive attitude towards

the use of WordPress as a means of blogging. Also, they reported being more motivated to write on the online platform than using the paper-based method.

Girton-Snyder (2012) examined the possibilities of employing e-portfolios for student learning and assessment by exploring potential benefits, existing successful practices, and suggestions for adopting and realizing them. The purpose was to seek suggestions for implementing an e-portfolio model as an useful tool for assessment practices. The data were collected from 248 online surveys completed by students and faculty members and three semi-structured interviews with three administrators. The analysis of data showed that e-portfolios would be of benefit to assessment processes and student learning. WordPress was recommended as an online personal platform for e-portfolios for blogging and publishing activities. On their own weblog, students could reflect on their experiences, collect artifacts from all courses, record their journal assignments, develop their identity on the web, create discussion forums, link to industry-related websites, and showcase their résumés. The researcher argued that WordPress has proven a sophisticated technology optimal for students' e-portfolios with outstanding attributes, such as cost-effective, user-friendly, customizable, and accessible.

Finally, Roseth, Akcaoglu, and Zellner (2013) designed and developed a hybrid learning mode that combined synchronous face-to-face and computer-supported collaborative learning. This blended course aimed to support both synchronous and asynchronous collaborative learning and discussions beyond the classroom. To achieve the goals of the course, WordPress was adopted as a portal site that brought together other useful online tools and websites for information access, communication, collaboration and discussion, and feedback provision. These online tools allowed

students to work together in a collaborative group to complete assigned tasks regardless of physical presence.

This literature review has shown that WordPress is adopted for various purposes in language teaching and learning. It serves as an online learning platform for collaborative learning activities in a virtual world. It is also adopted as a portal site for supporting real-time communication and managing personalized learning content. Besides, WordPress is used as a personal e-portfolio tool for students to collect their school works. This evidence indicates that WordPress has recently become popular in education. However, there are a relatively small number of research studies into the pedagogical use of WordPress, compared to other well-known weblogs (e.g., Blogger) and LMS (e.g., Moodle). Particularly, WordPress that is applied as a delivery system of online lessons tends to be under-researched. To address this scarcity, this study implements WordPress as a CMS to present and manage web-based learning resources to support students' academic writing.

2.5.3 Instructional Models in Writing Instruction

Over the past decade, more research studies have exploited instructional models as informed by ISD theories to conceptualize theoretical principles in various aspects of language pedagogy. However, this section reviews previous studies that utilized instructional models as a conceptual framework for writing instruction in Thai EFL contexts.

Watcharapunyawong and Usaha (2013) designed a social media collaborative discussion (SMCD) model as an instructional framework for reducing grammatical errors in university students' writing via Facebook as a learning platform. This model was made up of six major phases: (1) analyze problems, (2) design online tasks, (3)

conduct online discussion, (4) assess knowledge, (5) implement knowledge, and (6) evaluate writing performance. The participants were 35 second-year English-major students who enrolled for Writing Strategies in English. The data were collected from analyzing grammatical errors in writing pretest and posttest, student diaries, revisions of writing drafts, questionnaires, and semi-structured interviews. The findings demonstrated that the elements and processes of the SMCD Model were evaluated by three experts as "highly appropriate". The analysis of the writing tests, student diaries, and draft revisions revealed the significant reduction of grammatical errors at the 0.00 level. The questionnaires and semi-structured interviews discovered that the students expressed positive attitudes towards the SMCD Model.

Surakhai and Pinyonatthagarn (2014) developed a weblog-based English writing instructional (WEWI) model as an conceptual framework for teaching writing through a process-based approach. This process-based writing model consisted of three phases with 11 steps. The participants were 30 first-year students who registered for English for Study Skills Development offered by Valaya Alongkorn Rajabhat University. The data were collected from model evaluation form, writing pretest and posttest, reflexive journals, and satisfaction questionnaire. The findings showed that the WEWI Model was evaluated as an "appropriate" conceptual framework. The E_1/E_2 efficiency values were 77.03/75.53, which achieved the proposed 75/75 criterion. It was also found that the students made a statistically significant progress in writing at the 0.05 level and expressed a high level of satisfaction with the WAEI Model.

Termsinsuk (2015) constructed a blended instructional model via weblog to enhance students' summary writing ability. This weblog-based model served as a conceptual framework for teaching summary writing that combined face-to-face

instruction and online practice activity on weblog. The model consisted of two main phrases: extracting information via face-to-face instruction, writing summary via weblog., and publishing via weblog. The participants were 41 English-major students who registered for Academic Writing. The findings revealed that the model was evaluated by three experts as a "very good" conceptual framework. Also, it was effective in improving the students' summary writing ability as evidenced by the significant increase of their posttest scores at the 0.05 level of significance.

Linh and Suppasetseree (2015) developed an instructional model as a conceptual framework for creating Facebook-based collaborative learning lessons (FBCL Model) to improve EFL students' writing skills. The participants in this study were 52 first-year students who studied English as a fundamental course at Suranaree University of Technology. The FBCL Model was composed of 6 phases and 15 steps that served as guidelines for systematically implementing Facebook-based collaborative learning lessons and instruction. The FBCL Model was evaluated by three experts as an "appropriate" conceptual framework. The E_1/E_2 efficiency values of the FBCL lessons were 81.56/80.58, which reached the designated 80/80 criterion. The writing results showed that the students performed significantly better on the posttest than the pretest at the 0.05 level of significance. In addition, they expressed positive attitudes towards the FBCL lessons.

From these previous studies, it can be seen that they implemented the principles of ISD through instructional models into the teaching and learning of writing skills that incorporate the adoption of web 2.0 technologies, such as social media and weblog. The principal findings indicate that the application of instructional models in technology-mediated instruction enable a systematic development of teaching and learning activities which can contribute to students' writing ability and positive attitudes. It is

suggested that ISD theory is valuable for instructional situations that involve multiple and complex issues, i.e. translating theoretical principles into practice and implementing technology as a support learning tool.

2.6 Summary

This chapter reviews the major concepts that are implemented in the present study. It starts with the concept of writing that includes the nature of L2 writing, a genre-based approach to academic writing, academic argumentation, and integration of source ideas. The second section intends to describe theoretical foundations that cover cognitive and social constructivism. The third section presents the concepts of web-based pedagogy with a focus on the application of WordPress as a support system for delivering online content. The fourth section addresses the concepts of ISD that facilitate the process of applying theoretical concepts and technological support. The final section reviews the previous studies into SFL genre-based approaches, WordPress as a support tool, and instructional models.

CHAPTER 3

RESEARCH METHODOLOGY

This chapter describes and explains the methodology of the research. The first section consists of research design and research participants. The second section details the construction and validation of the research instruments. The third section presents the procedures of data collection and analysis. The final section summarizes the chapter.

3.1 Research Design

This research study was a one-group pretest-posttest design that employed a mixed-methods approach to data collection and analysis (Creswell, 2014). It should be noted that the present study did not make any comparison across the groups, but it examined the effects of the WAW lessons on the participants' writing performance before and after the treatment. Figure 3.1 illustrates the one-group pretest-posttest design of the present study.

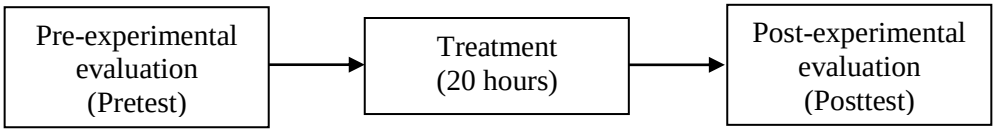


Figure 3.1 Design of the Research study

3.2 Research Participants

The research participants were 64 English-major students who enrolled in Academic Writing offered by Department of Western Languages and Literature, Ubon Ratchathani University. This writing course was open mainly to third-year students and also fourth- and fifth-year students who failed at their first attempt or registered for re-grade. To register for Academic Writing, they had to pass two perquisite writing courses: Paragraph Writing and Essay Writing, which focused mainly on types, structures, cohesion, and coherence of paragraphs and academic essays. The participants were selected from two intact classes by a means of purposive sampling. They were involved in the following phases:

3.2.1 Development Phase

The developed WAW lessons were tried out for 20 hours with a group of 31 students who registered for Academic Year in Semester 2, Academic Year 2015. To ensure that the lessons would benefit different numbers of learners with different levels of proficiency, they were divided into three groups according to three steps of developmental testing: individual testing, small-group testing, and field testing. The first two steps required equal numbers of participants in each different level of proficiency (high proficiency, mid proficiency, and low proficiency). In this study, there were three students in the individual testing and six students in the small group testing. In these two steps, the numbers of students were equal in each level of proficiency. However, there were 22 students in the field testing who were not segregated according to their proficiency levels since it was impractical to reach equal numbers of participants in each level of proficiency.

3.2.2 Research Phase

The revised WAW lessons were fully implemented for 20 hours with 33 students who enrolled in Academic Writing in Semester 2, Academic Year 2016. The students were not grouped according to their levels of proficiency as in the field testing step of the development phase since it was impractical to reach equal numbers of participants in every level of proficiency. Therefore, it was assumed that they came to class with mixed levels of proficiency. In summary, there were 27 third-year students, 1 fourth-year students, and 5 fifth-year students who registered for a re-grade. Before they participated in this study, they reported that they had learned English for at least 10 years and were rarely exposed to academic writing outside the classrooms. They mainly wrote in their writing courses and in some other courses that required them to discuss the concepts.

3.3 Research Instruments

3.3.1 WAW Instructional Model

The construction of the WAW Instructional Model was based on the coherent synthesis of the elements and features of three ISD models: ADDIE (Gustafson & Branch, 2007), KEMP (Morrison et al., 2011), and SREO (Suppasetseree, 2005). The development was intended to construct a conceptual framework that specified the planned phases and steps for developing the WAW lessons. In this study, the prototype of the WAW Instructional Model was developed based on the conceptual framework of Seven-Step Model for R&D Prototype Development proposed by Brahmawong and Vate-U-Lan (2009). This conceptual framework has been adopted as a systematic set of guidelines for developing an instructional model by several ISD research studies (e.g., Dennis, 2011; Linh & Suppasetseree, 2015; Suppasetseree, 2005;

Termsinsuk, 2015). Figure 3.2 illustrates the development process of the WAW Instructional Model.

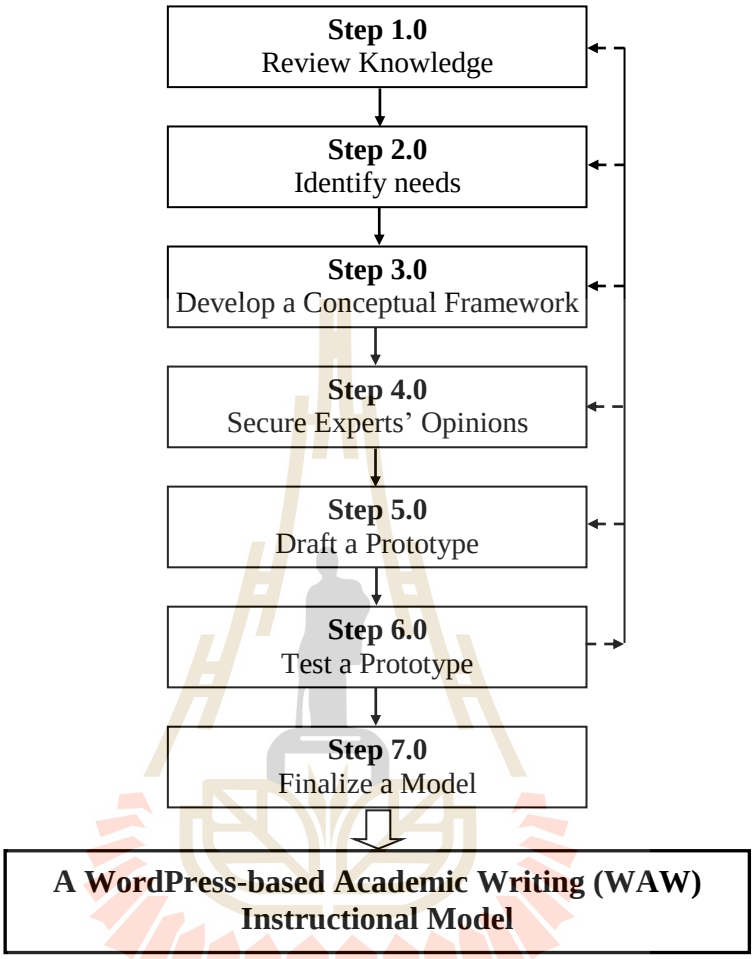


Figure 3.2 Development Steps of the WAW Instructional Model

The development process of the WAW Instructional Model consists of seven steps. These steps do not need to proceed exactly in order, but they can take place in a recursive and concurrent way.

Step 1.0 : Review Knowledge

The first step began with an extensive review of existing literature to gain insights into the major theoretical concepts conductive to the development of the prototype of the WAW Instructional Model. In this study, there were four areas of

related theories reviewed: a semantic approach to writing, educational technology, constructivist principles, and instructional systems design. These reviewed concepts served as a useful set of principles for creating a conceptual framework.

Step 2.0 : Identify Needs

The researcher analyzed the context of the study to identify the actual needs of online lessons and instruction. In this step, there were various aspects to be analyzed, including instructional needs, learner backgrounds, course syllabus, ICT masterplan, and infrastructure. The analysis of these aspects led to the identification of required knowledge and learning focus in response to students' special needs and other support facilities.

Step 3.0 : Develop a Conceptual Framework

The researcher developed a conceptual framework based on the theoretical concepts reviewed in Step 1 and the instructional needs identified in Step 2. This conceptual framework was constructed to operationalize all the proposed theories in Step 1. Graphically, it represented the proposed elements (phases and steps) and displayed the relationships among those elements, reflecting the actual process of the development.

Step 4.0 : Secure Experts' Opinions

The researcher conducted a survey of opinions of three qualified experts who had more than 10 years' experience of web-based instruction and ISD research studies. These highly experienced experts were invited to evaluate the conceptual framework as proposed in Step 3 using an evaluation form developed by the researcher. The results and comments were utilized for drafting a model prototype.

Step 5.0 : Draft a Prototype Model

The researcher reviewed relevant knowledge and information in all the previous steps. In this step, the prototype of the WAW Instructional Model was drafted drawing on these theoretical and empirical data with a special attention to the theoretical knowledge in Step 1 and three experts' opinions and comments in Step 4.

Step 6.0 : Test a Prototype Model

In this step, the revised prototype underwent a developmental testing to estimate its efficiency. This efficiency testing consisted of three necessary steps: individual testing, small-group testing, and field testing. Each testing step required different numbers of participants with different levels of proficiency. The results and suggestions were utilized for revising and improving the model prototype.

Step 7.0 : Finalize a Prototype Model

The prototype was finally revised based on the testing results and comments obtained from each efficiency-testing step in Step 6. The prototype was finalized after the final revisions were made.

3.3.2 Evaluation Form

The evaluation form (Appendix B) was developed by the researcher. It was used by three ISD experts to evaluate the applicability of the WAW Instructional Model.

- **Construction**

The construction of this evaluation form adhered to the purposes of the study. The WAW Instructional Model consisted of necessary elements, logical phases, and detailed steps in designing and developing the WAW lessons. Using an evaluation form, three experts validated and evaluated the WAW Instructional Model to ensure its applicability. The evaluation form consisted of five items focusing on development

process, elements, characteristics, and usefulness. The experts provided opinions on each item on a 5-point rating scale of agreement.

- **Trustworthiness**

Before the evaluation form was implemented, content validity was established by the thesis advisor to ensure the inclusiveness of the essential aspects of the content being measured. The inclusion of the content was largely determined by the purposes of the research study. However, internal reliability could not be robustly estimated due to an insufficient number of respondents; only three experts were involved with this evaluation task.

3.3.3 Writing Pretest and Posttest

One writing test task (Appendix D) developed as an essay-writing pretest and posttest was designed to measure the students' ability to write academic writing. It was delivered online through Google Docs which allowed the students to easily type, edit, and format their essay before submission.

- **Construction**

The writing test was designed to measure the effectiveness of the WAW lessons on the students' writing achievement. The same version of the pretest and posttest was employed because of these following reasons. The students were required to write one academic essay that was intended to measure their understanding rather than their ability in memorizing factual information. Furthermore, since this writing task had no bearing on their current grades, it was thought that the students made their greatest attempts to complete it as per their understanding and knowledge at the times of writing. Finally, the students were not informed that the same version would be used, so it was believed that their pretest and posttest products reflected their actual performances.

The process of the test construction started with a test specification (Appendix C) that detailed test objectives and focused constructs. The learning goals and objectives of the Academic Writing course were utilized as the scope of the writing test task and constructs. In this writing test, the students were required to compose a discussion genre (two-sided arguments) of at least 300 words based on the given topic. The test time was three hours during which they were allowed to have a 10-minute break. Before writing, they were required to read two preselected texts that presented contrasting views on the theme of laptop use in class and write a discussion essay with a clear position integrating these source readings into argumentation.

- **Trustworthiness**

The writing test was evaluated and validated by two testing experts in terms of its usefulness, including construct validity, authenticity, and practicality. That is, it was considered as follows: 1) it reflected the goals of academic writing required in the present course (construct validity), 2) it responded to the students' needs to write in a realistic context in their immediate post-requisite courses (e.g., Research Skills, Independent Study) and professional academic discourses (authenticity), and 3) it could be validly employed to measure students' academic writing ability (practicality) (Weigle, 2002). To evaluate its usefulness, the two experts were provided with a sample writing test (Appendix D), a scoring rubric (Appendix G), a test specification (Appendix C), and an evaluation form (Appendix E). Some certain parts were revised according to their suggestions.

The two experts reported that the writing test corresponded to the learning objectives of the course and could be implemented to measure the students' writing performance due to its authenticity and relevance (Appendix F). However, they

suggested condensing and simplifying the two source readings whose ideas were used by the students to support their argument. They argued for two reasons. First, the two passages were too lengthy for a timed writing task, thus consuming much reading time. Second, the main purpose of the writing test was to examine how the students incorporated and presented source ideas in their argument, rather than measure their ability of comprehending a very long and complex text. The condensed versions of the reading passages were re-evaluated by the two experts.

3.3.4 Satisfaction Questionnaire

The satisfaction questionnaire (Appendix M) was developed to explore the students' satisfaction with the WAW lessons. It was an online survey created via Google Forms and written into two languages: English and Thai. The Thai-translated version was given to the students to avoid possible ambiguity and misunderstanding.

- **Construction**

The questionnaire had two main sections: computer and Internet use and learner satisfaction. In the first section, the respondents were required to provide information regarding language learning backgrounds and their experience in technology use. It consisted of closed-ended questions with options from which students were able to choose. There were 9 items in this section. In the second section, the respondents were asked to evaluate their degree of satisfaction toward using the WAW lessons. It contained a series of 25 statements to which the respondents had to select a degree of agreement on a 5-point rating scale. The nature of the rating scale was clearly explained to them for their full understanding. In addition, the respondents were required to provide relevant comments and suggestions in the open-ended section where they could generate more expansive responses.

This questionnaire was adapted from a multi-criteria evaluation of learner satisfaction by Shee and Wang (2008) and Wang (2003). The original version contained four dimensions: learner interface, learning community, system content, and personalization, comprising a total of 15 criteria. This multi-criteria instrument was adapted for two captivating reasons. First, it was developed based on learner perspectives empirically derived from students who engaged in online learning. Second, it contained criteria and dimensions that were associated with the required elements of an online support system as suggested by the principles of constructivist learning environments.

However, one dimension of "lesson design" and 10 criteria were added to the original version since there was no design-related dimension. This addition was based on two reasons. First, the purpose of the present study was to develop an instructional model to serve a teaching unit of academic writing. In the process, "design" was one of the most essential elements that needed to be assessed. Thus, it was important to know whether or not "lesson design" was useful and effective as perceived by the students. Second, the adapted version of the questionnaire investigated more detailed aspects of the WAW lessons. The respondents could respond to more discrete dimensions, which contributed to content validity. As a result, the final questionnaire consisted of 5 dimensions and 25 criteria.

- **Trustworthiness**

Before the questionnaire was administered online to the respondents in the research phase, the two-step measures were taken in sequence to establish validity and reliability. In the first step, it was validated by three experts who specialized in instructional design and technology-based instruction. They were requested to review

if the questionnaire questions were comprehensive enough to collect all the information needed to address the purposes of the study by means of Index of Item-Objective Congruence (IOC) value at 1.00 for each item (Appendix O). These results indicate that the questionnaire had a high validity of content and construct. In addition, the Thai-translated version of the questionnaire was validated in terms of clarity by two instructors of Thai language with more than 10 years' experience in tertiary-level teaching. Some parts were revised according to their comments and suggestions. In the second step, before the questionnaire was administered in the research phase, the field reliability test was conducted with 31 participants to enhance its internal reliability or result consistency. The obtained data were analyzed using SPSS to estimate coefficient alpha (Cronbach's alpha = α). The following rules of thumb (George & Mallery, 2003) (see Table 3.1) were applied to estimate the internal consistency of the questionnaires.

Table 3.1 Internal Consistency Reliability

Cronbach's alpha	Internal consistency
$\alpha \geq 0.9$	Excellent
$0.7 \leq \alpha < 0.9$	Good
$0.6 \leq \alpha < 0.7$	Acceptable
$0.5 \leq \alpha < 0.6$	Poor
$\alpha < 0.5$	Unacceptable

The internal consistency was used as a measure based on the correlation between different individual items on the same instrument and under the same dimension to gauge its internal reliability. The Cronbach's alpha coefficients' index of 25 items from the perceived value of 31 cases in the development phase and 33 cases in the research phase is illustrated in Table 3.2.

Table 3.2 Results of Cronbach's Alpha Coefficients (α) for Each Dimension of Satisfaction Questionnaires

Dimensions	Internal reliability (α)			
	Development (n = 31)	**Interpretation**	**Research (n = 33)**	**Interpretation**
Lesson design (5)*	.61	Acceptable	.79	Good
Learning content (5)	.61	Acceptable	.81	Good
Support system (5)	.76	Good	.83	Good
Learning community (5)	.77	Good	.78	Good
Personalization (5)	.89	Good	.80	Good
Total	**.88**	**Good**	**.93**	**Excellent**

*Number of question items in each dimension.

Table 3.2 shows that the total α score for the development phase was .88 and for the research phase was .93. For the development phase, all the α scores were higher than .60 and for the research phase, were higher than .70, which were considered to be acceptable. The higher levels of intra-dimension reliability ($\alpha \geq .80$) were observed in one dimension of "personalization" in the development phase and three dimensions of "learning content", "support system" and "personalization". Taken together, these results indicate a sufficient level of internal reliability among the 25 questionnaire items, suggesting that the questionnaire could be reliably implemented in the present study.

3.3.5 Semi-structured Interview

After the students had finished the treatment, the posttest and the questionnaire, the follow-up interviews (Appendix P) with 10 students were conducted to obtain more in-depth information of their satisfaction with the WAW lessons. These 10 students who were recruited based on their writing posttest scores were the 5 lowest and the 5 highest performing writers. The selection of these different achievement

groups allowed a diversity of perspectives to be explored. The interview protocol consisted of 8 open-ended questions with some sub-questions emerging during the interview.

The interview questions were translated into Thai language and then validated for their clarity by two native Thai instructors who taught Thai language in a university. To ensure clarity, the questions were pilot-tested with 3 students who were not included in the actual interviews. Since all the respondents speak Thai as their native language, the interviews were conducted in Thai. The reason for using Thai was in order to avoid ambiguity and create a relaxed atmosphere and "a situated friendship", thus putting the interviewees at ease and eliciting authentic responses (Douglas, 1985, p. 118). The interviews were organized at the researcher's office with each individual student and audio-recorded with his/her consent. It took 7-10 minutes for each person.

3.4 Procedures of Data Collection

The present research collected both types of quantitative and qualitative data. The data collection was divided into two main phases: Phase 1, Development and Phase 2, Research. The data-collecting procedure is illustrated in Figure 3.3.

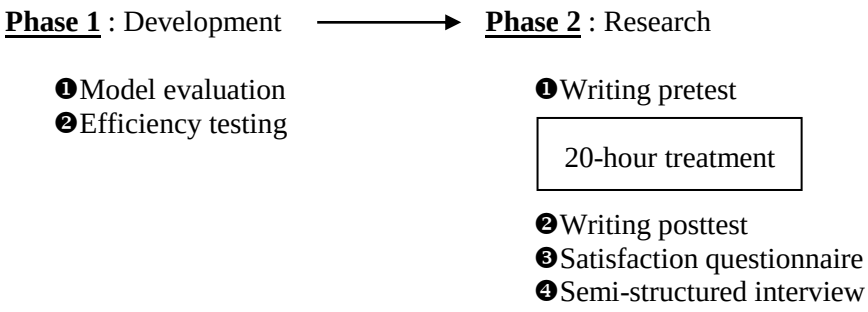


Figure 3.3 Procedures of Data Collection

In Phase 1, the WAW Instructional Model and WAW lessons were developed and evaluated respectively. There were two types of evaluation tools and two groups of people involved in the first phase. First, three experts were invited to validate and evaluate the WAW Instructional Model. They were provided with evaluation form developed by the researcher to evaluate its applicability. Then, the WAW lessons were tried out for 20 hours with a group of 31 students, involving three necessary steps as a means of efficiency testing: individual testing, small-group testing, and field testing. The results and feedback obtained from these evaluation activities served as a useful set of data for improving the lessons until the proposed 80/80 criterion was achieved.

In Phase 2, four types of instruments were employed for data collection. First, one timed writing task was implemented as a pretest and posttest to measure the students' writing achievement. The pretest was given to the students before the 20-hour treatment took place in the first week of the semester. After the treatment, the students were given the posttest that contained the same task. Second, they were required to fill out a questionnaire pertaining to their satisfaction with the WAW lessons. Finally, the 5 least successful and the 5 most successful students chosen based on their writing posttest scores were invited for semi-structured interviews which were individually conducted after they had finished the treatment, the posttest, and the questionnaire.

3.5 Data Analyses

Data analyses were performed by means of quantitative and qualitative analyses. Quantitative data were statistically analyzed using SPSS, whereas qualitative data were inductively analyzed to create categories and themes.

3.5.1 Evaluation Form

The completed evaluation forms were then quantitatively analyzed to calculate descriptive statistics, e.g. arithmetic mean ($\bar{x}$) and standard deviation (SD). The mean scores obtained from each question item were then interpreted to determine the degree of appropriateness on a 3-level scale adopted from Suppasetseree (2005, p.88).

Table 3.3 Interpretation of Mean Scores for Appropriateness

Means	Level of Appropriateness
3.68-5.00	Very appropriate
2.34-3.67	Appropriate
1.00-2.33	Not appropriate

3.5.2 WAW Lessons

The developmental testing of the developed WAW lessons was based on the E_1/E_2 formula[1] proposed by Brahmawong (2013). This developmental testing evaluated the efficiency of process and product. In the present study, it involved two main phases during the development phase and the research phase. These two phases were run to increase the efficiency of the WAW lessons. In practice, each efficiency-testing phase consists of three necessary steps: individual testing (n = 3), small-group testing (n = 6), and field testing (n = 22). The first two testing steps required equal numbers of students (from the least to the most) in each different level of proficiency (see Table 3.4). However, in the field testing, it was not feasible to recruit students equal in numbers in each level of proficiency due to the contextual constraints. In this case, 22 students were not categorized according to the level of proficiency. The

[1] E_1/E_2 model for developmental testing of media and multi-media instructional packages was originally developed in 1977 by Prof. Dr. Chaiyong Brahmawong at Faculty of Education, Chulalongkorn University.

numbers of students were different in each testing step. The students that participated in one testing step were excluded from the other two testing steps.

Table 3.4 Procedures of Efficiency Testing (n = 31)

Efficiency testing	Participants	Treatment length (h)
1. Individual	3 (H=1, M=1, L=1)	14
2. Small group	6 (H=2, M=2, L=2)	16
3. Field	22	20

The developmental testing was performed to ensure that the WAW lessons would benefit different numbers of learners at the same time and serve learners with a varying level of proficiency. In this case, based on their reported grades in the prerequisite writing course, Essay Writing, the participants were labeled as follows: A to B = high proficiency (H), C+ to C = mid proficiency (M), and D+ to D = low proficiency (L). During the testing process, the students were required to perform various activities, such as studying online lessons, working on exercises and assignments, and providing comments. The performance results and comments from a preceding step served as an empirical set of data to improve a subsequent step until the developed WAW lessons achieved the proposed 80/80 criterion which was the same across the three developmental testing steps. The efficiency designated with the 80/80 standard was statistically measured based on the E_1/E_2 formula as follows:

The formula for E_1 is as follows:

$$E_1 = \frac{\left(\frac{\sum x}{N}\right)}{A} \times 100$$

Here, E_1= The efficiency index for the process in terms of percentage score (%) from exercises

Σx = Summation of students' scores obtained from exercises.

A = The full score of exercises

N = The number of students in the sample

The formula for E_2 is as follows:

$$E_2 = \frac{\left(\frac{\sum f}{N}\right)}{B} X\ 100$$

Whereas, E_2 = The efficiency index for the product in terms of percentage score (%) from end-of-lesson tests.

Σf = Summation of students' scores obtained from end-of-lesson tests

B = The full score of end-of-lesson tests

N = The number of students in the sample

3.5.3 Writing Pretest and Posttest

Two methods of analysis were employed: quantitative and qualitative. While the quantitative evaluation by three trained raters focused on the overall purpose and impression of the students' essays, the qualitative analysis allowed a better understanding and thicker account of lexico-grammatical choices in the context of usage in their essays.

3.5.3.1 Quantitative Analysis

The scoring rubric employed in the study (Appendix G) was adapted from several authors (e.g., Hyland, 2003; Keck, 2006; Weigle & Paker, 2012) to create a new context-based rating scale that can lead to more valid outcomes of assessment (Weigle, 2002). Hyland's scoring rubric (2003) provides a useful example of an analytic scoring rubric that has four levels of achievement with numerical values and brief descriptors in each dimension. These important characteristics can provide a clear framework with not too many scales for independent raters. Yet, it is not intended for an integrated writing task.

Since one objective of students' writing was to integrate source ideas into their argument, one separate dimension "referencing" needed to be included in a new scoring rubric, concerning with students' ability to incorporate source texts in their academic prose. In this case, a scoring rubric developed by Weigle and Paker (2012) was considered more suitable as it was primarily designed to measure performance in integrated writing. In this version, however, the descriptors of the referencing dimension were intended for a relatively long integrated essay. Because of this constraint, four levels of attempt in paraphrasing suggested by Keck (2006) were chosen to include as four levels of mastery in the referencing category.

Using this scoring rubric, three raters, one of whom was the researcher, graded the students' writing scripts independently at our convenient time. We received our individual set of scoring rubrics, scoring forms, and hard copies of writing tests. Once we were finished grading, the obtained scores were collected and compared. At this point, some scoring discrepancies were consulted and original scores were adjusted upon our consensus so as to enhance inter-rater reliability. This

scoring consistency was estimated by Pearson's Correlation (r >.75) (Evans, 1996) since a Shapiro-Wilk's test of normality (p >.05) (Razali & Wah, 2011) showed that the pretest and posttest scores from three raters were approximately normally distributed. The relationship of the pretest and posttest scores given by three raters is reported in Table 3.5.

Table 3.5 Relationship of Scores Awarded by Three Raters in Pretest and Posttest

Raters	Pretest			Raters	Posttest		
	Rater1	**Rater2**	**Rater3**		**Rater1**	**Rater2**	**Rater3**
Rater1	-	.83*	.88*	**Rater1**	-	.83*	.85*
Rater2		-	.80*	**Rater2**		-	.79*
Rater3			-	**Rater3**			-

*p < .01 (2-tailed)

The correlation coefficients (r) for the pretest ranged from .80-.88 and for the posttest from .79-.85, which demonstrated a strong positive correlation in scoring across three raters (Johnson & Christensen, 2014). In both pretest and posttest essays, Rater 1 and Rater 3 were most likely to give consistent scores while Rater 2 and Rater 3 tended to score in a roughly different pattern. Overall, these results indicate that scoring by three raters were consistent and thus reliable, yielding an acceptable level of inter-rater reliability.

The scores obtained from three raters were then averaged and counted as each students' pretest and posttest scores. These two sets of mean scores were processed using a paired-samples *t*-test to determine a significant difference in score gains since these two assumptions are met: normal distribution of scores and homogeneity of variances (Brown, 1988). A Shapiro-Wilk's test of normality (p >.05) (Razali & Wah, 2011) showed that the pretest and posttest scores followed an

approximately normal distribution. A Levene's test ($p < .05$) showed that the variances of the pretest and posttest scores were not equal, which violated the second assumption. However, Brown (1988) notes that this violation has minimal effect on the results since the sample sizes are equal. This means that a paired-samples *t*-test was an appropriate statistical method for analyzing the differences in the pretest and posttest scores.

3.5.3.2 Qualitative Analysis

The fine-grained analysis of the pretest and posttest essays was also performed by the researcher to better understand how the students deployed linguistic or lexico-grammatical features for constructing rhetorical effects in their texts, such as enacting interaction with readers, acknowledging possible views, revealing and masking personal voice or subjectivity, reducing criticism or objection, defending a position against criticism, expressing and removing personal stance, emphasizing and obscuring responsibility, increasing argument credibility, and enhancing readers' understanding. To achieve this goal, a functional approach inspired by SFL (Halliday, 1994; Halliday & Matthiessen, 2004; Martin & Rothery, 1993) was employed as an analytic framework that attends to three strands of meaning: ideational meaning, interpersonal meaning, and textual meaning. They are motivated by needs respectively to represent experience, enact interaction with readers, and create a cohesive and coherent discourse. In SFL, Fontaine (2013) and Halliday (1994) point out that these tripartite meanings are simultaneously constructed. Let's consider these examples:

(1) Facebook **distracts** students from their lessons.
(2) Facebook **may** distract students from their lessons.
(3) **I think** that Facebook distracts students from their lessons.
(4) Students **are distracted** from their lessons by Facebook.

It can be seen that these four clauses express the same ideational meaning, except that the writer explicitly projects himself/herself through a first-person pronoun “I” in (3), which is deemed to be overtly subjective and evaluative. In fact, they are different from each other with respect to interpersonal meaning and textual meaning. In terms of interpersonal meaning, (1) presents ideational meaning as a factual statement, thus closing off potential responses from readers (Hyland, 2008), whereas (2) includes a modal verb “may” to hedge a statement, thereby opening up a space for alternative views and engaging readers (Martin & White, 2005). In terms of textual meaning, (1) and (2) foreground “Facebook” while (3) emphasizes “I”. In (4), “students” is fronted through a passive structure. Despite the fact that ideational meaning is similarly expressed, it can be presented in different ways, depending largely on a social context (e.g., writer, reader, purpose, genre) that constrains grammatical and lexical choices.

The analysis was carried out in three necessary steps. The initial step involved reading and re-reading the pretest and posttest texts clause by clause to manually identify frequently occurring lexico-grammatical forms and structures that expressed rhetorical functions. To supplement and confirm the manual findings, the second step entailed using AntConc 3.4.4w (Anthony, 2016), a freely available concordance program, to electrically identify frequent content words and collocations and concordance the targeted items of the students’ common choices through the manually identified words and phrases as the search items (e.g., may, likely, I think, It is possible). Given that rhetorical functions operate over a longer stretch of discourse (Charles, 2007), they were considered in an extended context while unwanted entries

were excluded. It should be noted at this point that since the central interest was in a semantic rather than grammatical orientation, misspelled words (e.g., fond-found) and grammatical errors (e.g., s-v agreement) were counted. The final step entailed finalizing and counting the frequency of occurrences in each set of data so as to determine the difference between the two texts of pretest and posttest.

3.5.4 Satisfaction Questionnaire

The data obtained from the questionnaires were utilized to measure the student's level of satisfaction with the WAW lessons developed for the present study. These quantitative data were computed statistically using SPSS to calculate arithmetic mean ($\bar{x}$) and standard deviation (SD). These descriptive statistics were useful statistical techniques used to summarize and describe a set of empirical data obtained from the study sample. The analysis was performed at the levels of criteria (items) and dimensions as a means of measuring satisfaction. The overall level of satisfaction was calculated for all individual criteria and dimensions in the questionnaires across the participants in the study. The resultant mean scores of these criteria and dimensions were interpreted to determine the level of learner satisfaction on a 5-level scale. The criterion was applied with mean scores interpreted as in Table 3.6.

Table 3.6 Interpretation of Mean Scores for Satisfaction

Means	Level of satisfaction
4.21-5.00	Very satisfied
3.41-4.20	Satisfied
2.61-3.40	Moderately satisfied
1.81-2.60	Dissatisfied
1.00-1.80	Very dissatisfied

3.5.5 Semi-structured Interview

The interview data were qualitatively analyzed by means of content analysis in an attempt to identify words or responses (e.g., like, happy, anxious, difficult, useful, sufficient) that concerned students' evaluation of lesson-related attributes. Evaluation was conceptualized as an expression of feelings, attitudes, or judgments (Martin & White, 2005). This approach to content analysis involved three main steps: coding, categorizing, and summarizing. Firstly, the researcher began the analysis of content by thoroughly reading transcriptions to identify meaning units. Then, he assigned codes that contributed to the development of categories and scrutinized obtained codes for commonalities. Secondly, the researcher placed all codes with the same properties together to create categories. Then, he explored and determined the relationships across categories, so that themes (central categories) were identified. These central categories were systematically related to other sub-categories. Thirdly, themes or concepts derived from a coding process were summarized and presented as a narrative style supported with respondents' voices.

Table 3.7 Summary of Instruments and Data Analysis in Relation to Research Questions

Research questions	Instruments	Data analyses
1. What are the elements and logical steps of developing a WordPress-based Academic Writing Instructional Model?	• Evaluation form	• Descriptive statistics (e.g., $\bar{x}$, SD)
2. What is the efficiency of WordPress-based Academic Writing lessons based on the 80/80 standard?	• WordPress-based Academic Writing (WAW) lessons	• 80/80 standard
3. What is the effectiveness of WordPress-based Academic Writing lessons on the students' writing achievement?	• Writing pretest and posttest	• Descriptive statistics (e.g., $\bar{x}$, SD) • Paired-samples *t*-test

Research questions	Instruments	Data analyses
		• Qualitative analysis of language use
4. What are the levels of the students' satisfaction with WordPress-based Academic Writing lessons?	• Satisfaction Questionnaire • Semi-structured interview	• Descriptive statistics • Content analysis

3.6 Summary

This chapter presents the research methodology employed in the present study, consisting of the research design, research participants, instrument construction and validation, data-gathering procedures, and data analyses. The results of both qualitative and quantitative data will be reported and discussed in the next chapter.

CHAPTER 4

RESULTS AND DISCUSSION

This chapter is organized in two main sections. The first section presents the results of the study in relation to the four research questions. The second section discusses the results reported in the first section which is also structured on the basis of the research questions.

4.1 Results

4.1.1 Development of the WAW Instructional Model

The first research question "What are the elements and logical steps of developing a WordPress-based Academic Writing Instructional Model?" intended to examine the usefulness and applicability of the WAW Instructional Model which was reviewed and evaluated by three experts. Using an evaluation form designed by the researcher, they were required to select a degree of agreement on five closed-ended questions with a 5-point rating scale (5 = strongly agree, 4 = agree, 3 = neutral, 2 = disagree, 1 = strongly disagree) (see Appendix B).

The completed evaluation forms were then quantitatively analyzed to calculate descriptive statistics, e.g. arithmetic mean ($\bar{x}$) and standard deviation (SD). The mean scores obtained from each question item were then interpreted to determine the degree of appropriateness on a 3-level scale adopted from Suppasetseree (2005, p.88):1.00-

2.33 = not appropriate, 2.34-3.67 = appropriate, and 3.68-5.00 = very appropriate. The results of the evaluation are presented in Table 4.1.

Table 4.1 Evaluation Results of the WAW Instructional Model

Statements	$\bar{X}$	SD
1. Non-linear and recursive design process	4.33	0.58
2. Major elements (phases)		
2.1 Analyze	4.67	0.58
2.2 Design	4.67	0.58
2.3 Develop	4.67	0.58
2.4 Assess	4.67	0.58
2.5 Implement	4.67	0.58
2.6 Evaluate	4.67	0.58
3. Logical phases and steps	4.33	0.58
4. Fulfilling the purpose of the study	4.33	0.58
5. Serving as a guiding model for other writing lessons	4.33	0.58
Total	**4.53**	**0.58**

Table 4.1 shows that on average, the WAW Instructional Model was evaluated as very appropriate ($\bar{x}$ =4.53, SD=0.58). When considered discretely, it can be seen that all the core individual elements (e.g., Analyze, Design, Develop, Assess, Implement, Evaluate) were very appropriate ($\bar{x}$ =4.67, SD=0.58), receiving the equal and highest means. Another notable result is that the other aspects were equal in mean scores which were interpreted as very appropriate ($\bar{x}$ =4.33, SD=0.58). That is, the three experts agreed that the WAW Instructional Model was non-linear and recursive, displayed a clear relationship, fulfilled the purpose of the study, and could serve as a guiding model for other writing courses. These results suggest that the WAW Instructional Model could be implemented in the current study as a viable conceptual framework for developing the WAW lessons.

4.1.2 Efficiency of the WAW Lessons

The second research question "What is the efficiency of WordPress-based Academic Writing lessons based on the 80/80 standard?" intended to measure the efficiency of the WAW lessons developed for the present study. The developed WAW lessons were implemented in two main phases: development phase and research phase. The following section reports the results of lesson efficiency (see also Appendix I) in the development phase and the research phase.

4.1.2.1 Development Phase

The development phase consists of efficiency-testing steps: individual testing, small-group testing, and field testing. The efficiency results in each step are presented as follows:

a. Individual Testing

The developed WAW lessons were initially implemented with three students with three different levels of proficiency (hid, mid, low). The efficiency results of the process or exercises (E_1) and product or end-of-lesson tests (E_2) for the individual testing are presented in Table 4.2.

Table 4.2 Students' E_1/E_2 Scores of Individual Testing in Percentage (n=3)

Lesson	Efficiency (%)	
	E_1	E_2
Lesson 1 : Structure of discussion	75.17	72.22
Lesson 2 : Language choices	69.44	68.89
Lesson 3 : Academic argument	78.33	76.67
Lesson 4 : Use of source texts	67.78	66.67

Table 4.2 shows the percentage scores of exercises and end-of-lesson tests achieved by the students in each lesson during the individual testing. According to the table, the students achieved the highest total scores on Lesson 3, with the E_1/E_2 scores

of 78.33/76.67, closely followed by 75.17/72.22 for Lesson 1. As can be seen, for every lesson, they performed slightly better on the exercises than the end-of-lesson tests, and their E_1/E_2 scores for Lesson 1 and Lesson 3 were higher than those for Lesson 2 and Lesson 4. However, the achieved E_1/E_2 scores for each lesson were lower than the proposed 80/80 criterion.

These results indicated that each lesson needed to be revised to accommodate the students' learning. This initial revision was undertaken in response to each individual student's suggestions and comments on three main aspects: support system, learning content, and exercises and end-of-lesson tests as summarized in Table 4.3. However, only important issues are addressed in this section.

Table 4.3 Comments, Suggestions, and Revisions

Aspect	Comment/Suggestion	Revision
Support system	1. The sidebar links or menus should be provided to enhance navigation. 2. The lesson links and sidebar links are not consistent in terms of color. 3. The visited links should be in a different color.	- Create the right sidebar menus to increase the ease of navigation. - Make the link texts consistent throughout the support system. - Differentiate the colors of unvisited and already visited links.
Learning content	1. The content is too lengthy and time-consuming to read, which is not suitable for online lessons. 2. The content contains unfamiliar words and technical terms that can prevent understanding. 3. In some parts, there should be more examples to enhance understanding (e.g., 2.2.1 Addition, 2.3.2 Passive structures, 2.3.2 Impersonal pronoun "It", 2.5 Modality, 4.3.1 With reporting verbs, 4.3.3 Forms of citations, 4.3.4 Tenses in citations).	- Condense the content by removing minor details. - Add in-text definitions and explanations. - Include more authentic examples to illustrate the concepts. - Summarize the concepts in forms of tables and diagrams.

Aspect	Comment/Suggestion	Revision
	4. There should be tables and diagrams to summarize the concepts (e.g., 1.2.3 Generic structure, 2.1 Concept of functional grammar, 2.2 Connectives (linking words and phrases, 3.3 Core elements of argument, 4.3.1 With reporting verbs), 4.3.3 Forms of citations)	
Exercises/ End-of-lesson tests	1. The instructions throughout are too lengthy and should be in summary forms. 2. There should not be too many questions in each exercise in all lessons. 3. The end-of-lesson tests should not be combined in a way that requires completion at a time. 4. Hints should be provided in some exercises. 5. Immediate feedback and scores should be reported upon submission. 6. There are too many distractors in Exercises (Reporting verbs 1 and 2). 7. Some question items in exercises and end-of-lesson tests are too lengthy, thus being difficult (Tenses in citations, integrating sources)	- Re-write the instructions by removing unnecessary information. - Reduce the number of question items to 5 for exercises that require considerable time - Separate end-of-lesson tests into different sections according to topics to allow pausing between topics. - Activate a feedback function to allow performance results upon completion. - Reduce the number of distractors from 7 to 4. - Replace some items with shorter and easier questions.

Table 4.3 shows that the students reported facing some difficulties and problems in various issues which could hinder their learning as evidenced by their relatively low scores. The first aspect involved the user-friendly interface and operation of the support system powered by WordPress. The students suggested that the right sidebar menus should be installed and consistent, so that they could access materials more easily and quickly without frustration, possibly with just one click to a desired page. In addition, during their navigation, they found that WordPress operated

unstably and took too long time to load a page due to attacks by malwares and viruses, thus causing unstable operation and slow loading (“Sometimes, I can't access the website.”). To solve these problems, a security plugin was installed to protect WordPress from such malicious programs.

The second aspect included learning content and its presentation. The students suggested adjusting various issues, particularly those that influenced their understanding. They reported that some content was too lengthy and contained too difficult terms (“I'm not familiar with many technical terms.”), and some explained that “concise content will save my time for reading on screen”. They also suggested including in-text definitions or explanations for technical words that could prevent them from fully understanding. In response to their particular needs, some content was condensed by removing minor details, and some unfamiliar words were defined in English as a hover text. In addition, the students required more examples and visual presentations of content (e.g., tables, diagrams) to illustrate the concepts and relationship between them, thus reinforcing and deepening their understanding (“This diagram can help me understand textual cohesion better.”).

The final aspect entailed exercises and end-of-lesson tests (or tasks for both). The students complained that there were too many tasks in each execution and too many questions in each task (“It takes too much time for me to complete each task at a time.”). They suggested separating each task according to its individual topic and including five questions for tasks that required considerable reading time, so that they could have a break and relax before continuing another task. Some other reported factors responsible for their low achievement were too many choices and lengthy questions in some tasks, especially those in Lessons 2 and 4 (“I spent much time, but I

still got them wrong."), leading to adjustment and replacement for less difficult tasks. Furthermore, the students suggested providing useful hints in some exercises which could assist them in answering questions when they were not sure of their answer. In fact, they were encouraged to consult the provided hints after they failed to solve a problem at their first attempt. After the lessons were revised, they were implemented in the small-group testing.

b. Small-group Testing

The revised WAW lessons were then implemented with a different group of six students with three different levels of proficiency (high, mid, low) to ascertain the efficiency of the process (E_1) and product (E_2) (see Table 4.4).

Table 4.4 Students' E_1/E_2 Scores of Small-group Testing in Percentage (n=6)

Lesson	Efficiency (%)	
	E_1	E_2
Lesson 1 : Structure of discussion	78.13	75.00
Lesson 2 : Language choices	73.61	71.11
Lesson 3 : Academic argument	79.17	78.33
Lesson 4 : Use of source texts	72.22	70.00

The overall performance trend was similar, with a minimal increase from the individual testing step. This tendency was significant for Lesson 4 and Lesson 2, respectively, in comparison with a smaller percentage of Lesson 1 and Lesson 3. Notably, the students scored slightly higher on the exercises than the end-of-lesson tests for every lesson, and their obtained E_1/E_2 scores for Lesson 1 and Lesson 3 demonstrated a similar pattern of achievement, as did those for Lesson 2 and Lesson 4. Despite the increase, the E_1/E_2 scores for each lesson did not achieve the proposed 80/80 criterion.

The students' performance and feedback necessitated another round of revision for increased efficiency. Based on their achievement scores, Lesson 2 and Lesson 4 required substantial adjustment and improvement as shown in Table 4.5

Table 4.5 Comments, Suggestions, and Revisions

Aspect	Comment/Suggestion	Revision
Learning content	1. Some writing-related terms are difficult (e.g., authorial voice, personal stance, agency, authoritative, rhetorical, point of view, perspective, material, plagiarism, patchwriting, grounds). 2. More useful words or phrases for qualifying claims are needed in Lesson 3 (3.5 Language for qualifying claims). 3. More examples of authentic analysis (or commentary) are needed in Lesson 3 (3.6 Model arguments).	- Provide in-text definitions of writing-related terms both in Thai and English to increase students' understanding. - Add useful words for qualifying or moderating claims. - Add authentic examples of writers' own analysis or commentary.
Exercises/End-of-lesson tests	1. There is a mistake in one exercise item in Lesson 2 (Author pronoun 1, Item 2). 2. There should be only 4 distractors in one exercise (Author pronoun 2) and one end-of-lesson test (Author pronoun) in Lesson 2. 3. More useful hints should be provided in exercises in Lesson 2 (*It*-clause 2, Author pronoun 2) and exercises in Lesson 4 (Reporting verb 2). 4. Most questions in both exercises (Paraphrasing 1, Paraphrasing 2) and end-of-lesson tests (Paraphrasing, Integrating sources) are too long and complex in Lesson 4.	- Correct flawed questions and simplify difficult questions. - Provide useful hints to assist in answering questions. - Replace difficult questions with easier ones.

Table 4.5 illustrates that there were two main aspects that still needed to be revised and improved; that is, learning content and exercises and end-of-lesson tests.

The students suggested explaining technical terms (e.g., authorial voice, agency, personal stance, rhetorical, point of view, material, patchwriting, grounds) since they were repeatedly mentioned throughout the lessons. For example, “rhetorical” refers to “related to the art of written communication or the structure of argument intended to persuade and influence readers”. They also suggested including useful phrases for qualifying arguments for rhetorical functions (e.g., expressing tentativeness, expressing certainty, softening generalization, obscuring subjectivity) and authentic examples of commentary or analysis (e.g., evaluation, interpretation, implication, generalization) in Lesson 3. They believed that “more examples will make me understand better”. Most examples were authentic excerpts derived from published articles.

In terms of exercises and end-of-lesson tests, more revisions were performed in Lesson 2 and Lesson 4. First, one student reported one ambiguous item which was discussed with her, and then we decided to replace it with a new question. Second, most students discovered that five responses were too challenging and suggested reducing to four choices as a convention of testing. Third, they requested more useful hints in some exercises. They argued that some given hints could be helpful for solving difficult questions, thus increasing their awareness and in turn their understanding. Finally, most students reported that most questions in both exercises and end-of-lesson tests were too lengthy and complex. The difficulty was evidenced by their poor performance; some of them achieved only 1-2 out of five points while others missed them all, despite several attempts. As a consequence, adjustments were undertaken. For some questions that most students could not solve, they were revised using more simple language, and their distractors were made less plausible.

Meanwhile, some lengthy premises reported by most students were substituted with shorter questions. The revised questions were validated by two colleagues, and the students were asked to solve them again. The questions that could be solved by 3-6 students were not further adjusted. The lessons revised in the small-group testing step were re-implemented in the field testing step.

c. Field Testing

The field testing was conducted with 22 mixed-ability students, a different group of participants from the previous testing steps. The efficiency results of the process (E_1) and product (E_2) are reported in Table 4.6.

Table 4.6 Students' E_1/E_2 Scores of Field Testing in Percentage (n=22)

Lesson	Efficiency (%)	
	E_1	E_2
Lesson 1 : Structure of discussion	81.82	80.30
Lesson 2 : Language choices	81.21	80.30
Lesson 3 : Academic argument	82.05	81.82
Lesson 4 : Use of source texts	81.82	80.91

As Table 4.6 shows, the students' scores illustrated a similar pattern of achievement. The highest percentage was observed in Lesson 3, accounting for 82.05% for the exercises (E_1) and 81.82% for the end-of-lesson tests (E_2). The notable result is that the students worked slightly better on the exercises than the end-of-lesson tests. Generally speaking, their achieved E_1/E_2 scores reached the proposed 80/80 standard, with a roughly higher percentage for every lesson. These results suggest that the WAW lessons were efficient and ready for a full-scale use in the research phase.

4.1.2.2 Research Phase

The revised WAW lessons were fully implemented with 33 students in the research phase after they had achieved the 80/80 criterion in the development phase. The efficiency index for the product (E_1) and the process (E_2) is shown in Table 4.7.

Table 4.7 Students' E_1/E_2 scores in Percentage in Research Phase (n=33)

Lesson	Efficiency (%)	
	E_1	E_2
Lesson 1 : Structure of discussion	82.01	81.13
Lesson 2 : Language choices	82.22	81.01
Lesson 3 : Academic argument	82.58	82.12
Lesson 4 : Use of source texts	82.02	81.01

Table 4.7 shows that the E_1/E_2 scores for every lesson met the proposed 80/80 standard in the research phase. It can be seen that the E_1/E_2 scores for each individual lesson were slightly higher than 80 percent. Specifically, the E_1 scores were slightly higher than the E_2 scores for every lesson, meaning that the students performed better on the exercises than the end-of-lesson tests. The results suggest that the WAW lessons were efficient for implementation.

4.1.3 Writing Achievements

The results of the student's writing ability aimed to answer the third research question “What is the effectiveness of WordPress-based Academic Writing lessons on the students' writing achievement?”. This section presents both quantitative and qualitative results of the students' writing performance.

4.1.3.1 Quantitative Results

The quantitative results are based on the scores awarded by three raters who graded the overall impression of the students' essays with a specific focus on four constructs: content, organization, language, and reference.

a. Overall Writing Achievements

To measure the students' writing achievements, they were required to compose one discussion essay as their writing pretest and posttest. The pretest and posttest mean scores were statistically compared to determine whether the students improved their academic writing after attending the treatment. Table 4.8 reports the difference between the pretest and posttest scores.

Table 4.8 Results of Overall Writing Achievements in Pretest and Posttest

Writing Test	n	$\bar{x}$	SD	MD	*t*	df	*p*
Pretest	33	24.89	8.28	35.88	17.34	32	.00*
Posttest	33	60.77	11.80				

*$p < .01$ (2-tailed)

The results in Table 4.8 illustrate that the students performed significantly better in their posttest than their pretest ($t(32) = 17.34$, $p < .01$). The mean difference (MD) was 35.88, with a considerable increase of mean scores in the posttest. The standard deviation (SD) showed that the pretest scores were more tightly grouped than the posttest scores. This dispersion indicated that the students' posttest scores appeared to be more heterogeneous than their pretest scores. Taken all together, this performance demonstrates that the students' academic writing improved significantly over time.

b. Domain-specific Writing Achievements

The three raters were requested to grade each domain of the pretest and posttest essays on a scale of 100 scores distributed to content (40 points), organization (20 points), language (20 points), and reference (20 points). The domain means of the

pretest and posttest essays were compared to track the students' writing improvement. The *t*-test results of each aspect are presented in Table 4.9.

Table 4.9 Results of Writing Achievements by Domain in Pretest and Posttest

Domain	Writing Test	n	$\bar{x}$	SD	MD	*t*	df	*p*
Content	Pretest	33	8.86	3.65	15.45	14.67	32	.00*
	Posttest	33	24.31	5.53				
Organization	Pretest	33	6.74	2.84	8.37	16.77	32	.00*
	Posttest	33	15.11	1.82				
Language	Pretest	33	5.32	2.43	5.96	13.97	32	.00*
	Posttest	33	11.28	1.63				
Reference	Pretest	33	3.97	3.09	6.09	12.07	32	.00*
	Posttest	33	10.06	1.52				

*$p < .01$ (2-tailed)

The results show that there was a significant difference ($p<.01$) in each specific domain between the pretest and posttest essays. The students' writing performance improved significantly with a substantial increase of mean scores for every focused aspect. The lowest means for "reference" were observed both in the pretest and the posttest. The standard deviation (SD) indicated that the posttest scores for "organization", "language", and "reference" were more homogenous than the pretest scores while the pretest and posttest scores for "content" revealed a higher level of heterogeneity.

4.1.3.2 Qualitative Results

This section reports on a follow-up qualitative analysis of the students' general textual features and in particular lexico-grammatical features that contributed to rhetorical functions in the context of usage. It is useful to note that the analysis of the students' essays revealed different types of mechanical and grammatical errors made by the students (e.g., misspellings, s-v agreement, parts of speech, prepositions, singular/plural forms, articles). In the excerpts, these minor textual errors which were

observed not to influence rhetorical functions were marked [ ] for correction, addition, and clarification, and three dots (...) indicated that irrelevant and unnecessary information was removed.

a. General Textual Features

This section presents the general information on the students' written texts, the elements of the arguments, and the integration of source information.

- Written Texts

The prompt of the writing task stressed the students' needs to write a discussion essay on the theme of laptop use in class. This essay required them to explore the issue from two perspectives. Table 4.10 summarizes the genres and features of academic texts produced by 33 students in their pretest and posttest.

Table 4.10 Descriptive Data of Students' Texts (n=33)

Writing Test	Genres		Total		Average	
	Exposition	Discussion	Words	Para.	Words	Para.
Pretest	10	23	9,411	143	285.18	4.33
Posttest	-	33	13,695	200	415.00	6.06

Despite the fact that the students were required to produce a discussion essay, 10 of them structured their texts as exposition genres that dealt with only one point of view in the pretest. In the posttest, however, all of them composed discussion essays, successfully meeting the demands of the task prompt. Obviously, the students developed a longer stretch of written texts a total of 13,695 words and 200 paragraphs in the posttest, compared to 9,411 words and 143 paragraphs in the pretest (see Appendix K and Appendix L for some sample pretest and posttest texts).

- Elements of Arguments

The task prompt demanded the students to produce a discussion essay in which they had to integrate source ideas to support and justify their argument and declare a clear position on the issue. Table 4.11 summarizes the elements of arguments between the pretest and posttest texts (see Appendix K and Appendix L for some sample pretest and posttest texts).

Table 4.11 Descriptive Data of Students' Arguments

Writing Test	Major Claims		Minor Claims	Grounds	Position	
	Yes	No			Clear	Not Clear
Pretest	17	16	48	27	26	7
Posttest	33	-	115	118	30	3

The students' pretest and posttest texts showed a discernable difference in their arguments. In fact, they performed better on their posttest by developing more extended arguments with a greater number of major claims and minor claims. Below are one student's pretest (1) and posttest (2) texts whose major claims are **bold** and minor claims are underlined.

> (1) Nowadays, technology plays such an important role in human life, especially, in term of education. Laptop is one of new technologies used in education institutions. **It is considered as a useful learning technology. Nevertheless, there are many people strongly disagreeing with that. It is because of these following reasons.**
>
> Laptop can affect students' learning in negative side since it leads students to not pay attention in the class. When students use laptops in the class, they can access to social networking easily, like Facebook, Line, Instagram, and so on and so forth. Moreover, based on Tal Gross's research (2015), using laptop in the class also distracts other students in the class by its noise. Not only does it make other students feel annoyed, but it also makes the learning atmosphere very boring.
>
> On the other hand, laptops are greatly useful for students' learning and convenient for accessing the information. Students can easily access to a large number of learning sources for example, if they want to know some

lessons, they can google on internet and it is absolutely faster than searching in the school library. While learning, they can find the answers which might be better than the one replied from their teachers.

In summary, in my opinion, laptop is numerously advantageous for education because its positives outweigh its negatives. It is vital that we, as the new generation, should follow the new technology useful for our daily lives. How harmful using laptop is depends on the way we use it. I strongly believe that we are critical enough to choose using positive side.

(2) Laptops are the new technology that plays so important a role in education nowadays. They facilitate students a lot to be able to access the wide information and any learning sources. **Although laptops have numerous advantages for students, some people think that laptops can have a negative impact on students' learning. On the other hand, others believe that laptops can be a good learning tool for students.**

The first reason to support that laptops can be harmful for students is students do not try to use their own capacity to think and find the answers. According to a research team in Canada, it is found that using laptops in the class doesn't help students learn deeply. Since most students can type very quickly, laptops encourage them to copy down nearly everything said in the classroom. But when students stare at the screen of their laptops, something is lost (Gross, 2015).

Furthermore, students don't pay any attention in the class since the can easily access to social networking sites, such as Facebook, Line, and Instagram. Teachers might not be able to perceive when students are on social network while learning. This can have an effect on students' learning performance.

However, laptops provide a number of advantages for students' learning since people can create many useful learning ways by means of using laptops, such as a student response system called 'LectureTools' and developed by Professor Samson Perry (Fried, 2008). It allows students to have some spaces to directly take notes on lecture slides and chat with their instructor and peers. This makes student feel more active and engaged, compared with student not using this system.

Moreover, many students prefer using laptops to search the information and access learning sources because it is faster, easier and more comfortable than searching in school library. According to the study of Miri Barak, it is shown that by using laptops, students are able to learn with online by themselves, and they can quickly get some assistance through online network form their teachers and peers when they need to solve any problems (Friend, 2008).

> In conclusion, laptops provide many benefits for learning of students in these days. Educational system should be up to date. Therefore, as discussed above, using laptops in the classroom has its positives outweigh its negatives.

It is very notable that the students drew on source ideas as grounds which increased significantly in the posttest as they developed more claims and evidence to extend their argument, whereas in the pretest many of them used source voices as points for expressing their opinions (3), rather than evidence for substantiating their arguments (4).

> (3) Carrie Fried told that "Laptops can actually increase students' engagement, attentiveness, participation, and learning." I agree that passage because these students more pay attention with their laptops, on the other hand it has bad result more than advantage so the main result is, it impact to their eyes. When the students look at their laptops for an hours every day, the students might their short-sighted, it is the worst consequence so maybe it is good some part but not comparable with the disadvantage. (Pre12)

> (4) In addition, students can study from online websites on laptops to solve a problem with friends in their classroom. A study [into students' laptop use] by Miri Barak suggests that "laptops enable students to study more online by themselves and get a quick assistance from their instructor and peers" (Fried, 2008). Laptops can increase reaction and response between teachers and students so laptops are used in some college classroom like it is important to learning in self-learning and better [than] the traditional studying. (Post12)

In terms of their personal stances, 30 students stated a clear position in their posttest while 26 students achieved this aspect in their pretest. The students' position could be observed especially in their essay introduction. The introductions below were developed by the same student, but the position of the first one (5) was not stated as clearly as that of the second one (6).

> (5) Technology is very important and necessary.... It's like a part of our life and it makes our life easier and more convenient than before. There are many type[s] of technology in a form of devices, such as smart phone,

> smart watch, tablet and laptop. Now, laptop becomes [a] popular device. Some researchers found that laptop is a beneficial device, but some are not. (Pre5)
>
> (6) Portable computer (laptop) is a small computer, lightweight, and easy to move. It also saves space, money, and time. Nowadays, laptops are gaining popularity due to [their lower] prices than in the past. Some people believe that laptops can be a good learning tool for students. Others think that laptops can have a negative impact on students' learning. **This paper examines the advantages and disadvantages of laptops.** (Post5)

- Attribution to Sources

The students were required to attribute to source ideas from the pre-selected readings to increase the credibility and persuasiveness of their arguments. The reference to sources was analyzed based on Swales' (2001) forms of citations: integral and non-integral. Integral citation places a cited source as an element of sentences (e.g., According to Fried (2008), Fried (2008) argues that...), whereas non-integral citation places a cited source in parentheses (e.g., (Fried, 2008)). The students' integration of source ideas is presented in Table 4.12.

Table 4.12 Forms of Citations

Writing Test	Citations	
	Integral	**Non-integral**
Pretest	27	-
Posttest	44	74

The students employed considerably different strategies in integrating other authors' ideas into their pretest and posttest arguments. In the pretest, they used a limited range of integral citations basically through prepositional phrases (e.g., according to, based on, from) and a few reporting verbs (e.g., said, told) which were not typical of academic writing. These formulations focused on the authors rather than their ideas. In the posttest, by contrast, they drew on a broader range of integral

citations through a variety of reporting verbs. Interestingly, they placed more emphasis on the reported ideas as evidenced by the greater use of non-integral citations while this form of citation was lacking in the pretest.

(7) **According to Tal Gross 2015**, ...researchers have confirmed that laptop may do more harm than good for student[s]. (Pre5, Integral) (Correction: According to Gross (2015), ...)

(8) **Carrie Fried told** that laptops can distract both students and nearby classmates. (Pre1, Integral) (Correction: Fried (2008) states that...)

(9) **According to Fried (2008),** many students think that laptops have many benefits for their self-learning.... (Post9, Integral)

(10) It[laptop] does not only distract the students who use them, but also their classmates **(Gross, 2015)**. (Post3, Non-integral)

b. Lexico-grammatical Features

This section reports on a fine-grained analysis of the students' frequent choices of lexico-grammatical features between their pretest and posttest essays that were functional for creating three strands of meaning: ideational meaning, interpersonal meaning, and textual meaning. However, this classification of lexico-grammatical features identified here did not imply rigid divisions in terms of meanings they expressed, but they complemented each other in a variety of ways to contribute to certain rhetorical functions.

- Content Words

The students' choices of vocabulary displayed their ability and knowledge to adopt field-specific lexis as a resource for realizing ideational content in their text

that represented their experience and understanding. Table 4.13 presents the top five content words.

Table 4.13 Total Occurrences of Top Five Content Words

No.	Pretest			Posttest		
	Words	**Frequency**	**%**	**Words**	**Frequency**	**%**
1	laptop	388	4.12	student	625	4.56
2	student	335	3.56	laptop	572	4.18
3	use	257	2.73	use	361	2.64
4	learn	137	1.46	learn	243	1.77
5	class	73	0.78	classroom	96	0.70

The most frequent content words, reflecting the major themes of the students' experience, were not markedly different in the pretest and posttest texts. It can be noticed that the frequency of occurrences varied according to the development of the texts. Essentially, through these lexical choices, the students foregrounded “laptop” and “student” as the main participating entities (Participant). In terms of processes (kinds of events being described), in most cases, “student” was represented in the roles of doing--”use” and “learn” (Actor) while “laptop” was expressed as being affected by the action (Goal). These processes took place “in class” which was presented interchangeably with “classroom” (Location). This situation was normalized as follows:

(11) But some **student**[s] think that **laptops** can have a negative impact on [their] learning. (Pre8)

(12) Furthermore, **using laptop in class** does not improve the deep **learning** of **students.** (Pre14)

(13) It is possible that **laptops** will be the most important **learning** device in the future. (Post2)

(14) Likewise, in the **classroom**, **students** can **use** [a] **laptop** when they **learn** in order to get new ideas.... (Post7)

- Reporting Verbs

In presenting their arguments, the students relied on the works or ideas of others. They preferred integral citations solely in the pretest while in the posttest they employed both integral and non-integral citations. The classification of reporting verbs by Hyland (2002b) was selected to analyze the students' choices of reporting verbs. These reporting verbs are divided into three groups: research verbs, representing actions and activities (e.g., find, discover, show), cognition verbs--involved with mental processes (e.g., think, believe, argue), and discourse verbs--concerned with verbal expressions (e.g., state, point out, suggest). Table 4.14 shows the frequency of reporting verbs in the pretest and posttest arguments.

Table 4.14 Types of Reporting Verbs and Tenses

Writing Test	Reporting Verbs	Frequency
Pretest	**Discourse verbs:** told (3), said (2)	5
Posttest	**Discourse verbs**: state (9), point out (1), suggest (1), indicate (1), note (1) **Research verbs**: found (4), shown (1), show (1), reveal (1), investigated (1), confirmed (1), reported (1) **Cognition verbs**: argue (3), argued (2), claim (2)	44

As can be seen, there was a substantial difference in the students' choices of reporting verbs to represent other works in the pretest and posttest. In the pretest, the students drew on only two discourse verbs “told” and “said” while these cases did

not occur in the posttest. In the posttest, they used a completely different set of items to refer to other cited ideas. The high frequency verbs included instances of all verb types discourse verb - “state”, cognition verb - “argue” and “claim”, and research verb - “found” respectively. The choices of these reporting verbs and tenses appeared in different situations:

(15) Carrie Fried **told** that laptops can distract both students and nearby classmates. (Pre1) (Correction: Fried (2008))

(16) First, Carrie Fried **said** that laptops can enhance learning in classrooms. (Pre30) (Correction: Fried (2008))

(17) Fried (2008) **states** that most student[s] believe that laptops offer them benefit in self-learning. (Post10)

(18) Fried (2008) also **argues** that student can use laptop anywhere and anytime to learn...and work in groups for [learning] purpose[s]. (Post14)

- Self-mention

The results in Table 4.15 show the students’ use of self-references and their collocation patterns in the pretest and posttest texts. It should be noted that the number of occurrences includes “I” and “We” and their other grammatical forms (e.g., me, my, us, our).

Table 4.15 Authorial References and Their Collocations

Writing Test	Author Pronouns		Collocation	Non-human Subjects	Collocation
	I	We		Essay	
Pretest	109 (1.15%)	48 (0.51%)	**I** + think (15), agree (11), opinion (11), disagree (8) **We** + life (12), use (9).	-	-

Writing Test	Author Pronouns		Collocation	Non-human Subjects	Collocation
	I	We		Essay	
Posttest	12 (0.09%)	41 (0.30%)	**I** + believe (3), argue (3) **We** + life (9).	15 (0.11%)	discuss (6), argue (4)

The students' explicit and implicit use of self-reference devices differed considerably in their pretest and posttest arguments. In fact, in their pretest essays, they explicitly self-mentioned more than 9 times as frequently as their posttest essays. While they mainly chose "I" in the posttest to express their personal views, they used "I" in the pretest to reveal their opinions and recount their laptop-related activities in a narrative style. This revelation of personality was evidenced by the fact that "I" commonly collocated with cognition verbs (e.g., think, agree, believe, argue) and nouns (e.g., opinion) that involved personal stances:

(19) In **my opinion**, there are a lot of benefits of using the laptop. **I** can do my homework anywhere **I** want. (Pre32)

(20) **I think** it is a [useful] tool because we can search information easily on the internet. (Pre3)

(21) While some people argue that laptop use can lead to several problems, **I** strongly **believe** that laptop is a powerful tool for learning [in] this digital era. (Post11)

However, inclusive "we" in the pretest occurred slightly more frequently than in the posttest. It was rhetorically deployed by the students to unitarily represent themselves and their readers in their discourse. They drew on "we" when they pointed out that their lives and readers' were influenced by laptops and laptop use:

(22) I am [a] student who always use[s] [a] laptop for education. If **we** use it in a right way, it is more useful than harmful. (Pre5)

(23) **We** cannot deny that technology influence[s] the lives of people in almost every aspect. (Post5)

Strikingly, in their posttest, they used a non-human subject "this essay" up to 15 times as a means of implicit self-projection while none of them chose this rhetorical strategy in their pretest. This inanimate subject frequently co-occurred with a discourse verb "discuss" which indicated the purpose of the essay and a cognition verb "argue" which signaled a strong personal belief.

(14) **This essay** will **discuss** the benefits and harms of using laptop in classrooms. (Post4)

(15) **This essay argues** that laptops have both negative and positive impacts on students' learning. (Post18)

- Reader Reference

The reader pronoun "you" was one pervasive device that the students employed to engage their readers. Table 4.16 shows a remarkable difference in the total frequency of "you" occurring in the pretest and posttest texts.

Table 4.16 Total Number of "You"

Writing Test	Reader Pronouns	
	Frequency	%
Pretest	33	0.35
Posttest	11	0.08

In addition to the highly dense use of "I" in the pretest, the students used "you" three times more frequently than in the posttest. This preferred device was an

explicit strategy to bring readers into their discourse through different mood structures, e.g. conditional statement and rhetorical interrogative:

(26) If **you** spend a lot of time [on] laptops, **you** will waste your time...doing nothing. (Pre29)

(27) Do **you** like to use any kind of technology? And which one do **you** prefer? (Post7)

- Epistemic Modality

Table 4.17 presents the devices of epistemic modality deployed by the students to modulate and intensify their commitment to their propositions in both their pretest and posttest arguments.

Table 4.17 Total Frequency of Hedging and Boosting Devices

Writing Test	Modality			
	Hedges	Total	Boosters	Total
Pretest	think (31), may (12), could (9), believe (9), might (7), claim (2), seem (2), likely (1)	73 (0.78%)	extremely (1), significantly (1), greatly (1), absolutely (1)	4 (0.04%)
Posttest	think (39), believe (27), might (14), may (13), argue (9), could (6), seem (5), tend (5), possible (4), likely (3), claim (1)	126 (0.92%)	evident (4), no doubt (4), known (3), found (3), clear (3), obvious (2), significantly (2), fact (2), greatly (1), truly (1), surely (1), of course (1), indeed (1)	28 (0.20%)

In the posttest, the students used a greater number and a broader range of modality items than in the pretest, although most hedging devices, especially cognition (e.g., think, believe, argue) and modal (e.g., may, might, could) verbs were common to the two texts. Most noticeably, “think” was still by far the most preferred

device both in the pretest and posttest. These hedging expressions marked the students' weak opinions and uncertainty:

(28) I **think** it is a [useful] tool because we can search information easily on the internet. (Pre3)

(29) ...while students look at their laptop screen they **may** lose their attentiveness toward the lesson. (Pre20)

(30) In contrast, other people **think** that laptops can have a negative impact on students' learning. (Post9)

(31) It is **possible** that laptop **could** make students [learn more] by themselves. (Post10)

In terms of certainty, however, it is clearly seen that the students made more various choices of boosting devices in the posttest than in the pretest. While they used only four devices (4 times) in the pretest, they used 10 devices (18 times) in the pos-test. These boosting realizations revealed the students' strong opinions and confidence.

(32) ... laptops are **greatly** useful for students' learning and convenient for accessing the information. (Pre24)

(33) It is **evident** that using laptops decreases [students'] ability to pay attention [to] the lesson.... (Post13)

(34) If we use it [a laptop] in a wrong way, it **surely** gives disadvantages. (Post4)

- Introductory "it" (*it*-clause)

One apparent difference was in the students' deployment of "*it*-clause" as a rhetorical or interpersonal device. The classification of *it*-clauses was adapted from

Hewings and Hewings' study (2002) as an analytic framework: hedging--expressing tentativeness (e.g., it is possible), boosting--displaying certainty (e.g., it is clear), marking attitudes--expressing feelings and evaluations (e.g., it is surprising), and expressing directives--drawing readers' attention (e.g., it should be noted). Table 4.18 presents the occurrences of "*it*-clause" and its rhetorical functions in the pretest and posttest texts.

Table 4.18 Rhetorical Functions of "*it*-clause"

Writing Test	Rhetorical functions				Total
	Hedges	Boosters	Attitudes	Directives	
Pretest	-	-	-	1	1 (0.01%)
Posttest	7	16	7	3	33 (0.24%)

It can be seen that while *it*-clause appeared only once in the pretest to direct readers, it occurred very highly frequently, amounting to 33 times in the posttest. This greater use of *it*-clause was motivated by the students' needs to perform rhetorical functions in their texts: boosting, hedging, marking attitudes, and expressing directives. These functions were rhetorically realized as the students anticipated their readers' perspectives and expressed their personal stances towards their propositions:

(35) **It is vital** that we, as the new generation, should [keep abreast of new technologies] useful for our daily lives. (Pre24, Directives)

(36) In addition, **it [is] obvious** that using laptops can make students' lives easier than [in] the past. (Post9, Boosting)

(37) **It is possible** that laptops will be the most important learning device in the future. (Post2, Hedging)

(38) So, **it is not surprising** that laptop may be the popular learning tool in classroom. (Post10, Attitude)

(39) Therefore, **it is suggested** that teacher[s] should not let their students use laptop in class.... (Post10, Directives)

However, *it*-clause could serve more than one rhetorical function, e.g. expressing directives and masking subjectivity. In this way, "it is suggested" was chosen over "I suggest" to depersonalize an opinion.

(40) Therefore, **it is suggested** that teacher[s] should not let their students use laptop in class.... (Post10)

- Conjunctions

Combining clauses into a logically connected text--discourse needs to draw on a wide range of conjunctions as cohesive devices which are central to the development of academic arguments. Table 4.19 shows the total frequency of conjunctions deployed by the students to establish a logical flow and relation of information into a persuasive, coherent discourse in the pretest and posttest texts.

Table 4.19 Total Frequency of Conjunctions

Types of Conjunction	Writing Test			
	Pretest	Total	Posttest	Total
Addition	in addition (13), moreover (13), first (8), second (4), furthermore (2)	40 (0.43%)	moreover (24), in addition (23), furthermore (8), first (6), second (5), additionally (2)	68 (0.50%)
Concession	however (21), although (9), even though (7), while (3), though (2)	42 (0.45%)	however (35), while (10), although (6), though (3), even though (1)	55 (0.40%)
Causality	Because (63), so (18), lead to (5), cause (5), since (3), therefore (2)	96 (1.02%)	Because (61), so (24), cause (20), since (14), due to (9), lead to (9), therefore (6), result in	146 (1.07%)

Types of Conjunction	Writing Test			
	Pretest	Total	Posttest	Total
			(2), as a result (1)	
Elaboration	such as (20), for example (17), especially (9), for instance (5)	51 (0.54%)	such as (30), for example (23), especially (9), for instance (2), e.g. (1)	65 (0.47%)

The frequency counts indicate that the students used more conjunctions in the posttest than in the pretest texts. Since they developed a longer stretch of discourse in the posttest, it is not surprising to find the greater use of every type of conjunctions, principally causal transitions with increased 50 occurrences. This marked increase was in the within-clause markers of casual relations with more alternatives from 10 to 40 times, such as “cause”, “lead to”, “due to”, and “result in”. These casual items allowed the students to place cause-and-effect information within a single clause:

(41) Many people think that laptop use in class might **cause** more damage than good for students. (Post11)

(42) ... students who sat [near] them cannot concentrate [on] the lessons **due to** interference from [those] using laptops. (Post30)

In addition to casual reasoning, the students relied more heavily on various additive conjunctions as they supplied more information to reinforce their argument. In fact, “moreover”, “in addition”, and “furthermore” were among the highest frequency items in the posttest text. However, these additive devices were predominantly used to connect larger segments rather than establish a structural relationship between two clauses.

4.1.4 Students' Satisfaction

The findings of this section are presented into two parts: general information on computer and Internet use and the students' satisfaction with the WAW lessons.

4.1.4.1 General information

This section reports the results of the students' general information on computer and Internet use. Table 4.20 presents the results of the students' computer and Internet knowledge.

Table 4.20 Computer and Internet Literacy

Literacy	Frequency (%)	
	Computer	Internet
Very good	7 (21.2%)	2 (6.1%)
Good	16 (48.5%)	27 (81.8%)
Fair	10 (30.3%)	4 (12.1%)
Poor	-- (0%)	-- (0%)
Very poor	-- (0%)	-- (0%)

Table 4.20 reports the respondents' similar pattern for their perceived computer and Internet literacy, which ranged from a fair to very good level. The majority reported that they had a good knowledge of computer (e.g., typing) (48.5%) and the Internet (e.g., searching) (81.8%). These findings revealed that computer and Internet skills were considered to be common among the respondents.

Table 4.21 Regularly-used Devices

Device	Frequency (%)
Desktop (PC)	15 (45.5%)*
Tablet	3 (9.1%)
Laptop	23 (69.7%)
Mobile	29 (87.9%)

*a total number of 33 respondents for each device

Table 4.21 shows that the respondents used a variety of computers and other devices in their everyday life. Most of them reported that they regularly used a mobile phone (87.9%) and a laptop (69.7%) while less than half of them used a personal computer (45.5%). A very small percentage identified themselves as a regular tablet user (9.1%).

Table 4.22 Frequency of Device Use

Frequency of Use	Frequency (%)
Several times a day	19 (57.6%)
Every day	13 (39.4%)
Several times a week	1 (3.0%)
Once a week	-- (0%)
Once a month or less	-- (0%)

Table 4.22 reveals that the frequent use of the digital devices reported by the respondents ranged from several times a week to several times a day. Slightly more than half of them specified that they used those digital devices several times a day (57.6%) while 39.4% reported that they were everyday users. Only one respondent said that they engaged in them several times a week (3.0%).

Table 4.23 Frequency of Internet Use

Frequency of Use	Frequency (%)
Several times a day	20 (60.6%)
Every day	13 (39.4%)
Several times a week	-- (0%)
Once a week	-- (0%)
Once a month or less	-- (0%)

Table 4.23 illustrates that the respondents identified themselves as frequent Internet users. Specifically, most of them said that they browsed the Internet several times a day (60.6%) while others reported having access to the Internet every day (39.4%).

Table 4.24 Internet Location Preference

Places	Frequency (%)
Home	23 (69.7%)
Internet café	7 (21.2%)
Library	10 (30.3%)
Classroom	19 (57.6%)
Others (e.g., dorm)	11 (33.3%)

*a total number of 33 respondents for each location

When they were asked about their preferred location for Internet use, they mentioned different places as reported in Table 4.24. Taken together, the responses revealed that a large majority of the respondents preferred to use the Internet at on-campus areas (e.g., classroom (57.6%), dormitory (33.3%), library (30.3%)). In a similar trend, more than half of the respondents enjoyed the Internet at home (69.7%). These findings showed that the respondents found Internet access at various locations convenient for them.

Table 4.25 Purposes of Internet Use

Purposes	Frequency (%)
Online learning	26 (78.8%)
Searching for information	31 (93.9%)
Social networking	27 (81.8%)
Entertainment	27 (81.8%)
Others (e.g., shopping)	2 (6.1%)

*a total number of 33 respondents for each purpose

Table 4.25 shows that the respondents used the Internet for various purposes. The very large majority of them used the Internet to search for online resources to support their study (93.9%), followed by social networking (81.8%) and entertainment (81.8%) while a roughly smaller percentage reported that they studied more online through the Internet (78.8%). Only two respondents mentioned that they shopped online (6.1%).

Table 4.26 Online Course Experience and Level of Satisfaction

Level of Satisfaction	Online Course Experience	
	Yes = 25 (75.8%)	No = 8 (24.2%)
Very satisfied	6 (18.2%)	
Satisfied	15 (45.5%)	
Moderately satisfied	3 (9.1%)	
Dissatisfied	1 (3.0%)	
Very dissatisfied	-- (0%)	

Table 4.26 reports that the very large percentage of the respondents reported having online course experience (75.8%) whereas 8 respondents had never had such experience (24.2%). The respondents who had ever taken an online course admitted that they were satisfied (45.5%) and very satisfied (18.2%) with their online learning experience. However, three respondents expressed a moderate level of satisfaction with their previous online course (9.1%) while one respondent was not satisfied (3.0%).

4.1.4.2 Students' Levels of Satisfaction

This section reports on the quantitative and qualitative results of the participants' satisfactions which attempt to answer the fourth research question "What are the levels of participants' satisfaction with WordPress-based Academic Writing lessons?".

a. Self-reported questionnaires

Through the online questionnaires, the total 33 participants were requested to evaluate their level of agreement on the 25 statements under 5 dimensions: lesson design, learning content, support system (WordPress), learning community, and personalization. The obtained mean scores of these statements and dimensions were

interpreted to determine the levels of learner satisfaction on a 5-level scale anchored as follows:

4.21-5.00	means	Students reported having a '**very high**' level of satisfaction.
3.41-4.20	means	Students reported having a '**high**' level of satisfaction.
2.61-3.40	means	Students reported having a '**moderate**' level of satisfaction
1.81-2.60	means	Students reported having a '**low**' level of satisfaction.
1.00-1.80	means	Students reported having a '**very low**' level of satisfaction.

Table 4.27 Results of Students' Satisfaction

Dimension and Criteria	$\bar{X}$	SD	Level of satisfaction
Lesson design	**4.43**	**.49**	**Very high**
1. The learning objectives are clearly defied.	4.27	.76	Very high
2. The learning objectives are aligned to the lessons.	4.58	.56	Very high
3. The lessons are up to my expectation.	4.21	.74	Very high
4. The instructions are easy to understand.	4.24	.75	Very high
5. The lessons are useful for future writing situations.	4.85	.44	Very high
Learning content	**4.28**	**.51**	**Very high**
6. The content fits my needs for my writing tasks.	4.39	.66	Very high
7. The lessons have various learning tasks and exercises.	4.24	.79	Very high
8. The lessons have sufficient content.	4.03	.68	High
9. The lessons have useful content.	4.67	.48	Very high
10. The content is presented in multiple ways.	4.06	.70	High
Support system (WordPress)	**4.15**	**.60**	**High**
11. The support system is easy to use.	4.30	.77	Very high
12. The support system is user-friendly.	4.24	.75	Very high
13. The support system has collaboration tools.	4.00	.79	High
14. The support system's operation is stable.	4.12	.78	High
15. The support system is linked to useful resources.	4.06	.79	High
Learning community	**4.35**	**.49**	**Very high**
16. I can collaborate with other peers in completing tasks.	4.18	.58	High
17. I can exchange resources and ideas with other peers.	4.27	.63	Very high
18. I can draw on peer feedback to improve my writing.	4.21	.82	Very high
19. I can draw on teacher feedback to improve my writing.	4.64	.55	Very high
20. I can discuss with my teacher and peers on the forums.	4.42	.71	Very high
Personalization	**4.25**	**.52**	**Very high**
21. I can achieve my learning goals.	4.12	.70	High
22. I can choose what I want to learn.	4.39	.75	Very high

Dimension and Criteria	$\bar{X}$	SD	Level of satisfaction
23. I can control my learning progress.	4.21	.70	Very high
24. I can determine my learning process.	4.27	.72	Very high
25. I can improve my academic writing skills.	4.24	.61	Very high
Total	**4.29**	**.43**	**Very high**

Table 4.27 shows the degree of satisfaction as perceived by the participants after they had attended the WAW lessons. The mean scores ranged from 4.00, a high level of satisfaction to 4.85, a very high level of satisfaction. Overall, it can be seen that the mean score was 4.29 and the SD was .43, which means that the participants expressed a very high level of satisfaction. These results indicate that generally the participants were very satisfied with the WAW lessons.

It is very useful at this point to consider the participants' extent of satisfaction with each dimension. The majority of them expressed their highest level of satisfaction with the lesson design aspect ($\bar{x}$=4.43, SD=.49) due to its usefulness for future writing situations and the alignment between the objectives and lessons. Likewise, most of them felt that they were very satisfied with the learning community ($\bar{x}$ =4.35, SD=49) and the learning content ($\bar{x}$ =4.28, SD=51). The least satisfying aspect was the support system ($\bar{x}$ =4.15, SD=.60) because it was insufficiently installed with collaboration tools and linked to other useful resources, yet many participants reported a high level of satisfaction.

The participants expressed a varying level of satisfaction with each individual criterion or statement. Most of them were very satisfied because they thought that the lessons were useful for other writing situations ($\bar{x}$=4.85, SD=.44), and they found that the lessons provided useful content ($\bar{x}$ =4.67, SD=4.8). In addition to the useful content, they maintained that they could utilize teacher comments to

improve their writing for the subsequent drafts and tasks ($\bar{x}$=4.64, SD=.55). These top three aspects were found to be very satisfying to most of the participants. It is interesting to note that the majority of the participants reported having a very high level of contentment with the learning content because it supported their specific needs for completing their given writing tasks ($\bar{x}$ =4.39, SD=.66). Importantly, they claimed that the online learning content enabled them to choose what they wanted to learn on their own ($\bar{x}$ =4.39, SD= .66) as they were composing and reviewing their essays.

Some issues pertaining to the support system and the learning content were reported to be least satisfying by most of the participants. Even though they expressed a high level of satisfaction with collaboration tools ($\bar{x}$ =4.00, SD=.79) and links to other useful resources ($\bar{x}$=4.06, SD=.79), these findings imply that the support system did not have sufficient tools that facilitated group assignments and links to external support resources. Because of this insufficiency, they were least satisfied with the sufficient content of the lessons ($\bar{x}$ =4.03, SD=.68), and thus a few of them required more examples to help reinforce their understanding. They also reported the lowest level of satisfaction with the multiple ways of content presentation ($\bar{x}$=4.06, SD=.70).

The analysis of the open-ended item revealed that the participants' responses contained both compliments and suggestions for improvement. The participants stated that the website (support system) was easy to use and supported self-learning, and the content was useful for academic writing (e.g., research). However, some of them provided comments and suggestions on various aspects. They suggested adding Thai definitions and more examples to illustrate the concepts, making the website more attractive, and making several correct answers flexible for

some online exercises. Interestingly, one participant reported feeling depressed learning online since the instructor could contact him/her all the time.

b. Semi-structured Interviews

The follow-up interviews were conducted with 10 students to investigate the more detailed dimensions of the participants' satisfaction to supplement the quantitative results from the questionnaires. Based on their posttest scores, the most 5 successful students were identified as highest-achievers (HA1, HA2, HA3, HA4, HA5) and the least 5 successful students, lowest-achievers (LA1, LA2, LA3, LA4, LA5). The interviewees were required to describe their opinions and feelings toward any aspects of the WAW lessons and also encouraged to provide comments and suggestions for further improvement. The following section presents the findings according to the themes deriving from the interview questions and compares the results across the groups where appropriate.

- Usefulness and Convenience of Online Resources

Despite the fact that the high-achieving group tended to be more frequent users (e.g., once a week (LA1, LA5, HA4), not frequent (LA4), quite frequent (HA5), frequent (LA2, LA3, HA1, HA2), very frequent (HA3)), the interview responses revealed that the WAW lessons benefited the two groups similarly. They regarded the WAW lessons as useful online and convenient resources that focused on their specific learning needs in academic writing, especially during writing process (e.g., reviewing, composing, revising):

> (1) I accessed the website frequently when I was writing and revising my essays. I benefited the most from the online lessons (50%), followed by the instructor (40%), and the core handouts (10%). (HA1)

(2) I accessed the website once a week when I was assigned to write my essays. Also, when I didn't understand some certain points, I studied the lessons more for clarification. (LA5)

Noticeably, half of them (LA2, LA2, HA1, HA2, HA3) reported that they could transfer and apply their gained knowledge to other writing situations and other courses (e.g., Issues in Literature) that required them to develop arguments to discuss the concepts.

(3) When I wrote an essay in other courses, I studied your [instructor] lessons (e.g., elements of argument, choice of boosters) to craft my argument. (HA2)

(4) In my literature course, I used the knowledge of argumentation and attribution to write my paper. (LA2)

- New Knowledge of Academic Writing

The respondents reported a wide range of topics related to academic writing they found relatively unfamiliar, including elements of argument, source citations, reporting verbs, tenses in citations, modality (hedges/boosters), nominalization, active and passive structures, *it*-clauses, general subjects (animate/inanimate), author pronouns (I/We), and connectives. These selected aspects served as meaning-making resources to develop their argument with a focus on rhetorical functions:

(5) Sometimes, academic writing needs to be objective. So instead of using "I believe..." explicitly, I masked personality through "It is believed...". (LA1)

(6) I used “hedge” and “booster” to persuade readers and bring them into my argument. (LA3)

(7) I referred to other authors’ ideas to increase the credibility of my argument. (HA1)

(8) I used “hedge” and “booster” to develop a claim that revealed my position and commitment. (HA4)

- Increasing Awareness of Linguistic Choices

Since they were equipped with richer linguistic resources, all of them asserted that they became more critical and aware of linguistic choices they made in various aspects of communication. These choices were constrained by their enhanced understanding of academic discourse and their positioning of a new role as a writer. It was therefore found that they placed a greater emphasis on interpersonal meaning as they were aware of their authorial voice and relationship with readers. By attending to these interpersonal dimensions, they realized that they could choose how best to represent their self and ideas and engage their readers in their argument:

(9) When I didn’t want to use “I” so as to reduce subjectivity, I had other choices, e.g. inanimate subject, nominalization, and passive structures. (HA1)

(10) I chose to hedge my statements when I wanted to be accepted by readers. (HA3)

(11) I selected suitable words to develop my claim in relation to support evidence. (LA1)

(12) When I wanted to avoid using “I” explicitly in my essay, I could use “this essay” instead. (LA2)

- Perceived Growth of Writing Skills

The respondents perceived that they could advance a wide range of issues and skills in academic writing, e.g. modality (hedges/boosters), attribution to sources, reporting verbs, elements of arguments, and control of intersubjecvity. Interestingly, these improved aspects were oriented to interpersonal meaning or functions with evaluations on three interconnected factors: writer, text, and reader. However, this orientation tended to be more evident among the high-achieving students (HA1, HA3, HA4, HA5). As they extended a repertoire of language resources, therefore, they could choose to achieve such rhetorical functions:

(13) I treated my instructor as my audience, so I carefully chose language to control my personality, i.e. avoiding "I" through other strategies. (HA5)

(14) Previously, I presented my own ideas neutrally. But in this course, I could choose more appropriate words to make arguable claims. (LA5)

Since they considered and evaluated their self, argument, and readers, most of them perceived that they developed more critical thinking (LA3, HA1, HA3) and conceptualized writing as an interpersonal act (LA2, LA5, HA2).

(15) I planned more in my writing in a bid to persuade readers, making them to continue reading. (LA3)

(16) It's my first writing course that fostered my freedom and thinking. Previously, I didn't realize that my ideas and voice could be projected in my writing. (HA1)

(17) In this course, I realized the presence of readers and controlled the level of formality and personality. (LA2)

(18) I was more reader-considerate and paid more attention to authority and subjectivity. (HA2)

- Learning Platforms

The respondents unanimously preferred a hybrid mode of learning--a complementary combination of web-based learning activities and traditional face-to-face instruction. They explained that online learning enables them to choose what they want to study at their own time and pace while in class, they can exchange ideas and ask questions synchronously when they do not understand some certain points. In addition, since in-class instruction may not serve each individual student, online learning platform with useful resources can compensate for this constraint:

(19) I prefer both online and in-class learning. When learning online, I can study at any time. But in class, when I have any doubt, I can ask my instructor questions. (LA2)

(20) I favor both online and in-class learning. I can learn online at any time just in case in-class teaching may not be sufficient. (HA1)

- Suggestions for Improvement

Nine respondents provided more suggestions on various aspects for upgrading the WAW lessons while one of them (HA1) maintained that they were useful and sufficient. The suggestions included more examples of longer texts (LA2, LA3, LA4, LA5, HA3, HA5), detailed keys to online exercises (LA1), note-taking tool (HA2), and automatic notification for remaining exercises (HA4). It can be seen that more examples of longer discourse are the most necessary among most of the respondents because they can enhance their understanding of linguistic features in the context of usage.

4.2 Discussion

This section presents the discussion of the main results regarding (1) the development of the WAW Instructional Model, (2) the efficiency of the WAW lessons, (3) the students' writing achievements, and (4) the students' satisfaction with the WAW lessons.

4.2.1 Development of the WAW Instructional Model

This section discusses the evaluation results of the WAW Instructional Model, including ISD principles, purpose fulfillment, core model elements, and development process.

4.2.1.1 ISD Principles

The WAW Instructional Model was appraised as a "very appropriate" conceptual framework, which is consistent with other ISD studies (e.g., Linh & Suppasetseree, 2016; Surakhai & Pinyonatthagarn, 2014; Termsinsuk, 2015). This positive outcome may be explained that its development was underpinned by ISD principles that concentrate on systematic procedures in which phases and steps are elaborated to enhance a sense of understanding complex and multifaceted situations (Crawford, 2004). These ISD principles informed the incorporation of three essential aspects of a semantically-focused approach, constructivist principles, and a web-based system of lesson delivery. In fact, each proposed aspect was coherently realized in clear phases and steps in a systematic and logical manner, thus facilitating pedagogical applications. This practice was carried out in response to the premise that effective web-based instruction does not simply take place as a result of adopting

technology, but it requires a principled and systematic design that serves students' specific learning needs as a locus.

4.2.1.2 Purpose Fulfillment

The WAW Instructional Model served the purpose of the study, which was also evaluated as "very appropriate". This finding suggests the compatibility and usefulness of the three aspects proposed in the study. That is, academic writing is viewed as involving critical decisions and felicitous choices of lexico-grammatical features; thus, it is essential that students need to learn to write both inside and outside the classroom. To achieve this purpose, one excellent way is to harness the affordance of technology as a content management tool (e.g., WordPress) for delivering lessons online to empower students to take control of their own learning, whether they learn independently and collaboratively. These approaches to learning are theoretically underpinned by constructivism (e.g., Barr & Tagg, 1995; Driscoll, 2005; Kamii, 1984). This theory maintains that students learn best on their own when they have power to access and deal with knowledge (Lantolf & Thorne, 2007; Lian, 2011) and when they are oriented to a variety of content presentations and perspectives. For example, less capable students are assisted to learn by more advanced peers (Kamii,1984; Liu & Mattews, 2005). That's why this coherent synthesis was perceived by three experts as corresponding to the purpose of the study.

4.2.1.3 Major Model Elements

The six major elements were evaluated as "very appropriate". This result may be due to a systematic process of operationalization that encompasses ISD activities (Gustafson & Branch, 2007). In this study, these core phases were intended to operationalize three focused standpoints: a semantically-oriented approach,

constructivist principles, and technology. They were implemented to improve students' academic writing and learning to write academically by focusing on meaning-making in context and learning online both individually and collaboratively. To serve this purpose, these proposed aspects were systematically represented in logical phases where activities were clearly identified, e.g. analysis, designing, development, implementation, and evaluation. These phases are also present in the ISD models developed by Linh and Suppasetseree (2016) and Watcharapunyawong and Usaha (2013). These activities are important for monitoring if any implemented approach is effective for students' learning (Gustafson & Branch, 2002). If not, this systematic execution allows clearer revisions for some problematic phases.

4.2.1.4 Development Process

The positive evaluation results of the non-linear and recursive process of development indicate that the WAW Instructional Model underlines its flexibility and learner perspective. It is flexible in that the process can start at numerous points and does not need to proceed in sequence; designers can even work on single elements independently or more than one element concurrently. Due to this flexible process, students are treated as development team. In this study, the prototype lessons were trialed with three groups of students in three testing steps: individual testing, small-group testing, and field testing. In each step, students were required to study the lessons online and performed exercises and end-of-lesson tests. The performance results and feedback from students were utilized as input data for revising and improving the lessons. The revised lessons were re-implemented in the subsequent steps until they achieved the designated criterion and there were no comments from the students. This learner-oriented design is integral to the development of web-based

courses (Morrison et al., 2011; Richey et al., 2011; Willis, 2009), conceived of as one plausible way of accommodating students who are considered to have different levels of proficiency despite the same level of education.

4.2.2 Efficiency of the WAW Lessons

The WAW lessons were designed and developed in accord with the guiding conceptual framework of the WAW Instructional Model which was gauged as a very appropriate blueprint for implementation. The prototype of the WAW lessons was then initially trialed with 31 students and fully implemented with 33 students to ascertain their quality. The findings revealed that the WAW lessons achieved the 80/80 criterion, indicating that the WAW lessons were efficient for the present group of the students in this study.

4.2.2.1 Need-based Lessons

The development of the WAW lessons was motivated by the needs to assist the students to produce more extended academic texts that stressed rhetorical functions commonly valued in academic writing and to provide online support resources which could be used independently by the students as they composed and reviewed their products. It is generally accepted that these pedagogical needs can be fulfilled through a systematic process of designing and development advocated by the concepts of ISD (Gustafson & Branch, 2007), starting from analysis to evaluation, with materials or lessons as a central entity (Crawford, 2004). This ISD process involves the translation of teaching and learning principles into practical actions for support resources, learning activities, and evaluation methods (Smith & Ragan, 2005). In practice, therefore, these activities can lead to an understanding of instructional and learner needs, selection of theoretical foundations (both learning and language),

development of support materials, and a selection of assessment and evaluation tools. They are systematically and systemically performed in an attempt to create support materials to serve learners' specific needs and enable their learning which is one plausible indicator of efficient lessons.

4.2.2.2 Learner Feedback

It can be seen that the focal aspect of ISD activities are learning materials designed and developed primarily for target learners who can offer useful input and feedback for improvement that conforms to their requirements. This orientation gives a top priority to a multiplicity of learner perspectives as emphasized by many ISD scholars (e.g., Morrison et al., 2011; Richey et al., 201; Willis, 2000). To address this important issue, the WAW lessons were tried out with the target students with a varying level of proficiency through three testing steps: individual testing, small-group testing, and field testing, with the aim of monitoring the quality of instructional materials and ensuring the acquisition of focused knowledge (Brahmawong, 2013). In the individual and small-group testing steps, the students' performances were relatively poor, failing to reach the 80/80 criterion, due to several reported factors, such as lengthy content, unfamiliar terms, difficult and ambiguous questions, and too many distractors. After a series of revisions was considerably undertaken based on their comments and suggestions, the students performed better in the field testing step and in the main experiment, thus achieving the 80/80 criterion. It is therefore important to note that this testing process enables course developers to fulfill the expectations of learners who are diverse in terms of proficiency and requirements.

4.2.2.3 Reinforcement Practices

It was observed that the students performed better on the exercises than the end-of-lesson tests for every lesson. This difference in score gains may be explained by the fact that the students were allowed to work on the exercises up to a maximum of 3 attempts, but only 1 attempt for the end-of-lesson tests. The highest scores were recorded as their performance evidence. In relation to this point, Walakanon (2014, p.166) argues that the "repetitive practices and greater exposure" can reinforce the students' understanding. Because of these reasons, his study also found that the students' exercise scores were higher than the end-of-lesson test scores. In addition, in some exercises, useful hints were provided to assist the students in solving the questions. Some of the students found those given hints very helpful. By drawing on the pertinent hints, the students could become more aware of and think more critically about the target topics when they were attempting to work out the difficult questions.

4.2.3 Academic Writing Abilities

This section discusses the results of the students' writing achievements that focus on their overall and domain-specific performance and frequent choices of lexico-grammatical features and their realized rhetorical functions.

4.2.3.1 Overall and Domain-specific Performances

The overall writing pretest and posttest scores revealed that the students made a measurable progress in their academic writing after they had attended the WAW lessons. It was indicated that the WAW lessons had a significant impact on the students' academic writing abilities. In addition, the domain-specific analysis of the pretest and posttest texts demonstrated that the students performed significantly better

on the posttest in every domain. However, judging by their total mean scores, they underperformed on reference to other external sources which was observed to be a challenging skill. These results will be mainly discussed in relation to learner and lesson perspectives:

a. Self-regulated Learning Process

The WAW lessons facilitated the students' self-construction of knowledge as their sense of autonomy and freedom was enhanced over the availability and flexibility of online useful and abundant resources. Many studies (e.g., Asawaniwed & Boonmoh, 2012); Noytim, 2012; Phadvibulya & Luksaneeyanawin, 2008) have reported a significant correlation between online learning, enhanced autonomy, and language development. The key merit was that the students were empowered to construct their own knowledge rather than wait passively for knowledge to be transferred to them by the instructor merely in the classroom. As they attempted to complete assigned tasks or solve problems, they accessed the lessons as many times as they wanted at their own pace and at their most convenience. In this perceived authority, they were liberated to manage their own learning paths and organize their learning lessons in response to their specific needs and most conducive to their understanding. To reinforce this understanding of focused concepts, they could also perform online practices in a variety of formats to challenge their existing knowledge and self-assess their performance. This is consistent with Phadvibulya and Luksaneeyanawin (2008) who asserts that online resources provide extended opportunities in learning and improving language skills out of class. Therefore, since the control by the instructor over the lessons was relinquished to the students, this is one plausible explanation why their writing abilities improved.

b. Semantically-oriented Lessons

The WAW lessons inspired by a SFL genre-based approach promoted the students to write meaningfully for a communicative purpose through a discussion genre and deploy lexico-grammatical features as meaning-making resources to develop this genre. This genre-based orientation encouraged them to conceptualize writing as a whole text with a clear purpose and understand its generic structure and different stages, each of which performs its own function that contributes to its overall purpose (Derewianka, 2003; Martin, 2009). When they gained this understanding of rhetorical forms and their functions, they could fulfill a given task and compose a more successful text. Similarly, Changpueng (2012) found that a genre-based approach was effective in improving Thai undergraduate students since they were made aware of a genre, purpose, and structure. This benefit is confirmed by a genre-based study into Thai undergraduate writing by Kongpetch (2006). This study suggests that a rhetorical style of organization can contribute to an effective text. It is particularly essential for novice writers who have a great need of rhetorical structures (Clark & Hernandez, 2011; Johns, 2003). It can be seen that understanding a target genre and its purpose can be a key to producing more successful and effective writing.

The WAW lessons provided the students with knowledge of and experience with useful lexico-grammatical features associated with a discussion genre and academic registers that served as resources for constructing meanings valued in academic writing. This semantic orientation intended to extend the students' lexico-grammatical resources from which they could choose and deploy to realize rhetorical functions. In this study, most targeted lexico-grammatical features were drawn on the findings of corpus-based studies on academic texts produced by professional writers

and student-writers, such as *I* and *we* (Hyland, 2002a; Tang & John, 1999), conjunctions (Aull & Lancaster, 2014; Charles, 2007; Schleppegrell, 1996, 2001), general and non-human subjects (Martin & White, 2005; Charles, 2006a), hedges and boosters (Caplan, 2012; Aull & Lancaster, 2014; Lancaster, 2016; McEnery & Kifle, 2002), anticipatory *it*-clauses (Hewings & Hewings, 2002; Hyland, 2010), nominalization (Liardét, 2016; Schleppegrell, 2001), passive structures (Caplan, 2012; Tang & John, 1999), reporting verbs (Bloch, 2010; Caplan, 2012; Hyland, 2000), tenses in citations (Caplan, 2012; Hawes & Thomas, 1997; Swales, 2001), and forms of citations (Charles, 2006a, 2006b; Swales, 2001). Corpus-based resources can be helpful in language learning, allowing learners to observe the frequent authentic and natural occurrences of linguistic features and patterns and their functions in context (Tribble, 2001). Given this authenticity, the students could learn the most relevant linguistic features essential for their immediate tasks and future writing situations.

c. Difficulties in Integrated Writing

However, it was found that most of the students encountered many considerable problems and difficulties in using external sources since they were required of simultaneous skills, such as language proficiency (Keck, 2006), reading comprehension (Plakans, 2009b), discourse synthesis (Numrich & Kennedy, 2016), evaluation of source ideas (Swales & Feak, 2012), forms of citations (Swales, 2000; Charles, 2006a), rhetorical functions of citations (Petric, 2007), and choices of reporting verbs and verb tenses (Bloch, 2010; Hyland, 2000; Caplan, 2012; Malcolm, 1987). In the pretest, almost every of the students failed to integrate external voices by drawing on many devices (e.g., as, from, based on) which were not common in academic writing (e.g., Hyland, 2000; Dontcheva-Navratilova, 2008) and obviously

overrelying on source texts. In addition, many of them used source ideas as a source for their criticisms, rather than supports and justifications for their argument. In the posttest, despite the fact that the students used a wider range of citation strategies, many of them still misused reporting verbs and verb tenses, simply replaced words, and copied a long string of source words. This copying was deemed as plagiarism. It is no doubt that source use is a difficult aspect of academic writing, especially for EFL students.

4.2.3.2 Lexico-grammatical Choices and Rhetorical Functions

This section discusses the results of the students' frequent choices of lexico-grammatical features and rhetorical functions realized in their pretest and posttest essays to convince readers.

a. Subjectivity and Reader Engagement

The choices of self-referential pronouns and reader reference varied enormously between the pretest and posttest texts, which reflects the nature of written discourse and the revelation of personal stances (e.g., Halliday, 1994; Martin & White, 2005; Schleppegrell, 2001). In fact, the students drew on a first-person pronoun "I" and a reader pronoun "you" significantly more frequently in the pretest than in the posttest. It is recognized that "I" allows writers to secure rhetorical effects by explicitly expressing confidence in their evaluation (Hyland, 2002a), commitment to their propositions (Tang & John, 1999; Charles, 2006), and a strong sense of personal involvement to their writing (Hyland, 2010). Meanwhile, "you" enables writers to clearly engage readers and bring them to their discourse (Hyland, 2008). This overuse of these pronominal items may be due to the fact that the students may not have recognized the register features of spoken and written texts and have been

familiar with opinion- and experience-based writing in their previous composition classes.

However, these pronominal subjects that were dense in the pretest are observed to be typical of interactional discourse, especially spoken (Halliday, 1994), rather than of academic arguments (Hyland, 2008) because they indicate a dialogicity of conversation in which participants engage in simultaneous responses (Schleppegrell, 2001). Because of this dialogic nature, Hyland (2008) notes that "you" is not a common case in academic discourse since it perhaps implies a writer-reader separation. Moreover, expressions of personal views through constructions, e.g. "I think" and "I believe" which were highly frequent in the pretest are considered to be hedging devices (Martin & White, 2005) and overtly subjective (Lancaster, 2016). These explicitly subjective constructions tend to be more among less proficient L2 student-writers (Schleppegrell, 2004). These preferences suggest a lack of understanding of rhetorical functions and awareness of linguistic resources that provide other potential choices appropriate for academic written registers.

Nevertheless, it was found that the students were equipped with more lexico-grammatical resources and became more aware of rhetorical functions. This improvement was evidenced by the much less frequent use of "I" and "you" and the consistent use of inclusive "we" to develop a more persuasive argument. The employment of "we" is a common strategy in academic writing (Karahan, 2013; Tang & John, 1999) since it permits a representation of authorial self and readers in a discourse to create a sense of togetherness and membership (Hyland, 2008; Tang & John, 1999). It is possible that "we" was a consistently adopted device by the students as they perceived that technology benefited and impacted them and people in general.

Strikingly, many students relied on “this essay”, a non-human subject with a deictic “this” literally in place of a first-person pronoun “I” while they were still able to express their views. This rhetorical choice can be explained by their needs to avoid overt agency and thus subjectivity since they develop a larger repertoire of linguistic resources available for managing impersonality. Charles (2006a) further explains what she calls “a text noun” that this construction allows writers to obscure responsibility for their propositions. In effect, they are more likely to gain acceptance from readers, perhaps especially those who hold a positivist notion that academic writing needs to be personally distant and devoid of self-projection. However, despite the fact that “I” is avoided through other felicitous lexical and syntactical choices by writers, their presence and roles are not entirely concealed.

b. Commitment and Dialogicity

It is generally acknowledged that a persuasive and arguable statement lies in its proper qualification (Andrews, 2010; Wilhoit, 2009). To serve this function, modality is a common interactional tool as it contributes to multiple rhetorical functions and therefore persuasion in academic writing (Hyland, 2008; Martin & White, 2005). This study revealed that the students employed a largely greater number and broader variety of hedging and boosting devices in the posttest than in the pretest. This phenomenon can be explained by the fact that the students developed more linguistic resources from which they could select to present their propositions with greater precision to reflect their actual stances. Epistemically, they depended on hedges and boosters because they wanted to express their varying levels of commitment to their statements in relation to their personal beliefs about the status of knowledge (McEnery & Kifle, 2002). Through abundant modality resources provided,

they could choose to either modulate or intensify their commitment appropriately when they considered their own evaluations and their readers' expectations.

However, it was found that despite the marked increase of hedges and boosters in the posttest, hedges were far more preferable both in the pretest and posttest. This indicates that the students tended to present their propositions tentatively. The finding can be explained by two contrasting reasons. On the one hand, they used hedges to qualify their propositions to reduce the certainty of knowledge and create interactions with readers. In this case, hedges function as interactional resources that allow a dialogic space for alternative views from readers (Martin & White, 2005). This strategy is a rhetorical one employed to engage readers by manipulating their perspectives (Seyler, 2009). On the other hand, the high use of hedging expressions may point to the students' authority in an instructional context. The students may have developed a low sense of authority over their arguments since their essays were assessed by the instructor. Therefore, they tended to feel much safer to modulate statements to avoid skepticism and negation.

In addition to lexical and modal verbs, hedging (e.g., it is possible) and boosting (e.g., it is clear) expressions can be encoded through a system of anticipatory *it*-clauses. In fact, it has been found that *it*-clauses are one common feature of academic prose that serves multiple interpersonal or rhetorical functions, e.g. expressing tentativeness, displaying certainty, marking attitudes, disgusting subjectivity, and directing readers' cognitive act (Hewings & Hewings, 2002; Zhang, 2005). But one obvious rhetorical strategy that occurred most frequently in the posttest was that of *it*-clauses as a boosting device. The students drew on boosting expressions to assert their position and seek readers' agreement as they were

confident that readers were highly likely to agree with their claims. The use of *it*-clauses is also rhetorically motivated by the fact that readers are assisted to process complex information which is extraposted at the end of a sentence (Hyland, 2008). In this case, how writers position their readers with regard to their propositions depends largely on how they make rhetorical choices through *it*-clauses. It can be seen that *it*-clauses are so multifunctional that they should be addressed in academic writing as useful resources for realizing rhetorical functions.

c. Semantic Relationships

The students used a broader range of conjunctions to establish a logical flow and relation of information that represented their experience through a discussion genre. Predominantly, they drew on causality, addition, elaboration, and concession to manage semantic relationships between clauses and segments of their discussion essays. The semantic group of casual conjunctions was most frequently employed by the students in the pretest and posttest. The finding may not be surprising since explanation is integral to argumentation and persuasion (Martin, 1989; Seyler, 2009; Wilhoit, 2009). To develop a persuasive argument, the students were required to justify their claims by explaining how evidence supported those claims. Also, since they were required to consider an issue from two perspectives, they needed to take up a position and therefore explained why their position was more valid. In addition, the students engaged in a process of casual reasoning as they arrived at conclusions on the basis of statements and evidence being presented. This suggests that causal conjunctions are a common resource for characterizing argumentation.

The considerable uses of conjunctions suggest the students' efforts in facilitating their readers' processing and interpretation of ideational content. This facilitation can be performed by making explicit the logical connections between propositions and marking text structures and their functions (Charles, 2011; Geva, 1992; Schleppegrell, 1996), which is a typical feature of academic written discourses (Schleppegrell, 2001). However, it is interesting to note that the students relied heavily on the same instances of conjunctions in the pretest and posttest despite the fact that the tendency varied according to the expansion of arguments. This heavy reliance may be due to L2 writing instructions that focus largely on conjunctions as cohesive devices.

Although conjunctions can play an important role in text comprehension, their high proportions can be interpreted as a pattern of overuse (Grabe, 2001). This overuse can be indicative of writing competence and register differences. Immature writers tend to rely on conjunctions as clause-linking resources (Martin, 1989). In their study, Prommas and Sinwongsuwat (2011) compared the use of discourse connectors in argumentative essays between Thai-native and English-native writers and found that the Thai-native writers used more discourse connectors than their English-native counterparts. By contrast, more competent writers tend to draw on other linguistic resources, such as nominalization, lexical verbs, prepositions that are typical of academic registers and foreground meanings within clauses (Hyland, 2009; Martin, 1989; Schleppegrell, 2001). However, these academic features tended to be rare in the students' texts, possibly due to their greater exposure to spoken language as also observed by many previous studies (e.g., Prommas & Sinwongsuwat, 2011; Schleppegrell, 2001) and their somewhat minimal prestige in academic contexts.

Therefore, they drew mainly on familiar logical conjunctions to serve textual and ideational functions in their texts.

d. Enhancing Credibility

While credibility in academic arguments can be established through a variety of strategies, one common means is reference to other external voices as supports or evidence for constructing a credible and sound argument (Bloch, 2010; Hyland, 2002a; Wilhoit, 2009). The analysis of the students' pretest and posttest arguments demonstrated that the students were much more successful in integrating source materials into their academic arguments in the posttest. In the pretest, most of the students drew on citation markers (e.g., from, as, based on) that were rarely found in academic writing (e.g., Dontcheva-Navratilova, 2008). Obviously, they foregrounded the authors of source texts through integral citations instead of their cited ideas and began most paragraphs with source voices. This practice of source uses is not recommended in academic writing since they should start with their own voices which reflect their point of view (Harvey, 2008). Furthermore, they presented source ideas as a point for expressing their opinions to them, opposed to strengthening their claims for which other authors' work is supplied as supports and justifications (Wilhoit, 2009). This evidence indicates that the students had a very limited knowledge of source use and did not understand the rhetorical functions of source texts.

In the posttest, the students developed more knowledge of source use and employed a broader range of citation strategies. In terms of citation forms, they drew on a much greater number of non-integral than integral citations. This phenomenon can be explained by some following factors. First, they wanted to foreground the

reported information (Swales, 2001) and present it in a non-evaluative way (Hyland, 2000). Through non-integral citations, they enable to remove their personal evaluation and perspective from their source information (Swales & Feak, 2012). Since they understood this rhetorical function, they may have believed that the emphasis on the reported information could contribute more to the credibility of their claims. Second, it is recognized that presenting other sources through integral citations involves various cognitive acts as they have to interpret and evaluate those sources and make appropriate choices of reporting verbs and verb tenses. Thus, integral citations can pose difficulties and problems for undergraduate students since their cognitive level is not appropriate (Thompson & Tribble, 2001) and their issues of power are different (Petric, 2007). These factors can possibly influence their choices and effective uses of citation forms.

4.2.4 Students' Satisfaction

This section discusses the results of the students' satisfaction in relation to learner needs, lesson design, and useful learning content.

4.2.4.1 Response to Learner Needs

The majority of the students were very satisfied with the WAW lessons although most of their learning took place in the classrooms. It is worth noting that satisfaction is usually seen as a pivotal construct that represents the extent to which the WAW lessons are responsive to the students' requirements (Cyert & March, 1963). In this regard, researchers maintain that online learning experience is strongly associated with learners' affective attributes (e.g., feeling, attitude) (Shee & Wang, 2008). Coniam and Wong (2004) further explain that an online learning platform is likely to provide a less threatening climate than classroom-based instruction. Thus,

learners can develop a sense of freedom and confidence (Richardson, 2010) and pleasure and contentment (Shee & Wang, 2008). In addition, other important variables that determine online learner satisfaction include computer self-efficacy, system functionality, content feature, interaction, and learning climate (Wu, Tennyson, & Hsia, 2010). In this study, most of the students reported being technologically-literate while other factors (e.g., support system, learning content, learning community) were also prioritized to respond to their requirements. It is therefore safe to say that because of these reasons, most of the students found the WAW lessons very satisfying.

4.2.4.2 Satisfactory Lesson Design

The lesson design was regarded as the most important dimension, which contributed to the highest level of satisfaction. The students found that the design of the WAW lessons formulated clearly-aligned learning objectives that were useful for their future writing situations. These results appear to confirm the premise that the success of a web-based course is not determined by the adoption of technology, but depends largely on a thoughtful and principled design (Samson, 2010; Warschauer, 2010) that addresses the aspects of teaching and learning (Lim & Zhang, 2004). The lesson design is a crucial phase as it can help identify learner-oriented aspects responsive to learners' needs. However, it is worthwhile to note that the support system received the least value. This suggests that the students are more likely to recognize what matters to them than where to access it, such as useful lesson content (learning content), free choices of content (personalization), and teacher feedback (learning community). These aspects are obviously essential for their composing process, as also evidenced by many students' demands for more authentic examples,

so that they can observe language patterns and rhetorical functions they perform in context.

4.2.4.3 Useful Learning Content

Regarding each individual criterion, the students perceived that the WAW lessons contained useful content. The lessons were helpful, particularly when they were required to compose academic essays as out-of-class assignments. The students could use them when they produced and revised their texts until their final draft was submitted. They were satisfied with the lesson content as it responded to their just-in-time needs for their assigned writing tasks and empowered their self-learning, which is in agreement with previous studies in terms of enhanced autonomy (e.g., Be & Sangarun, 2015; Sanprasert, 2010). This may not be surprising since learners can have constant access to knowledge any time and see immediate applications of such acquired knowledge into solving current problems (Jonassen, 1991; Sparrow et al., 2011). Therefore, online learning environments abundant with useful resources are considered to be vitally important for independent learners to construct knowledge, especially out of class.

4.3 Summary

This chapter presents the results of the study. The findings consist of the model evaluation, lesson efficiency, students' writing outcomes, and student satisfaction. In addition, it discusses the key results of the study in relation to previous studies and established theories. The next chapter will describe the development process of the WAW Instructional Model and the major components of the WAW lessons.

CHAPTER 5

A WORDPRESS-BASED ACADEMIC WRITING INSTRUCTIONAL MODEL: THIENTHONG'S MODEL

This chapter is divided into four sections. The first section provides an overview of the WordPress-based Academic Writing (WAW) Instructional Model. The second section reports on its development process. The third section describes the major components of the WAW lessons. The final section suggests some considerations on the implementation of the WAW Instructional Model.

5.1 Overview of WordPress-based Academic Writing (WAW) Instructional Model

The WAW Instructional Model was constructed as a conceptual framework that aimed at operationalizing and implementing a semantically-driven approach, web-based technology, and constructivist principles. This framework provided guidelines on the development of web-based academic writing lessons which (or WAW lessons) to serve Academic Writing at Ubon Ratchathani University (UBU), Thailand. The development of the WAW Instructional Model was based on the coherent synthesis of the outstanding elements and features of three ISD models: ADDIE (Gustafson & Branch, 2007), Kemp (Morrison et al., 2011), and SREO (Suppasetseree, 2005).

The salient features of these models are highlighted in this study. Firstly, the ADDIE Model is a generic model that has fundamental components inherent in most instructional models (Branch & Merrill, 2012; Gustafson & Branch, 2007). These components are major phases present in the WAW Instructional Model. Secondly, the Kemp Model emphasizes learner perspectives, e.g. learning backgrounds and special learning needs. These input data are utilized as guidelines for selecting learning contents suitable for learners. Finally, the SREO Model is a web-based instructional model. This online model provides a useful set of phases and steps for integrating web-based learning resources and support tools.

5.2 Development of WordPress-based Academic Writing (WAW) Instructional Model

The WAW Instructional Model consists of 6 phases and 14 steps. The numbers from 1.0-6.0 indicate the development process from analysis to evaluation while the dotted lines represent the routes of evaluation and feedback for enhancing the efficiency of process (exercises) and product (end-of-lesson tests). The phases and steps are illustrated and described as follows:

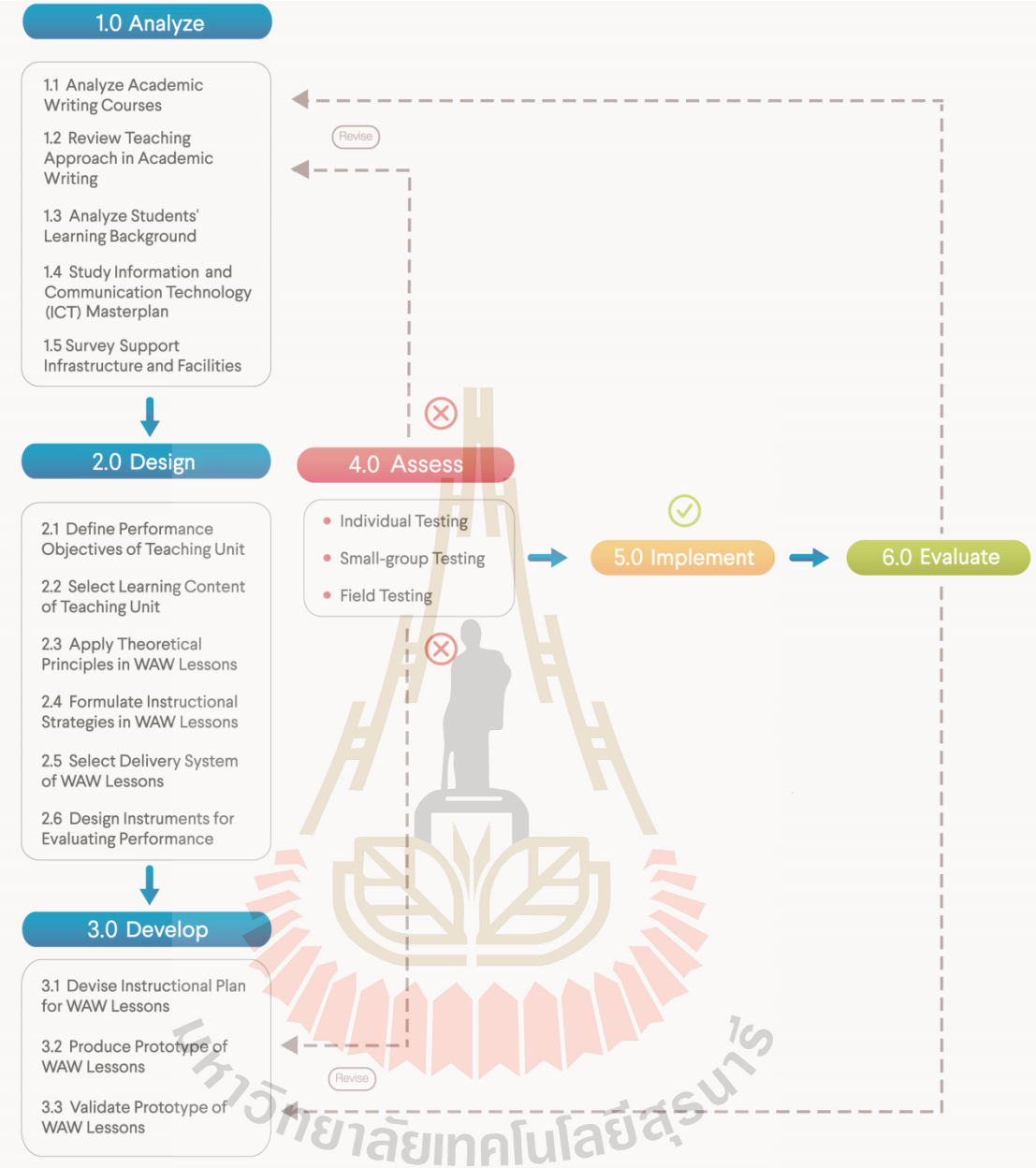


Figure 5.1 Phases and Steps of the WAW Instructional Model

1.0 Analyze

This initial phase sets out to analyze relevant important aspects, including current curriculum, teaching approach, learner background, ICT masterplan, and infrastructure and support facilities. The analysis of these aspects leads to insights in the present

context in terms of instructional problems and needs, so that instruction can be designed specifically to address these problems and needs.

1.1 Analyze Academic Writing Courses

This step intends to look at the course descriptions of Academic Writing as well as its pre-requisite (e.g., Paragraph Writing, Essay Writing) and post-requisite courses (e.g., Research Skills, Independent Study). These courses require students to write various academic texts. The researcher analyzed these course descriptions to identify writing skills and knowledge required in each course, focusing more on Academic Writing that was added to the recently revised curriculum in 2012. The analysis revealed that Academic Writing emphasizes reading and writing for academic purposes and clearer target audience and prepares students to write in more advanced and authentic situations, especially in Research Skills and Independent Study.

1.2 Review Teaching Approach in Academic Writing

This step intends to review previous teaching practices in Academic Writing and its pre-requisite courses (e.g., Paragraph Writing, Essay Writing) through lesson plans and interviews. This study drew on the review of writing courses conducted by Kongpetch and her colleagues at UBU in 2014. They interviewed instructors of academic writing and courses and found that the teaching of academic writing was based on a product-oriented approach that focused heavily on textual features (e.g., grammar, organization) while non-textual features (e.g., authorial stance, audience, rhetorical functions) were underrepresented.

1.3 Analyze Students' Learning Background

The analysis of learners leads to an understanding of their backgrounds in various aspects, such as level of study, writing experiences, writing problems and needs of

writing aspects (e.g., grammar, structure, argument). The review by Kongpetch and her colleagues at UBU in 2014 showed that students were usually trained to produce writing focusing on textual features, with much attention to discrete grammatical items and error-free sentences and good organization. Given this textual emphasis, they were not prepared well enough to deal with functional dimensions and rhetorical functions that consider a context of writing for a credible and persuasive argument.

1.4 Study Information and Communication Technology (ICT) Masterplan

This step aims at studying UBU's ICT masterplan. The analysis of this document showed that UBU highlights the importance of applying digital technology into pedagogical practices by promoting educational software, digital content, and online learning modes. Instructors are encouraged to incorporate technology elements into their courses to enrich teaching and learning practices.

1.5 Survey Infrastructure and Support Facilities

This step looks at the adequacy and readiness of infrastructure and support facilities, including equipment, services, and rooms. At UBU, there are seven computer-equipped rooms with convenient internet access that accommodate 20-50 students in each room. They are provided to support web-based trainings and instruction. In addition, students can have access to wireless networks with a variety of personal mobile devices throughout campus. The provision of these facilities supports a growing need for anywhere, anytime learning.

2.0 Design

Responding to the data in the analysis phase, the design phase includes definition of learning goals and objectives, selection of learning content, application of theoretical

principles, formulation of instructional strategies, selection of delivery system, and evaluation of performance.

2.1 Define Performance Objectives of Teaching Unit

Performance objectives are written in correspondence with the course description of Academic Writing. The WAW lessons are intended to develop students' academic writing through a discussion essay in which they learn to discuss both sides of a topical issue and incorporate other authors' ideas into their own argument. Therefore, the performance objectives are defined as follows:

- to develop a discussion genre with logical organization.
- to recognize the functions of each stage of a discussion genre.
- to make effective linguistic choices for rhetorical functions.
- to construct credible and persuasive academic arguments.
- to integrate source materials in a credible and persuasive way.
- to adopt appropriate stances toward academic arguments.
- to use discipline-specific conventions effectively (e.g. referencing, citations).

2.2 Select Learning Content of Teaching Unit

The selection of learning content is restricted by the learning objectives in Step 2.1 which in turn limit the scope and focus of learning. The WAW lessons consist of four lessons: Structure of Discussion, Language Choices, Academic Argument, and Use of Source Texts. Most materials in these lessons were developed drawing on the findings from corpus studies (e.g., Bloch, 2010; Caplan, 2012; Charles, 2006a, 2006b; Coffin, 2004; Hawes, 2015; Hawes & Thomas, 1997; Hewings & Hewings, 2002; Hyland, 2000, 2002a, 2004b; Liardét, 2016; Tang & John, 1999; Swales, 2001; Swales & Feak, 2012). The corpus-based lesson development is particularly useful in that students can examine the authentic and natural use of the target linguistic features characteristic of academic written registers. Through the expanded context, students can observe and learn how grammatical features and choices contribute to rhetorical functions.

Through these lessons, students learn to develop an academic argument through a discussion essay by integrating ideas from source texts for justification. A discussion essay is used as a medium for learning academic arguments and language features as it provides a broader context with a clear purpose that gives rise to lexico-grammatical choices for constructing meaning in context and producing rhetorical effects. Therefore, these four lessons are designed to facilitate and enrich students' construction of meaning valued in academic writing as shown in Table 1.

Table 5.1 Relationship of Different Types of Meaning, Linguistic Realizations, and Rhetorical Functions

Types of meaning	Linguistic realizations	Rhetorical functions
Ideational meaning - a need to build field knowledge (i.e., content, ideas) (experiential meaning) and relationship between ideas (logical meaning).	Transitivity, lexical choice, verb type, reporting verbs, verb form or tense, human agency, reference, projection (attribution to sources), expansion	Enacting interaction with readers, acknowledging possible views, revealing/masking personal voice, reducing criticism/skepticism, defending a position against criticism, expressing/removing personal stance, emphasizing/obscuring responsibility, increasing argument credibility, enhancing readers' understanding
Interpersonal meaning - a need to create involvement or enact interaction with readers (i.e., shared values, beliefs, power, solidarity)	Modality (hedging/boosting), qualification, evaluation, self-reference (author pronouns), human agency, passive structures, nominalization, inanimate subjects, human/non-human general subjects, anticipatory "it", reporting verbs, citation forms	
Textual meaning - a need to organize a cohesive and coherent text; that is, configuring ideational and interpersonal meanings in discourse	Theme/rheme, reference, cohesive device or connective, lexical choice, active/passive structure, nominalization, summary words (retrospective labels)	

The design of these lessons is theoretically underpinned by SFL (Halliday 1994; Knapp & Watkins, 2005; Martin & Rothery, 1993) because it foregrounds three kinds of meaning in context: ideational meaning, interpersonal meaning, and textual meaning.

These meanings are simultaneously made by a writer's need to perform rhetorical functions which are realized through a broad range of lexico-grammatical features and patterns. Some patterns serve several rhetorical functions. For instance, a passive structure can be rhetorically deployed to background authorial agency and subjective voice and to establish textual cohesion, rather than syntactically as a moral strategy of paraphrasing to avoid plagiarism.

2.3 Apply Theoretical Principles in WAW Lessons

The theoretical principles of cognitive and social constructivism are translated into instructional applications to facilitate students' diverse needs of learning. Cognitive constructivism posits that learning takes place due to self-construction of knowledge and exposure to a multiplicity of perspectives (Driscoll, 2005; Kamii, 1984). However, social constructivism holds that learning occurs as a result of meaningful collaboration among students; less skilled students are assisted to learn by more capable peers (Liu & Mattews, 2005; Lantolf & Thorne, 2007). These two orientations to knowledge are implemented in a complementary way.

2.4 Formulate Instructional Strategies in WAW Lessons

Instructional strategies are implemented to facilitate students' two styles of learning as informed by cognitive and social constructivism. In a cognitive constructivist principle, the WAW lessons consist of online practice, exercises, end-of-lesson tests and resources for students to study on their own out of class. By working online, they can make their own choices of materials and study as many times as they need regardless of time and place. In a social constructivist principle, students are assigned to work on collaborative activities in groups where they discuss and exchange ideas.

2.5 Select Delivery System of WAW Lessons

WordPress is selected as a delivery system to present the WAW lessons. It offers a variety of functional tools and add-on plugins that support resource management, composing process, and learning activities. The design of online learning environments on WordPress is underpinned by the principles of cognitive and social constructivism. For example, discussion tools (e.g., BuddyPress, bbPress) are used to create both group and class forums. These forums serve as venues for students to have online discussions and communicate with their learning peers when they need assistance to solve language problems. Meanwhile, quiz tools (e.g., Wp-Pro-Quiz) are adopted to develop exercises and end-of-lesson tests where students can practice independently out of class.

2.6 Design Instruments for Evaluating Performance

Evaluation instruments are designed in parallel with the performance objectives for judging performance in two phases: formative and summative evaluations. They are designed to assess students' learning process and achievements. In formative evaluation, students have to perform exercises, assignments, and quizzes while they are required to complete one timed writing task as pretest and posttest in summative evaluation.

3.0 Develop

The information obtained from Phases 1.0 and 2.0 serves as a guiding set of data for devising an instructional plan on teaching and learning activities as well as instructional materials as online lessons to support such teaching and learning activities in the present project.

3.1 Devise Instructional Plan for WAW Lessons

This instructional plan (or lesson plan) serves as a guideline for organizing teaching and learning activities for the WAW lessons. Specifically, it identifies what

students learn, in what ways lessons are delivered, how learning activities are organized, how much time is required for each activity, and how students' performance is assessed. In this lesson plan, the teaching and learning activities are organized in a way that incorporates the concepts of cognitive and social constructivism as explained in the design phase.

3.2 Produce the Prototype of WAW Lessons

This step aims at developing learning resources for students to practice and improve their academic writing skills. The WAW lessons involve two related sets of activities: inside the classroom and outside the classroom. In-class activities include discussions of concepts, collaborative & individual work, and feedback conferencing. In contrast, out-of-class activities consist of online exercises, end-of-lesson tests, collaborative & individual work, and other useful resources. They are presented via WordPress where students can study and practice autonomously both in groups and on their own. In addition, WordPress are installed with necessary tools (e.g., BuddyPress) that can facilitate writing process, teacher & peer review, and discussions.

3.3 Validate the Prototype of WAW Lessons

Two content experts were invited to validate the prototype of the WAW lessons as a means of selecting pre-use materials. These experts are experienced instructors at UBU who have taught academic writing for more than 10 years. One of them conducted her PhD thesis drawing on the concepts of SFL. In validation, they checked if the WAW lessons were corresponding to teaching goals, reflective of authentic academic writing, and useful for students in academic writing. The validated WAW lessons were delivered on WordPress and formatively assessed during the process of developmental testing.

4.0 Assess

The developed WAW lessons were initially trialed for 20 hours with 31 English-major students to determine the efficiency of process (E_1) and product (E_2), with the proposed 80/80 criterion, developed by Brahmawong (2013). These 31 students were then divided into three groups according to three phases of developmental testing: individual testing (n = 3), small-group testing (n = 6), and field testing (n = 22). The first two phases recruited equal numbers of participants in each different level of proficiency (high, mid, low). However, in the field testing, the participants were considered to be mixed-ability learners since it was impractical to reach equal numbers in each level of proficiency. This technique was performed to ensure that the WAW lessons could benefit different numbers of learners at the same time and serve learners with varying levels of proficiency.

5.0 Implement

The revised WAW lessons were fully implemented for 20 hours over a period of 10 weeks with 33 English-major students who registered for Academic Writing to ascertain the efficiency and effectiveness. During the implementation, they were required to study on two complementary platforms that combined face-to-face instruction and web-based learning activities. In-class activities included discussions of concepts, collaborative & individual works, and feedback conferencing. In contrast, out-of-class web-based activities consisted of reinforcement exercises, end-of-lesson tests, collaborative & individual works, and other useful resources. See Appendix A for more detailed teaching and learning activities.

6.0 Evaluate

This final phase includes two types of evaluation: formative and summative. These formative and summative evaluations were conducted respectively to measure the students' process and product and to ensure that the process and product of each lesson achieved the designated 80/80 criterion and contributed to the students' writing achievements.

The formative evaluation intended to explore the students' learning process and product. During the process, the students were required to study a variety of topics in each lesson online and then complete exercises and end-of-lesson tests individually. The performance scores from each individual student were calculated to determine the efficiency values. The obtained percentages indicated the students' learning process and learning product.

The summative evaluation intended to investigate the students' learning achievements at the end of the course. To measure this learning evidence, the students were required to complete one writing task as pretest and posttest that demanded them to compose a source-integrated discussion essay of at least 300 words. The pretest was given before the treatment while the posttest was given after the treatment. The pretest and posttest performances were considered to compare the students' writing achievements.

In summary, the WAW Instructional Model consists of three core elements: a genre-based approach as an instructional framework, web-based technology as a learning support tool, and constructivism as a theoretical framework. The integration of these elements constitutes an integrated framework for designing and developing online genre-based lessons and instruction to support Thai EFL university students' academic writing.

5.3 Overview of WordPress-based Academic Writing (WAW) Lessons

This section provides the overview of the support system designed to deliver the content of the WAW lessons. The website URL is www.ubueng.net, powered by WordPress, a user-friendly, responsive, and functional LMS for managing online courses and learning activities.

5.3.1 Homepage

The students are required to create their personal account, so that they can have a full access to the lessons. Once they are logged into the website, they are redirected to the homepage where they find the main menus, the class notices, and the recent topics posted on the forums. The sample pages of the WAW lessons are presented in Figure 5.2.

Figure 5.2 Homepage of the WAW Lessons

5.3.2 Lesson Structures

The WAW lessons were designed and developed around the concepts of a semantically-driven approach underpinned by SFL (Halliday 1994; Knapp & Watkins, 2005; Martin & Rothery, 1993). The emphasis on semantics could enhance students' understanding and awareness of language choices available to them as writers, so that they could decide how best to project their authorial voice and at the same time respond to the expectations of their imagined readers. The WAW lessons contain a set of four lessons organized by focused aspects as presented in Figure 5.3.

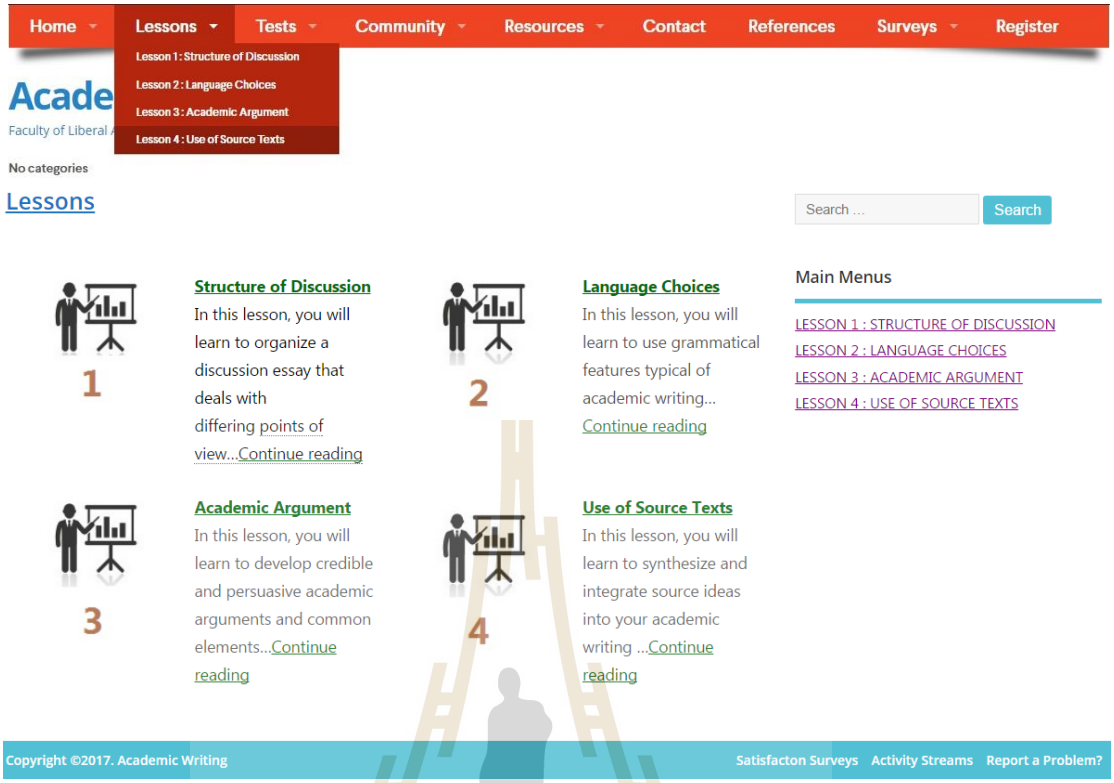


Figure 5.3 Content of the WAW Lessons

Each lesson contains the objectives, the content, and the exercises. The objectives can keep the students focused and assist them in self-evaluating their performance. Regarding learning contents, they can choose desired topics to learn on their own and then strengthen and apply their knowledge by completing various exercises. Figure 5.4 presents the sample structure of Lesson 2.

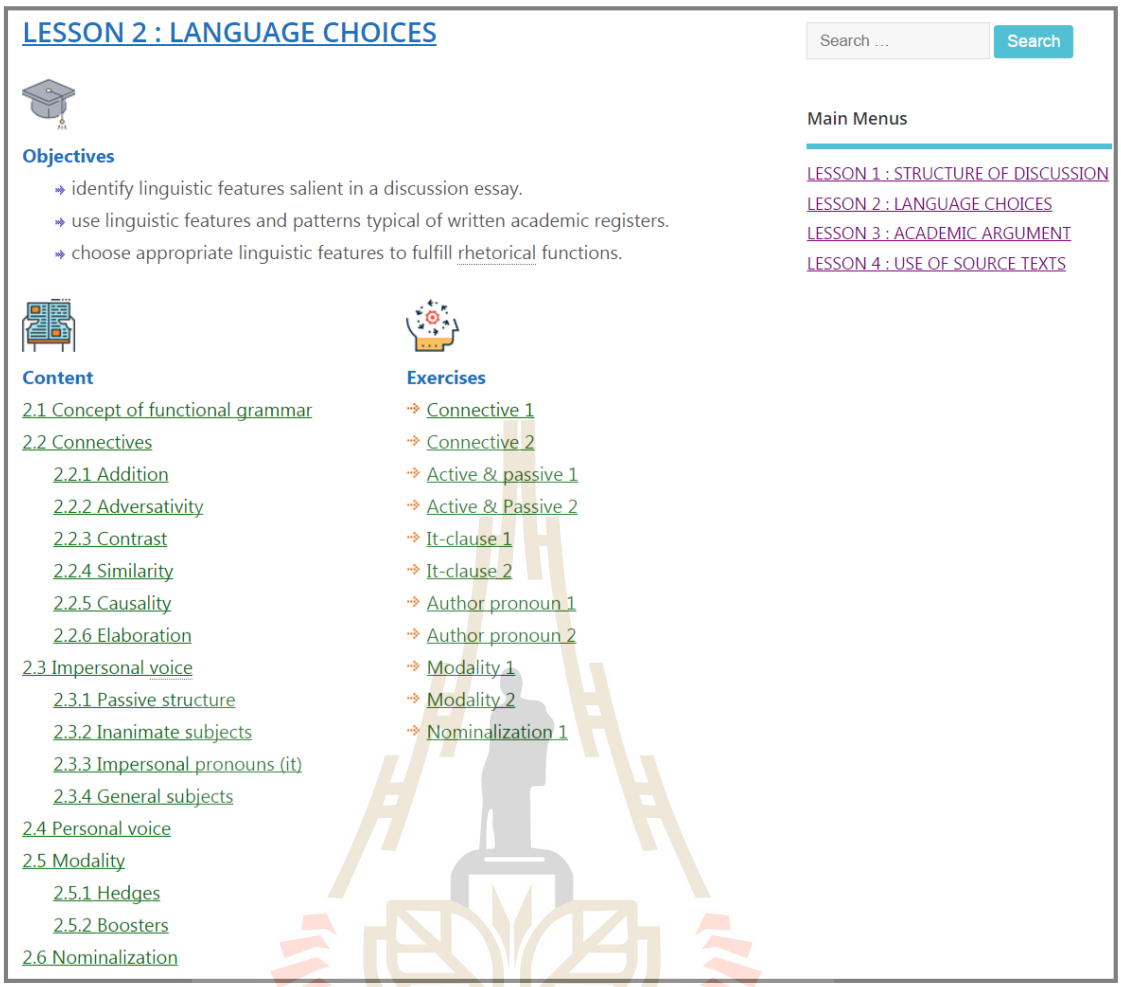


Figure 5.4 Structure of the WAW Lessons

5.3.3 Sample Lessons

This section presents the sample lessons which the students can learn online on their own out of class.

5.3.3.1 General Subjects

One important topic on general subjects in Figure 5.5 exposes the students to issues of subjectivity and credibility. The students can employ general subjects, either human or non-human entities, as a rhetorical strategy when they need to remove their explicit agency and enhance the credibility of their claims. In addition to lexical

choices of general subjects, they can observe grammatical patterns in which present perfect tenses are usually required.

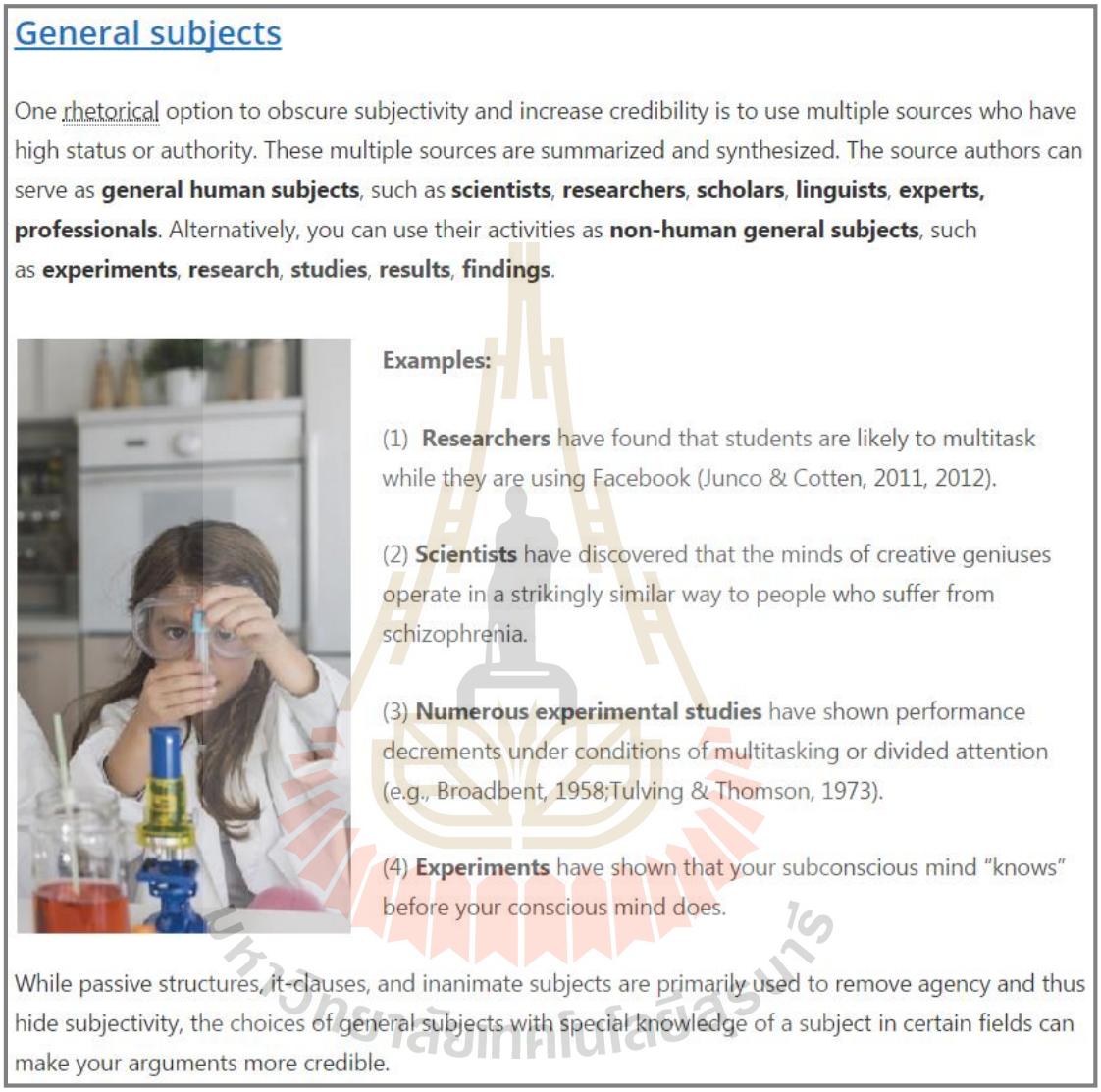


Figure 5.5 Sample Lessons on General Subjects

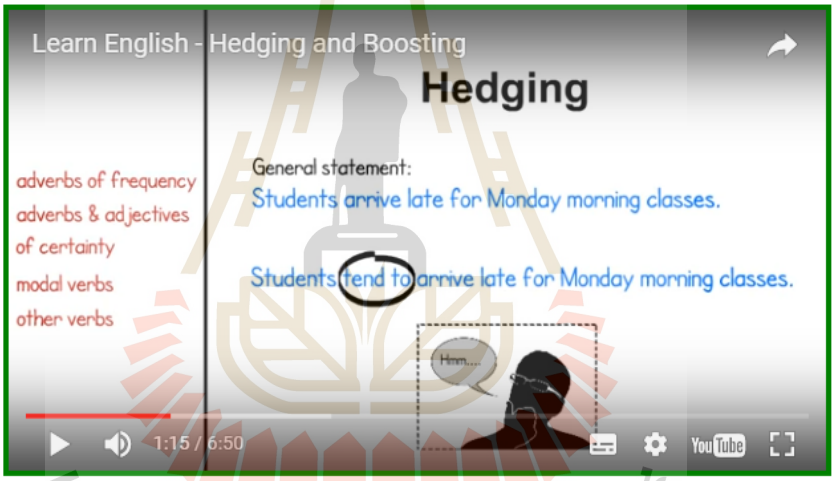
5.3.3.2 Modality

The students can learn and employ modality as a linguistic resource for indicating their actual degrees of position, judgment, and confidence in their claims in relation to absolute facts. In academic writing, modality is used as hedging and boosting

devices to respectively express probability, convey modesty or respect, reduce criticism, and acknowledge other possible views, and display a high degree of certainty, confidence, and responsibility. In this modality topic, the students can watch a supplementary video to deepen their understanding (see Figure 5.6).

Modality

Modality is used to indicate a degree of a writer's position, judgment, and confidence in his/her claims in relation to absolute facts (knowledge). In academic writing, modality is used as hedging and boosting devices to imply that claims are qualified based on plausible reasoning rather than absolute facts. This depends on what you think and what you know.



Hedges allow writers to express probability, convey modesty or respect, soften generalization, and remove themselves from strong or unjustified claims. Essentially, they function to lessen certainty, obscure responsibility, reduce rejection, and soften criticisms from readers.

Hedging markers

Modals	Verbs	Adverbs	Adjectives	Nouns
may, might, should, could, would	seem, appear, tend, suggest, believe, think, claim, argue,	possibly, probably, presumably, relatively, generally,	possible, probable, plausible, likely, unlikely, apparent,	possibility, probability, tendency,

Figure 5.6 Sample Lessons on Modality

5.3.3.3 Nominalization

The sample topic in Lesson 2 on nominalization in Figure 5.7 sensitizes the students to the dominant nature of academic writing. The choice of nominalization enables the students to perform various rhetorical functions in their argument, e.g. removing human agency, crafting a formal style of writing, textual cohesion, and logical coherence.

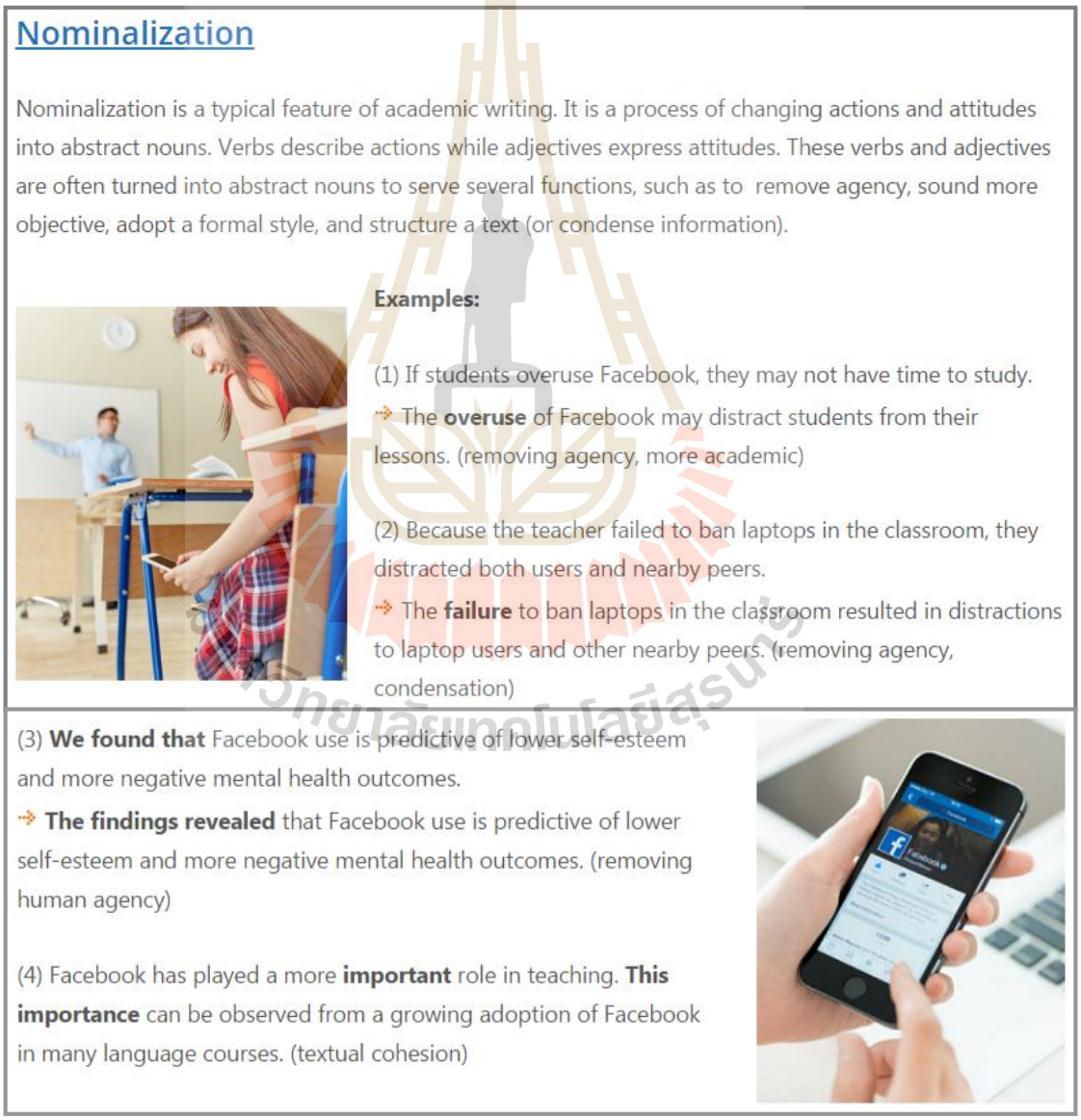


Figure 5.7 Sample Lessons on Nominalization

5.3.3.4 Tenses in Citation

The sample topic in Lesson 4 in Figure 5.8 features the use of tenses in citations, an essential issue that the students need to know when they report other cited sources to justify their own argument. The focus of this topic is on how different tenses are chosen to create rhetorical effects on readers rather than to represent events or ideas in different times determined by time markers. The choices of tenses made by the students can affect their argument. They can represent source ideas or works in different ways depending on their intended purposes. For example, they can draw directly on other studies' research findings or interpret those findings in order to consolidate their claims. These purposes of source uses require different types of tenses.

There are three tenses commonly used in academic writing (Caplan, 2012; Swales & Feak, 2012): past tense, present simple, and present perfect. Past tense is used to report past research activities (e.g., procedures, findings) by single studies in specific contexts, functionally intended to elaborate and support general claims. Citations with present tense are commonly used with famous sources, established facts, generalizations, current states of knowledge, discussions of research results, and authorial stance (e.g., feelings, evaluation). Citations with present perfect functions to make references to areas of inquiry, synthesize previous research with general subjects, and indicate a connection between the past research and the current work.

Present perfect

Citations with present perfect functions to make references to areas of inquiry, synthesize previous research with general subjects (e.g., studies, researchers, introductory 'it'), and indicate a connection between the past research and the current work (Caplan, 2012; Hawes & Thomas, 1997; Swales & Feak, 2012).

Examples:

(1) Facebook **has been** the most researched platform for teaching and learning (Manca & Ranieri, 2013; Tess, 2013). In their review, Manca and Ranieri (2013) discovered 23 empirical studies of using Facebook as a learning environment.
–> making reference to areas of inquiry

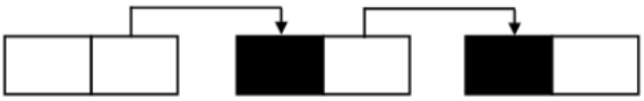
(2) While Facebook use can help students develop new connections in their transition to college, researchers **have found** that students are likely to multitask while using the platform (Junco & Cotten, 2011, 2012).
–> summarizing the findings from previous research

Figure 5.8 Sample Lessons on Tenses in Citation

5.3.3.5 Integrating Sources

It is essential that the students create a smooth and logical flow of text when they draw on external sources to develop and justify their argument and position. To accomplish this source-based writing task, they should make sure that source materials are clearly integrated and distinctive. This following topic in Figure 5.9 is one strategy that can assist them in constructing a cohesive and coherent argument when they integrate source ideas with their own ideas into their academic writing.

Constant progression



However, a new kind of caffeinated drink has become increasing popular, namely **functional energy drinks (FEDs)**. **FEDs** are marketed as products that can improve both mental and physical performance.

The connection of information follows a pattern of 'old-to-new' in which the given information at the end of the first sentence (i.e., functional energy drinks (FEDs)) is repeated at the beginning of the next sentence. This repeated information then serves as a sentence subject that functions to introduce the new information (i.e., mental and physical performance).

Text 3 (Sample authentic text)

Evidence points to the fact that, in general, test anxiety lowers performance slightly. **This relationship** has been studied for well over 60 years. **During that time**, some studies have reported that test anxiety does not lead to lower results (Burns, 2004; Sansgiry, Bhosle, & Sail, 2006). However, **these findings** are not likely to be true of all students. *(this relationship = summary word)

Figure 5.9 Integration of Internal and External Ideas

5.3.4 Practices and Exercises

This section presents the types and formats of practices and exercises on which the students are assigned to work out of class to reinforce their understanding of focused topics.

5.3.4.1 Practices

There are seven out-of-class practices designed in addition to exercises to enhance the students' understanding of various focused topics, such as understanding elements of argument, understanding rhetorical functions, developing preview (thesis statement) for a discussion essay, identifying research verbs and functions, developing discussion paragraphs, identifying verb tenses, and deploying an interpretation strategy in paraphrasing. Through these practices, the students were assigned to work both

individually and collaboratively and exchange their answers on the class and group forums. In some practices, however, the questions and answers were synchronously discussed during face-to-face sessions to accommodate the students' further questions for clarification.

Figure 5.10 presents Practice 1 : Understanding Argument and Figure 5.11, the students' response on the group forum. This out-of-class practice is intended to increase the students' understanding of argument elements and functions. In a group of 3-4 people, the students were assigned to watch a short video on a rousing call to educators to create relationship with students at a real, human, personal level. In this practice, the students were required to analyze the elements of argument and linguistic features that contributed to rhetorical functions and hence persuasion. The analysis was guided through two provided sets of questions focusing on argument and language.

Figure 5.10 Practice 1 : Understanding argument

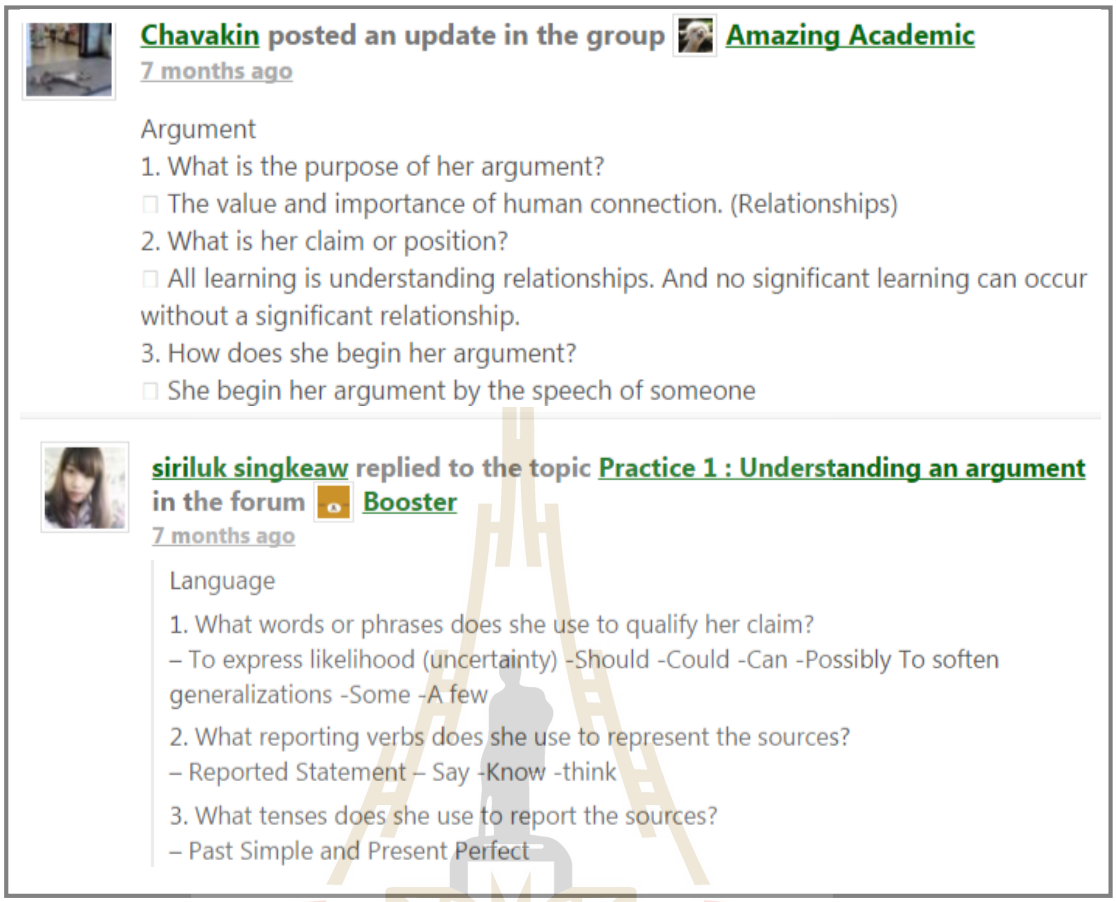


Figure 5.11 Students' Sample Responses

5.3.4.2 Exercises

This exercise section consists of a variety of reinforcement exercises, such as multiple choices, sorting, matching, gab-filling, and arranging. By completing these exercises, the students can consolidate their understanding of and assess their performance of course concepts and language features and identify specific areas that need improvement. In each task, they are able to perform exercises in each lesson up to three attempts inside and outside the classroom. The performance scores are reported immediately upon submission.

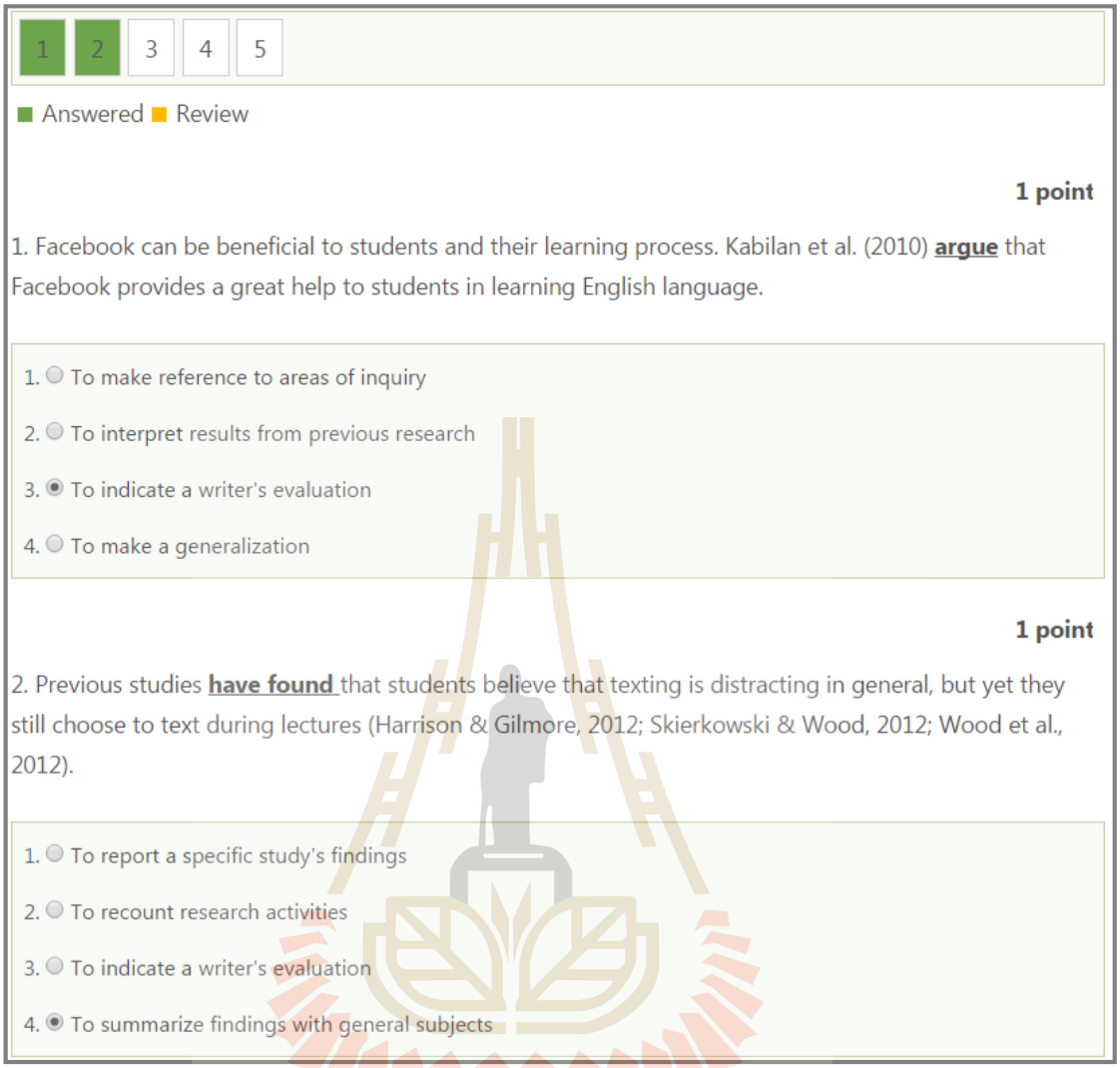


Figure 5.12 Multiple-choice Exercise on Tenses in Citation

Figure 5.13 shows the matching exercise that aims at measuring the students' knowledge of the functions of *it*-clauses. In academic writing, impersonal "it" (also known as anticipatory "it" and introductory "it") is constructed in complement clauses (e.g., that-clause, to-clause) instead of explicit personal structures (e.g., I think that…, I believe that..., We feel that…) to obscure subjectivity.

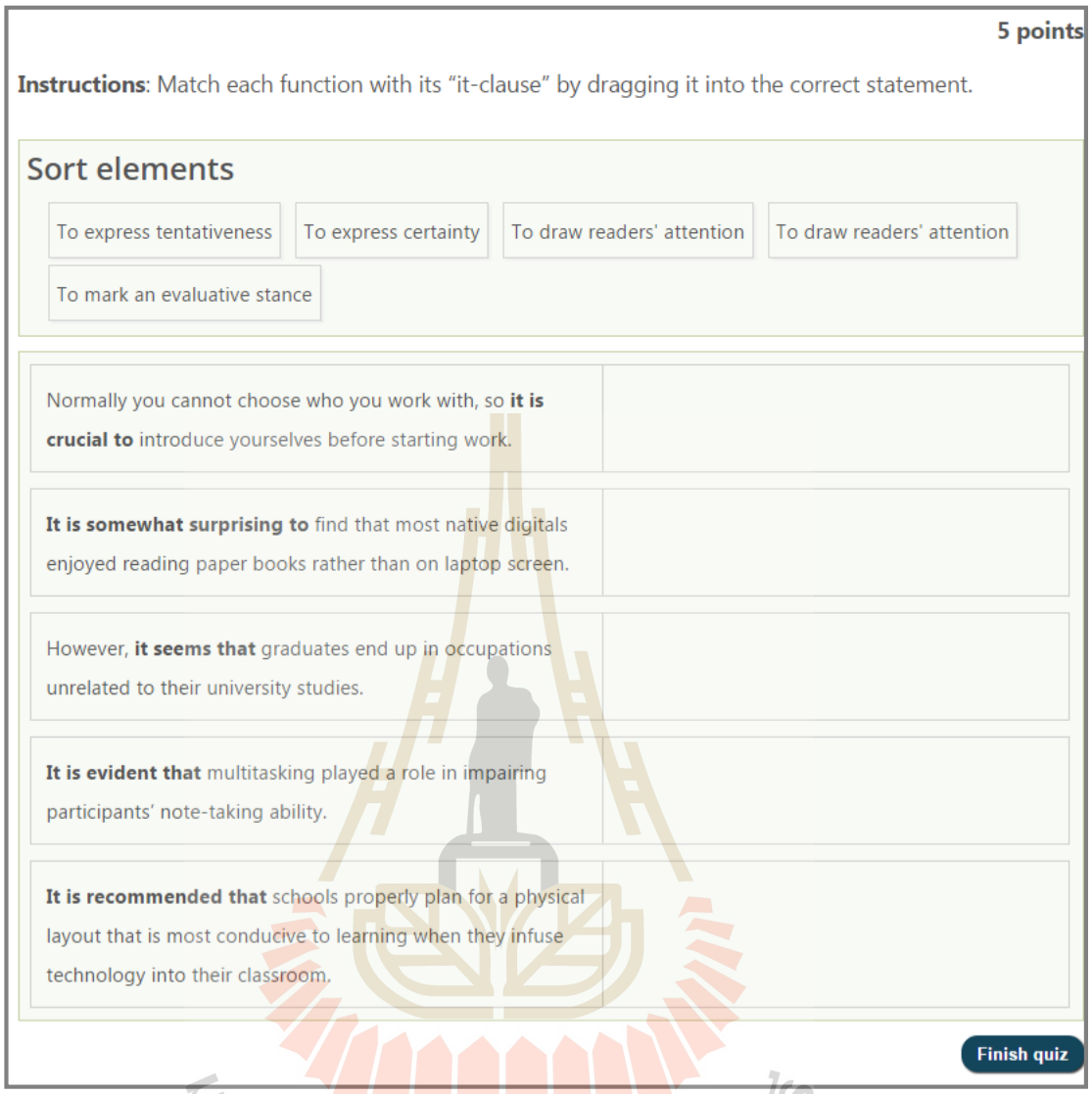


Figure 5.13 Exercises on *It*-clauses

In some exercises, useful hints (see Figure 5.14) are provided to assist the students in answering questions that tend to be beyond their capability to solve, especially at their first attempt. The hints are useful in that they encourage the students to think more deeply when they make a greater effort to solve a difficult question. The students are informed if there is a hint before they perform an exercise.

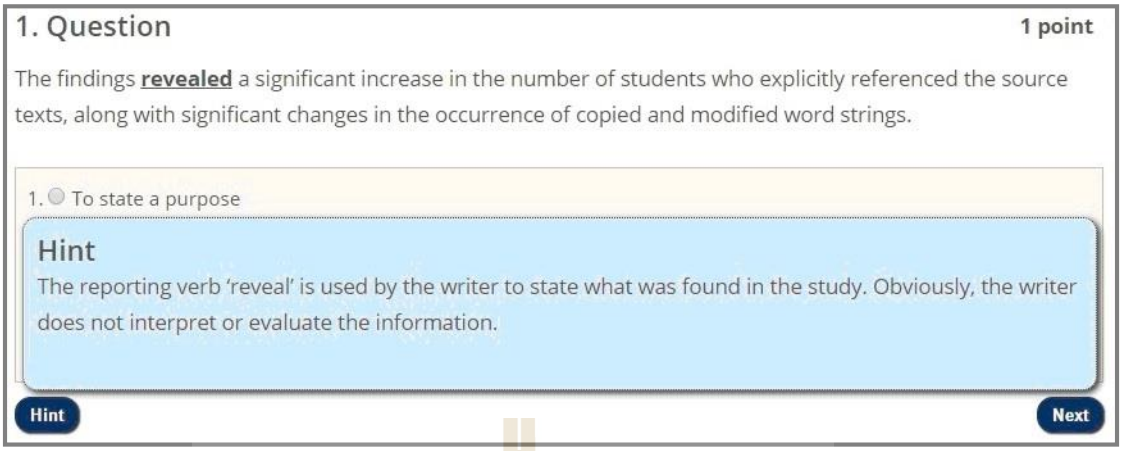


Figure 5.14 Hints to Exercises

5.3.5 End-of-Lesson Tests

The students can take end-of-lesson tests after learning each lesson to evaluate their overall knowledge of the covered topics and determine the degree to which they have achieved the learning objectives. The end-of-lesson tests are divided as shown in Figure 5.15.

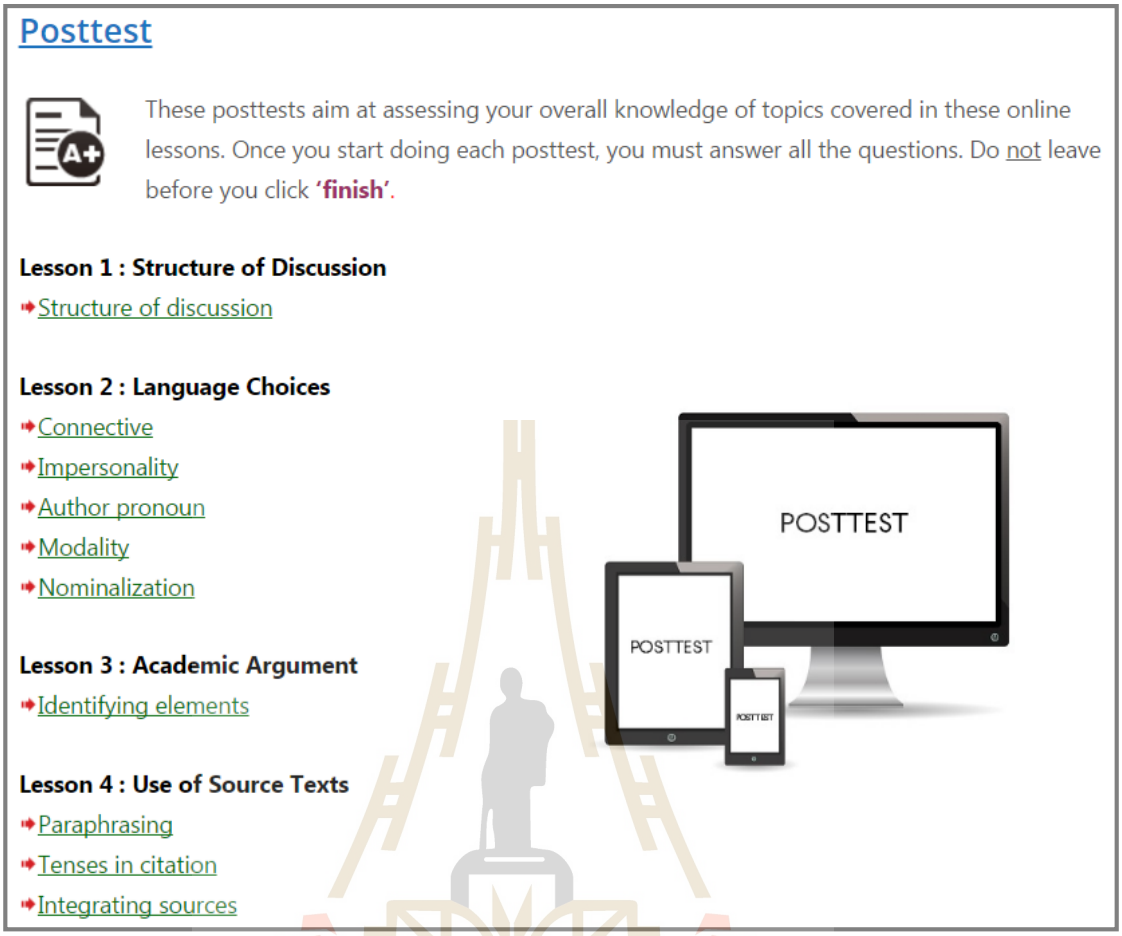


Figure 5.15 End-of-Lesson Tests

5.3.6 Learning Community

The online support system has both group and class forums that support and facilitate discussions and collaborative activities. Through these forums, the students can exchange useful resources, perspectives, and feedback. Figure 5.16 presents the online community platform.

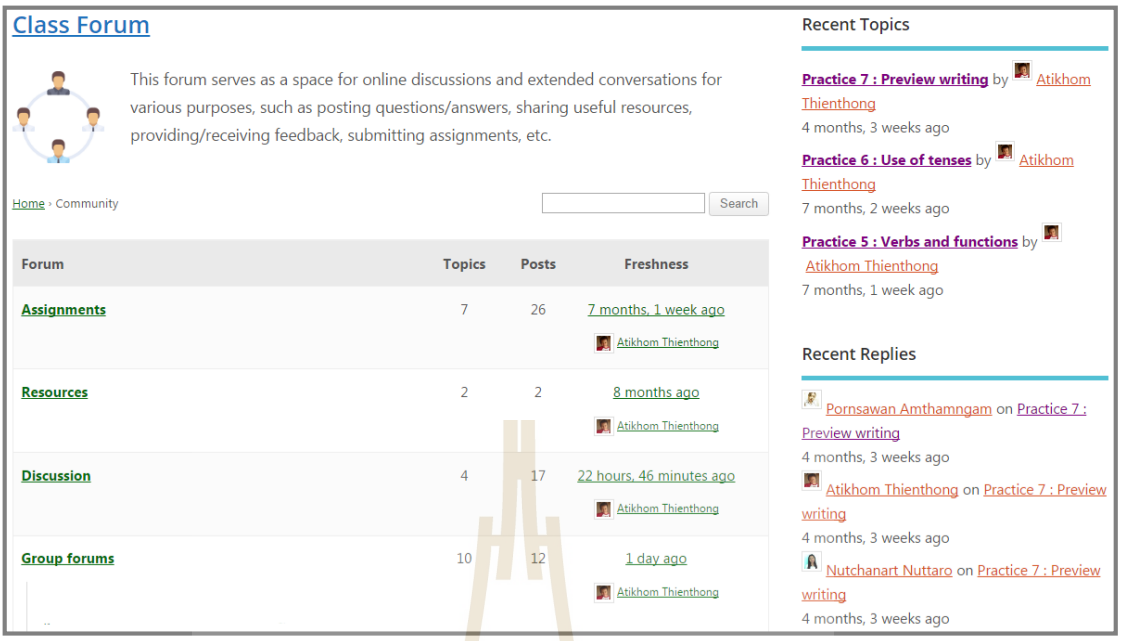


Figure 5.16 Online Community Forums

The online learning community can serve as a platform for both in-class and out-of-class discussions. These online discussions are a great tool to extend classroom conversations and facilitate perspective sharing that can simultaneously reach different types of learners. Figure 5.17 displays the discussion prompt and Figure 5.18, the students' responses.

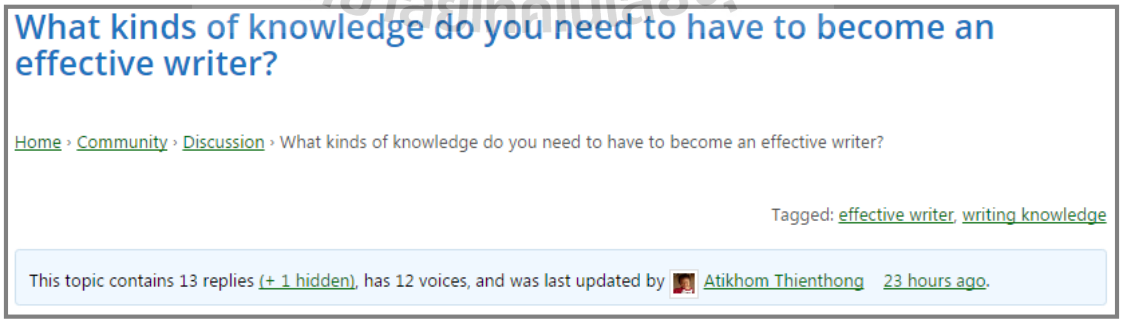


Figure 5.17 Discussion Prompt

Figure 5.18 Students' Responses on the Forum

It can be seen that WordPress can be adopted for various teaching and learning purposes. It is deployed as a CMS to manage online learning materials and design online reinforcement exercises to cultivate self-regulated learning and practice out of class. Also, it is harnessed as an online learning community that enables online discussions and extends classroom conversations.

5.4 Implementation of WordPress-based Academic Writing (WAW) Instructional Model

The WAW Instructional Model may interest other instructors who are looking for web-based academic writing lessons. In order to implement it successfully, they need to consider these following factors: course requirements, technology-related policy, and infrastructure and support facilities.

5.4.1 Course Requirement

Instructors need to understand the nature of language skills and identify needs for technology-supported instruction. It is generally recognized that writing requires a broad range of knowledge with which students have to deal simultaneously. Given this demand, writing is a thoughtful and time-consuming process as it involves various activities from both teaching and learning perspectives. Thus, it may not be sufficient for students to write and learn to write merely in the classroom. In fact, when they produce an academic prose in order to gain acceptance from readers, they need considerable time in reading, planning, writing, and reviewing. Going through these activities, most students have a high tendency to work in a non-sequential and recursive

manner. This phenomenon suggests that each individual student may learn and write in their preferred way which can be accommodated by the assistance of technology.

5.4.2 Technology-related Policy

Once the course requirements are identified, it is imperative that instructors study the statements of policies relating to the application of digital technology into pedagogical practices. Usually stated in a strategic plan and ICT masterplan, these policies should be shared with key stakeholders (e.g., administrators, instructors, students, and technical staff), so that they can take their responsibility for their own function by working towards the same commitment. For example, administrators should promote instructors to create online courses and allocate regular budgets to support online instruction. Instructors should review their instructional practices and develop online learning activities to extend students' learning experience in response to the course requirements. For students, they are encouraged to think that learning does not take place only in the classroom; they need to take charge of their own learning as guided by course goals. Finally, since most instructors do not have a strong level of technical knowledge, technicians should be available to provide technical assistance and maintenance.

5.4.3 Infrastructure and Support Facilities

It is vitally important that instructors consider the readiness of infrastructure and support facilities which play a very crucial role in implementing online teaching and learning activities effectively. They have to make sure that all necessary hardware and software systems are installed to support the operation of the Internet to which students can have convenient access throughout the campus through their own digital devices. In addition, there should be sufficient Internet-connected computers and laboratory

rooms to supply the demands of web-based courses and students. The computer-equipped rooms can serve as good alternative locations for students' independent learning.

5.5 Summary

This chapter details the 6 phases and 14 steps of the WAW Instructional Model that operationalize a genre-based approach to academic writing, web-based technology as a support learning tool, and constructivism as a theoretical foundation for learning. Next, it describes the major components of the WAW lessons that support the students' online learning. In addition, it presents some considerations on the implementation. The next chapter will conclude the present study and presents recommendations for further research.

CHAPTER 6

CONCLUSIONS AND RECOMMENDATIONS

This chapter concludes the thesis, organized into three sections. First, it commences with the summary of the major findings. Second, it presents the pedagogical implications and limitations of the study. Finally, it ends with the recommendations for further research.

6.1 Summary of the Study

The main purpose of this study was to construct a WordPress-based Academic Writing (WAW) Instructional Model as a guiding conceptual framework for developing web-based academic writing lessons (or WAW lessons) to improve undergraduate students' academic writing skills. The study was guided by these following research questions:

1. What are the elements and logical steps of developing a WordPress-based Academic Writing Instructional Model?
2. What is the efficiency of WordPress-based Academic Writing lessons based on the 80/80 standard?
3. What is the effectiveness of WordPress-based Academic Writing lessons on the students' writing achievement?
4. What are the levels of the students' satisfaction with WordPress-based Academic Writing lessons?

The study was carried out in two necessary phases: development phase and research phase. The development phase involved constructing the WAW Instructional Model and initially trialling the WAW lessons to determine the efficiency. The WAW Instructional Model was developed as a conceptual framework for operationalizing a genre-based approach to academic writing, web-based technology as a content management tool, and constructivism as a theoretical underpinning. The development was informed by the coherent synthesis of the elements and features of three ISD models: ADDIE (Gustafson & Branch, 2007), KEMP (Morrison et al., 2011), and SREO (Suppasetseree, 2005). The prototype was then reviewed and evaluated for its applicability or usefulness by three teaching professionals. Once it was approved as a viable conceptual framework, the WAW lessons were developed accordingly.

The WAW lessons were subsequently tried out with 31 students to determine the efficiency based on the 80/80 criterion through three developmental testing steps: individual testing (n = 3), small-group testing (n = 6), and field testing (n = 22). The purpose of this efficiency testing was to ensure that the WAW lessons could serve different numbers of students with varying levels of proficiency. The first two testing phases revealed that the efficiency index was below the 80/80 criterion, indicating that the WAW lessons needed to be revised primarily according to the students' comments and suggestions. After the revisions, they were re-implemented in the field testing. The results showed that the WAW lessons achieved the 80/80 criterion, which suggests that they were ready for a full-fledged implementation in the research study.

The research phase entailed fully implementing the WAW lessons with 33 students who enrolled in Academic Writing. Before the intervention, they were required to write a discussion essay as a writing pretest in order to measure and keep

track of their writing performance in a period of 20 hours. During the intervention, they studied on two complementary platforms: face-to-face and online learning activities. In-class activities included discussions of concepts, collaborative & individual works, and feedback conferencing. In contrast, out-of-class activities consisted of online reinforcement exercises, end-of-lesson tests, collaborative & individual works, and other useful resources. After the intervention, they were required to take the posttest of the same version as the pretest. Then, they were asked to complete a satisfaction questionnaire, and 10 of them were invited for semi-structured interviews. The major findings are summarized based on the research questions as follows:

1. The WAW Instructional Model, consisting of 6 phases and 14 steps, was evaluated as very appropriate with a total mean of 4.53 out of 5. The phases included Analyze, Design, Develop, Assess, Implement, and Evaluate which were logically displayed to represent the actual process and practices. They served as primary guidelines for systematically constructing the WAW lessons around the proposed concepts of a genre-based approach, constructivism, and web-based technology.

2. The efficiency values for the process and the product (E_1/E_2) of Lesson 1, Lesson 2, Lesson 3, and Lesson 4 were 82.01/81.13, 82.22/81.01, 82.58/82.12, and 82.02/81.01 respectively, which achieved the designated 80/80 criterion. This result indicates that the lessons were efficient in accommodating the students with different levels of proficiency. The students' performance in the process and the product was observed to be consistent; they performed well on both the exercises which contributed to their good performance on the end-of-lesson tests.

3. The students' writing achievements demonstrated that they performed significantly better on the posttest ($\bar{x}$ =60.77, SD=11.80) than the pretest ($\bar{x}$ =24.89, SD=8.28) their academic writing abilities $t(32)=17.34$, $p<.01$). Regarding each individual writing domain, there was also a statistically significant difference in content, organization, language, and reference between the pretest and posttest at $p<0.01$. The follow-up qualitative analysis revealed that the students extended their lexico-grammatical resources characteristic of academic written registers and deployed a greater number and broader variety of lexico-grammatical features to accomplish rhetorical functions.

4. The questionnaire results showed that the students were very satisfied with the WAW lessons with a total mean of 4.23 out of 5 because the lesson contents were useful for their present writing course ($\bar{x}$=4.67) and future writing situations ($\bar{x}$=4.85). This finding was verified by their interview responses. Most of the 10 students found that the lessons were useful for their writing tasks and other courses. They could improve their knowledge of academic writing and become more aware of linguistic choices and their functions to develop a sense of authorship and readership for credible and persuasive arguments.

6.2 Pedagogical Implications

The findings from this study suggest several pedagogical implications for academic writing in various aspects.

6.2.1 Online Course Design

The findings of this study suggest that the principles of ISD play a pivotal role in developing online courses that need to adopt support technology and address

theoretical foundations. This study can provide course designers with clear and logical steps for translating learner needs and theoretical principles into optimal practical actions and working plans (Ertmer & Newby, 2013). Specifically, they can identify necessary activities from analysis to evaluation, e.g. identifying instructional and learner needs, formulating learning goals, constructing learning conditions, devising instructional plans, developing support materials, selecting support tools, and constructing evaluation methods (Richey et al., 2011). These activities are performed in a systematic way that allows course designers to revise and improve instructional activities and learning materials to meet learners' special needs. In terms of a course design, this study believes that its findings would contribute not only to other academic writing courses but also other courses that need to integrate technology elements in a more principled way.

6.2.2 Self-regulated Learning Environment

The design of online learning environments that promote students' autonomous and scaffolded learning should prioritize these two aspects as suggested by this present study. First, online resources need to be sufficient and useful for students to understand and complete their given tasks (Shee & Wang, 2008). When designing online environments, instructors should include necessary and relevant materials students can select to serve their just-in-time needs and solve their problems (Jonassen, 1999). Importantly, information should be presented in multiple ways (e.g., documents, graphics, videos) to accommodate students' diverse styles of learning (Gardner, 2011). Second, the teacher-dependent characteristics of most Thai students (Jarvis & Atsilarat, 2004; Phungphol, 2005) suggest that providing assistance when they need is still necessary although they are encouraged to study on their own out of

class. When they encounter unfamiliar concepts and difficult problems, they can consult with their instructor and classmates who can serve as a “scaffolder”.

6.2.3 Learning Materials on Grammar and Writing

This study could be of great benefits to the development of meaning-driven learning materials on grammar and writing. In a SFL notion, grammar is deployed as a resource for conveying a message in a situation with a simultaneous focus on three kinds of meaning: ideational meaning, interpersonal meaning, and textual meaning. These meanings are constrained by a context where they are construed to perform certain functions (Martin, 2009). This means that it is impossible to separate grammar from writing; teaching grammar should not be treated as a stand-alone enterprise. Rather, grammar should be taught and learned through writing that represents a network of semantic systems (Hasan, 2009). Therefore, materials writers can adopt a semantically-driven approach to designing learning materials that integrate grammar into writing and regard grammar as a device for rhetorical effects in writing. They may begin with a list of grammatical forms typical of academic register which is likely to be more similar to students and move on to a less accustomed concept--rhetorical functions. These functions are performed in context by certain deliberate choices students can make from a repertoire of grammatical resources available to them. In this way, students can enhance their understanding and awareness of linguistic structures and rhetorical functions.

6.2.4 Changing Conception of Academic Writing

Many students’ and even some instructors’ attitudes towards the concept of academic writing should need to be rectified; some teaching and learning practices should be reconsidered. They still misperceive that writing is an extension of

grammar practice, so they tend to focus mainly on grammatical accuracy divorced from content and situation. Indeed, it is recognized that writing is a meaning-making process that involves deploying grammar as a resource for expressing ideas in response to a writing situation with a communicative purpose. This situation encourages students to consider a context of writing, including purpose, writer, text (genre), and readers (Matsuda, 2007). By examining these contextual variables, they can develop more critical thinking and awareness of grammatical choices available to them as writers in a particular writing situation. These linguistic options serve as rhetorical devices for them to manage their projection of personality (e.g., attitude, opinions, commitment) in their text and respond to readers' expectations and potential negations for a persuasive argument (Hyland, 2008). This thesis therefore recommends that these interpersonal issues should be addressed at the outset in academic writing courses to assist students to conceptualize their positioning as writers who compose for a communicative purpose.

6.3 Limitations of the Study

Despite all the safeguards, there remain some shortcomings that need to be addressed.

6.3.1 Non-complete Control

The study was conducted in the regular semester. During the time, the students were attending several other courses where they could gain more knowledge or related skills that may have contributed to the outcomes of the study. In addition, since the students were encouraged to self-study out of class as many times as they

wanted, their differing efforts might have influenced the results of the study. Of course, these extraneous variables could not be completely controlled.

6.3.2 Observer Effects

The students might have responded positively in the questionnaires and semi-structured interviews because they wanted to please the researcher who also was their course instructor. This positive tendency is described as “observer effects” (Monahan & Fisher, 2010, p.357). Some students may have perceived that positive responses tended to have a positive bearing on their course grades, so they preferred to provide favorable comments.

6.3.3 Limited Generalization of Results

The study was conducted in a specific context--Ubon Ratchathani University. Given this specificity, its results may not be confidently generalized to other broader contexts. The study recruited only 64 students as the research participants, a relatively small segment of the total population. Therefore, their performances may not be representative of other undergraduate students and applicable to other academic writing courses in other universities.

6.4 Recommendations for Further Research

This thesis believes that this small-scale study raises a number of issues that merit further investigations. The following recommendations are provided for future studies as they might yield different and more valid results that will contribute to the teaching of academic writing, particularly for EFL university students.

6.4.1 Two-group Experimental Design

It is plausible that between-group comparisons may enable to uncover a significant difference. While a pretest-posttest design enables the measurement of the effectiveness of a treatment before and after implementation, a comparison involving control and treatment groups allows the determination of whether one approach is more effective in students' learning than the other (Fraenkel & Wallen, 2000). If there are no contextual constraints, it is suggested that a control-treatment design may be an alternative investigation for more reliable results.

6.4.2 Attention to Extended Context

Since this study concentrated on the teaching and learning of how linguistic forms were deployed as devices to express rhetorical functions in academic writing, more authentic samples with a longer stretch of discourse should be included to enhance students' understanding. Charles (2007) notes that rhetorical patterns are highly variable in relation to context and tend to operate over a long stretch of texts through a combination of linguistic realizations. Thus, this inclusion of context-rich excerpts will greatly assist students in observing language patterns and their rhetorical functions they serve in context and raising their awareness of how rhetorical options can contribute to academic persuasion.

6.4.3 Addressing Composing Process

Further researchers can address issues in their composing processes through follow-up interviews. They may focus on why students choose these certain linguistic forms over other possible structures, what rhetorical functions these grammatical forms perform, or why students choose to use passive rather than active structures. As for source use, some integrating techniques may be further explored as to what

strategies are employed to attribute to other source ideas or why students use certain reporting verbs to report sources. Through this process-based investigation, further research will better understand a phenomenon in inquiry.

6.5 Summary

This chapter summarizes and concludes the whole study. It suggests some pedagogical implications for instructors and course designers who might be interested in constructing an instructional model as a conceptual framework for developing theoretically-grounded online learning resources and environments. Also, it addresses some limitations and recommendations, so that future studies can safeguard their investigations for more valid results.

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APPENDICES

APPENDIX A

Lesson Plan for WAW Lessons

1. Identification
Instructor : Atikhom Thienthong
Faculty : Liberal Arts, Ubon Ratchathani University
Coordinator : Asst. Prof. Saowadee Kongpetch
Level : Undergraduate, third-year English-major students

2. Course details
Course name : Academic Writing (1421 320)
Course credit : 3(3-0-6)
Pre-requisite : Paragraph Writing, Essay Writing
Course description : Analytical reading, message interpretation, fact/opinion classification, note-taking, summarizing, academic writing for different purposes

3. Learning focus
Unit subject : Discussion genre
Time estimate : 20 hours
Unit focus : Generic structure and lexico-grammatical features of a discussion genre; Academic arguments; Integration of source materials

4. Learning goals and objectives
Students will be able to utilize reading and writing skills to construct a discussion genre effectively and appropriately. By the end of the unit, they will be able to...

- to develop a discussion genre with logical organization.
- to recognize the purposes of each stage of a discussion genre.
- to make effective linguistic choices for rhetorical functions.
- to construct credible and persuasive academic arguments.
- to integrate source materials in a credible and persuasive way.
- to adopt appropriate stances toward academic arguments.
- to use discipline-specific conventions effectively (e.g. referencing, citations).

5. Unit structure
The WAW lessons, a course unit of Academic Writing (1421 320), are specifically designed for third-year English-major undergraduates at the Faculty of Liberal Arts, Ubon Ratchathani University. They contain a set of four lessons connected by learning focus, including discussion genre, lexico-grammatical resources, academic argument, and integration of source materials.

6. Lesson plan

The lesson plan includes performance objectives, teaching and learning activities, and assessment. The details are as follows:

Lesson 1 : Genre of Discussion

1. Description:

In this lesson, students will learn to organize a discussion essay that deals with differing points of view and develop each paragraph with its own communicative function that contributes to the overall social purpose. The focus is on combining small textual elements into larger stretches of a complete discourse which is cohesive, coherent and persuasive.

2. Timeframe: 3 periods-55 minutes each

3. Objectives:

By the end of this lesson, students should able to:

- explain the concepts of discussion in academic writing.
- recognize the generic structure and stages of a discussion genre.
- clarify a function of each paragraph (stage) in a discussion genre.
- construct a discussion essay in a cohesive and coherent manner.

4. Teaching and learning procedures

In-class activities	Out-of-class/online activities	Periods	Assessments
Activity 1 : Concept of discussion			
1.1 Teacher finds out students' prior knowledge of discussion and its concepts to promote predicting skills through a set of questions. (e.g., What does discussion mean? What is discussion in academic writing? Why is discussion important?) 1.2 Teacher checks individual students' answers and calls on two students who arrive at different answers to orally explain their answers and thinking. 1.3 Teacher asks other audience students to share opinions if they agree or	1.1 Students choose one from two topics: "social networking" and "organic farming" (Community ➞Forums➞ Assignments➞Practice 3: Writing a discussion essay). 1.2 In Microsoft Word, students write a discussion essay of at least 300 words and need to integrate source ideas into their argumentation. 1.3 Students are free to choose at least 5 source ideas from both printed and online sources (e.g., news articles, journal articles, books, etc.).	1	- Students' prior knowledge - Students' questions & answers - Students' contribution - Teacher's observation

In-class activities	Out-of-class/online activities	Periods	Assessments
disagree with their peers' answers. 1.4 After the discussion, students log on to the website (www.ubueng.net) and individually read a short passage on the concept of discussion in academic writing (Lesson 1➞Concept of discussion) 1.5 After the group work, they orally compare their answers (known and new knowledge). 1.6 Teacher goes over the answers with the class and orally summarize the concept of discussion.	1.4 Throughout their composing process, they can develop and revise their discussion essay as they study other topics necessary for their writing task. 1.5 Students are encouraged to self-study other focused topics in advance as they are useful for their writing task.		
Activity 2 : Generic structure and social function of a discussion genre			
2.1 Students read online a short passage on the schematic structure and social function of a discussion genre (Lesson 1➞Generic structure). 2.2 Students individually read and identify the communicative purposes of each paragraph. 2.4 Teacher walks around the room and gives help as needed. 2.3 Teacher and students discuss the key points with the whole class orally. 2.4 Teacher calls on some students to orally answer some questions to check their comprehension.	2.1 Students review the generic structures and purposes of a discussion genre at their convenient time. 2.2 Students individually complete two online exercises on the structure of a discussion genre (Lesson 1➞Exercises ➞Structure 1, Structure 2) 2.3 Students review the structure of their discussion essay and may revise it as needed according to the common features of a discussion genre.	1	- Students' questions & answers - Teacher's observation - Online performance results
Activity 3 : Identification of generic structure and social function of a discussion genre			
3.1 Students read one model text of a discussion essay online by examining	3.1 Students individually complete two online exercises (Lesson 1➞	1	- Students' questions & answers

In-class activities	Out-of-class/online activities	Periods	Assessments
each paragraph and identifying its communicative purpose through a set of guiding question provided online (Lesson 1➞Generic structure). 3.3 Students pay attention to connectives and their functions that link sentences and paragraphs to establish a generic structure. 3.4 Students work individually on the tasks by noting down their answers on the paper. 3.5 After they are finished, Teacher asks students to share their ideas orally with their classmates. 3.6 Teacher wraps up this session by orally summarizing the key points.	Exercises ➞Structure 3, Structure 4) on the structure of a discussion genre. 3.2 Students individually complete one end-of-lesson test (Tests➞Posttest➞Structure of discussion) on the structure of a discussion genre. 3.3 Students review the generic structure of their discussion essay and may revise it based on the generic structure of the model discussion essay.		- Teacher's observation - Online performance results

Lesson 2 : Language Choices

1. Description:
In this lesson , students will learn to employ lexico-grammatical features typical of academic writing through a discussion genre and increase their awareness and understanding of how certain linguistic features and structures can be used to produce a range of rhetorical functions, including enacting interaction with readers, acknowledging possible views, revealing and masking personal voice or subjectivity, reducing criticism or objection, defending a position against criticism, expressing and removing personal stance, emphasizing and obscuring responsibility, increasing argument credibility, and enhancing readers' understanding.

2. Timeframe: 5 periods-55 minutes each

3. Objectives:
By the end of this lesson, students should able to:

- identify linguistic features salient in a discussion genre.

- use linguistic features and patterns typical of written academic registers.
- choose appropriate linguistic features to fulfill rhetorical functions.

4. Teaching and learning procedures

In-class activities	Out-of-class/online activities	Periods	Assessments
Activity 1 : Connectives			
1.1 Students read online a list of connectives and their functions (Lesson 2➞Connectives) 1.2 Students look at authentic texts that illustrate how each type of connectives is used to develop an argument and facilitate readers' understanding. 1.3 Once they understand each type, students work in groups of 2-3 to read online one model discussion essay (Lesson 2➞Connectives). 1.4 In their own group, students collaborate to identify connectives and categorize them according to their functions. 1.5 Teacher walks around the room to observe students' group discussions and provides help as needed. 1.6 After the group work, one representative from each group presents the answer orally. 1.7 Other students share more ideas and ask questions related to the points being discussed. 1.8 Teacher goes over the answers with the class and wraps up this session by	1.1 Students individually complete two online exercises (Lesson 2➞ Connective 1, Connective 2) to reinforce their understanding. 1.2 Students individually complete one end-of-lesson test (Tests➞Posttest➞Connective) 1.2 Students apply their knowledge of connectives into their discussion essay writing and may revise it as they want. 1.3 Students preview impersonality or objectivity in academic writing (Lesson 2➞Impersonality).	1	- Group & class discussions - Students' questions & answers - Teacher's observation - Online performance results

In-class activities	Out-of-class/online activities	Periods	Assessments
asking students to complete more online exercises.			
Activity 3 : Impersonality			
2.1 Teacher moderates a class discussion by eliciting students' background knowledge of impersonality in academic writing by using a set of questions (e.g., What is impersonality (or objectivity) in academic writing? Can we project ourselves in our academic writing? Did your previous writing instructors allow you to mention yourself in your academic writing? What would happen if you mention yourselves in academic writing? What strategies can we use to hide personality?). 2.2 After the discussion, students individually read the concepts and functions of 5 common strategies used to avoid explicit personality and achieved to other rhetorical functions (e.g., obscuring personality, textual cohesion): passive structures, inanimate subjects, *it*-clauses, general subjects, and nominalization (Lesson 2➞Impersonal voice, Lesson 2➞Nominalization). 2.3 Once they understand each strategy and its functions, students work in pairs to note the use of these strategies.	2.1 Students individually complete online exercises (Lesson 2➞Active & passive 1, Active & passive 2, It-clause 1, It-clause 2, Nominalization 1) at their convenient time. 2.2 Students individually complete two end-of-lesson tests (Tests➞Posttest➞Impersonality, Nominalization). 2.3 Students review their discussion essay and see if they can apply these strategies into their own writing to control a level of personality.	2	- Class discussions & answers - Teacher's observation - Online performance results

In-class activities	Out-of-class/online activities	Periods	Assessments
2.4 Teacher walks to each pair to observe and provides help as needed and also asks questions to ensure students' understanding. 2.5 After they are finished, some pairs present the answers orally to the whole class.			
Activity 3 : Explicit personality			
3.1 Teacher elicits students' existing knowledge of author pronouns ("We", "I") in academic writing before assigning students to read short excerpts that contain author pronouns. 3.2 Teacher moderates and facilitates a class discussion by asking students for their opinions about the use of author pronouns in academic essays (e.g. In your opinion, can you use 'I' in our academic essays? In your previous writing courses, did your teacher urge you to refer yourself in academic writing, what are the functions of 'I' in academic writing?). 3.3 After this session, Teacher explains to students that writer identity most manifests through the use of person pronouns ('I', 'We'). 3.4 Students read one online passage on the functions of author pronouns and identify the functions of author pronouns in the given	3.1 Students review the issues on personality and complete two online exercises (Lesson 2➞Author pronoun 1, Author pronoun 2) and one end-of-lesson test (Tests➞Author pronoun). 3.2 Students carefully review their discussion essay and decide on the function of "I" they want to accomplish in their argument while unnecessary "I" is replaced with appropriate impersonality strategies. 3.3 Students preview the issues on "modality" and prepares questions for in-class discussions.	1	- Students' class discussions - Student's prior knowledge - Students' contributions - Teacher's observation - Online performance results

In-class activities	Out-of-class/online activities	Periods	Assessments
excerpts (Lesson 2➞Personal voice) 3.5 To check students' comprehension, Teacher calls on some individual students to orally answer some questions with explanation. 3.6 Teacher goes over the answers with the whole class to orally summarize the key points.			
Activity 4 : Modality (hedges and boosters)			
4.1 Students read online a list of hedges and boosters focusing on their functions and examine authentic texts that illustrate the use of hedges and boosters to enhance their understanding. 4.2 Students work individually to qualify absolute claims (e.g., Drinking milk protects our bones from fractures > Drinking milk may not protect our bones from fractures) to perform rhetorical functions (e.g., acknowledging other views, reducing negation/criticism). 4.3 Teacher helps students be aware of these choices by asking some questions (e.g. Who would be likely to use 'is', as opposed to 'might'?, Would this audience oppose if your claim is absolute?). 4.4 After they are finished, students exchange their answers with their partner and take turns	4.1 Students work online on one assignment to revise five given sentences to accomplish rhetorical functions, such as heightening credibility, acknowledging a possible view, reducing criticism, obscuring objectivity) (Community➞Forums➞Assignments➞Practice 2: Understanding rhetorical functions). 4.2 To reinforce their understanding, students individually complete two online exercises (Lesson 2➞Modality 1, Modality 2) and one end-of-lesson test (Tests➞Posttest➞Modality). 4.3 In their discussion essay, students check their claims and revise them if they are properly qualified, so that their claims become more persuasive and effective. 4.4 Students print out their draft essay and submit it for initial feedbacks given to individual students.	1	- Students' questions & answers - Students' qualified claims - Online performance results - Draft discussion essays

In-class activities	Out-of-class/online activities	Periods	Assessments
commenting. 4.5 Students and their partner decide on whose answers are better and then orally share them with the whole class.			

Lesson 3 : Academic Argument

1. Description:
In this lesson, students will learn to develop credible and persuasive academic arguments and common elements, namely claims, reasons, evidence, and explanation. They will also learn to conclude a paragraph with their own analysis in forms of interpretation, recommendation, implication, evaluation, prediction, and comment.

2. Timeframe: 5 periods-55 minutes each

3. Objectives:
By the end of this lesson, students should able to:

- describe the core elements and functions of arguments
- develop claims that are clear, concise, and properly qualified.
- provide relevant and credible evidence in support of claims.
- present two differing points of view and state a clear position.

4. Teaching and learning procedures

In-class activities	Out-of-class/online activities	Periods	Assessments
Activity 1 : Essential elements of an argument			
1.1 Students study online the nature of academic arguments and look at the diagram that illustrates the essential elements (e.g., claims, grounds, explanation) of an argument, their relationship, and the process of argumentation (Lesson 3➞Core elements of argument). 1.2 In groups of 3-4, students orally discuss the functions of each element	1.1 In groups of 3-4 students, they watch a video on building teacher-student relationship (Community➞Forums➞Assignments➞Practice 1: Understanding argument). 1.2 Each group analyzes the structure of the argument based on the provided questions and posts the answers on the group forums. 1.3 Students have a look at their paragraphs and check	1	- Group & class discussions - Students' questions & answers - Each group's answers

In-class activities	Out-of-class/online activities	Periods	Assessments
and focus on how it is related to each other. 1.3 To check students' comprehension, Teacher calls on each group to orally answer some questions. 1.4 The groups that arrive at different ideas can make verbal comments and defend their answers. 1.5 Teacher orally summarizes the answers and wraps up this session by asking students to complete one practice out of class.	if they include the core elements of argument in their discussion essay.		
Activity 2 : Making and qualifying a claim			
2.1 Teacher explains to students that claims which are absolutely true are not arguable and claims that are properly qualified are difficult to refute. 2.2 Students read individually the roles and qualities of claims in arguments on the website (Lesson 3➞Claim). 2.3 After they finish reading, they discuss these concepts, asking questions for clarification, and sharing perspectives. 2.4 Students study a list of common language (words & phrases) used to qualify a claim and their functions (Lesson 3➞Language for qualifying claims).	2.1 Students individually complete two online exercises that focus on the functions of qualified claims, e.g. expressing likelihood, expressing certainty, softening generalizations, and distancing from claims (Lesson 3➞Qualities of claims, Qualifying claims). 2.2 Students review claims in their discussion essay and consider if they still need to be precisely qualified. If they have sufficient evidence, it is suggested that they strengthen their support claims while opposing claims tend to be made weaker.	1	- Students' answers & questions - Teacher's observation - Online performance results
Activity 3 : Developing a preview (central claim or thesis statement)			
3.1 Teacher begins by informing students that formulating a preview is an essential step and that it	3.1 Students individually practice developing a preview (complex claim) based on two contrasting	1	- Students' developed previews

In-class activities	Out-of-class/online activities	Periods	Assessments
needs to include two differing points of view. 3.2 Students note the structure of model previews for a discussion essay that deal with two points of view (Lesson 3➞Preview). 3.3 Students look at how contrast/concession connectives are used to develop a preview. 3.4 Once they understand the structure of preview, they practice developing their own issues based on the provided information out of class.	points in each pair of sentences and post the answers on the class forum. They have to make sure that their developed previews should clearly indicate their position or point of view on the issues (Community➞Forums➞Assignments➞Practice 1: Preview writing) 3.2 Students review the preview of their discussion essay and ensure that it clearly indicates their stance or position.		
Activity 4 : Choosing reasons to support a claim			
4.1 Students read an online short passage on the functions of reasons serve as grounds in academic argument and study the given examples of claims and reasons (sub-claims). (Lesson 3➞Reasons). 4.2 Once they understand the functions and connections of claims and reasons, they read an online discussion essay and indentify the central claim and reasons that support the central claim. 4.3 Teacher calls on some students to orally answer the questions (e.g., where is the central claim?, where is the sub-claim (reason) of the second paragraph?) 4.4 Teacher orally summarizes the answer and assigns students to complete online exercises.	4.1 Students individually complete one online exercise to identify the reasons of argument (Lesson 3➞Identifying reasons). 4.2 In their discussion essay, students consider all the claims made for the opposing view and their support view and make sure that their claims are more persuasive.	1	- Students' answers & questions - Teacher's observation - Online performance results

In-class activities	Out-of-class/online activities	Periods	Assessments
Activity 5 : Supporting reasons with evidence			
5.1 Students read online the types of evidence commonly used to increase the credibility of argument (Lesson 3➞Evidence). 5.2 In a group of 3-4 students, they analyze the examples of authentic arguments (paragraph levels) and identify the evidence and its type used in support of a reason. 5.3 Each group orally presents the answers to the whole class while other groups are allowed to ask questions for clarification. 5.4 Each individual student shows his/her evidences prepared for his/her discussion essay to Teacher and identifies the types (e.g., general claims, research results) and the sources (e.g., online news article, research articles) of the evidences.	5.1 To reinforce their understanding, students individually complete one online exercise by identifying the common types of evidence in academic writing (Lesson 3➞Types of evidence). 5.2 Students individually complete one end-of-lesson test to assess their overall knowledge of argument elements (Tests➞Posttest➞Identifying elements). 5.3 Students review their discussion essay and integrate source ideas as evidence to justify and support their argument. They will learn more how to integrate source ideas and use citation forms to achieve rhetorical functions in Lesson 4 : Use of Source Texts.	1	- Each group's presentation - Students' prepared evidences - Online performance results

Lesson 4 : Use of Source Texts

1. Description:
In this lesson, students will learn to synthesize and integrate source ideas into academic writing to support and justify their argument through common methods, such as quotation, paraphrasing, summarizing. In addition, they will learn to use reporting verbs, citation forms, and tenses in citations to present your own claims and other cited claims in a way that signals their own evaluation or is free of their evaluative stance.

2. Timeframe: 7 periods-55 minutes each

3. Objectives:

By the end of this lesson, students should able to:

- synthesize information from different sources to increase credibility.
- use different forms of citations to achieve rhetorical functions.
- integrate source materials using common techniques (e.g., paraphrasing).
- use a variety of reporting verbs and tenses to express their actual stance.
- document source materials according to discipline-specific conventions.

4. Teaching and learning procedures

In-class activities	Out-of-class/online activities	Periods	Assessments
Activity 1 : Integrating source ideas into argument			
1.1 Students read a short passage on "integrating sources" that can help them create a cohesive discourse between source ideas and their own ideas (Lesson 4➞Integrating sources). 1.2 After they are finished reading, they read four examples of authentic paragraphs and identify the cited ideas and the forms of citation and note how they are connected (Lesson 4➞Integrating sources). 1.3 While students are working on this task, they can discuss with their peers and ask Teacher questions for more explanation. 1.4 Teacher calls on some students to orally answer questions (e.g., where is the author's claim?, where is the cited idea?, which citation form is used?, what strategies does the author use to connect his/her own clam with the source ideas).	1.1 Students review this lesson out of class and revise their discussion essay to ensure the their own ideas and source ideas are well-integrated.	1	- Students' questions & answers
Activity 2 : Employing forms of citations (integral and non-integral)			
2.1 Students read online the two common types of	2.1 Students review their discussion essay with a	1	

In-class activities	Out-of-class/online activities	Periods	Assessments
citation forms in academic writing (Lesson 4➞Forms of citations). 2.2 Students look into the differences between the two forms of citations in terms of their functions. 2.3 Teacher explains the functions of each citation form to students while students are encouraged to answer questions. 2.4 To enhance their understanding, students examine the use of citation forms in four authentic texts (paragraph levels) and identify their functions (Lesson 4➞Forms of citations).	focus on the cited source ideas and employ the appropriate forms of citations and express their actual stance. .		
Activity 3 : Using reporting verbs to refer to source ideas			
3.1 Before this session begins, Teacher explains briefly to students that when writers decide to use a integral form of citation, they have to rely on reporting verbs. The choice of reporting verbs are largely determined by types of sources if they are research findings or general claims and by the need to focus on authors. 3.2 Students read online a list of reporting verbs categorized according to their purposes: to state a purpose (e.g., study, examine, explore), to recount research activity (e.g., collect, analyze, interview), to report results (e.g., show, find, report), to	3.1 Students individually read an abstract from a published journal and identify the functions of common research verbs (e.g., recount research activities, report findings, interpret results) and post the answers on the class forums (Community➞Forums➞Assignments➞Practice 5: Verbs and functions). 3.2 Students individually complete two online exercises (Lesson 4➞Reporting verbs 1, Reporting verbs 2). 3.3 Students review their discussion essay and check if they employ any integral citations. If there are	2	- Students' answers on the forums - Online performance results

In-class activities	Out-of-class/online activities	Periods	Assessments
interpret results (e.g., suggest, indicate, imply), to report factual information (e.g., state, point out, acknowledge), to make a weak belief (e.g., think, feel, believe), and to make a strong belief (e.g., argue, claim, assert) (Lesson 4➞With reporting verbs). 3.3 Students read short authentic texts by professional authors and identify reporting verbs and their functions in context (Lesson 4➞With reporting verbs).	integral citations, they have to choose reporting verbs appropriate for their stances towards the reported source ideas.		
Activity 4 : Using tenses in integral citations			
4.1 Teacher start a new topic by explaining to students that integral citations require appropriate reporting verbs and tenses which influence the rhetorical functions of arguments. 4.2 Students read online the concepts and functions of three tenses (e.g., past simple, present simple, present perfect) commonly used in academic writing when they report other authors' claims and also their own claims (Lesson 4➞Tenses in citations). 4.3 Students work in a group of 2-3 to analyze and identify reporting verbs and tenses and their functions in two authentic texts (paragraph levels) (Community➞Forums➞Assignments➞Practice 6:	4.1 Students individually complete two online exercises to identify the functions of tenses in citation (Lesson 3➞Tenses in citation 1, Tenses in citation 2). 4.2 Students individually complete one end-of-lesson test that aims to measure their overall knowledge of reporting verbs and verb tenses (Tests➞Posttest➞Tenses in citation) 4.3 Students are encouraged to study more to enhance their understanding and review their discussion essay with a focus on the tenses and functions in reporting verbs and their own claims.	1	- Each group's answers - Students' questions & answers - Online performance results

In-class activities	Out-of-class/online activities	Periods	Assessments
Uses of tenses). 4.5 One representative from each group shares their answers with other students and explains why they think their answers are correct.			
Activity 5 : Paraphrasing a source text			
5.1 Students read online the concept and quality of a good paraphrase and examine three examples of good paraphrases and note the strategies employed (Lesson 4➞Paraphrasing). 5.2 In a group of 3-4 students, they practice paraphrasing one short text using interpretation strategy and make sure that their paraphrase must cohere with the provided claim (Community➞Forums➞Assignments➞Practice 4: Paraphrasing). 5.3 Each group presents the answer in front of the class while other groups are urged to give comments and suggestions. 5.4 Teacher wraps up this session by showing students one good paraphrase.	5.1 Students individually complete two online exercises by choosing the best paraphrases based on the given sources (Lesson 4➞Paraphrasing 1, Paraphrasing 2). 5.2 Students individually complete two end-of-lesson tests (Tests➞Posttest➞Paraphrasing, Integrating sources) 5.3 Students review their discussion essay and prepare to submit the printed second draft next week for feedback. The feedback will determine if students have to study certain topics more in order to improve their essay. Students have one week to revise their essay. The revised draft (final version) will be submitted for grading in the following week.	2	- Teacher's feedback & comments - Students' final version of discussion essay. - Each group's presentation - Online performance results

APPENDIX B

Model Evaluation Form

This evaluation form is developed for ISD experts to evaluate the WAW instructional model.

Instructions: Please read each statement and then put a check mark (/) in the box which best describes your opinion. You can use separate sheets provided for additional comments and suggestions.

5 = Strongly agree
4 = Agree
3 = Neutral
2 = Disagree
1 = Strongly disagree

Statement	Level of Agreement				
	5	4	3	2	1
1. The design process of the WAW instructional model is non-linear and recursive.					
2. The WAW instructional model has 6 elements (phases). Please give comments on each individual element.					
2.1 Analyze					
2.2 Design					
2.3 Develop					
2.4 Assess					
2.5 Implement					
2.6 Evaluate					
3. The phases and steps of the WAW instructional model have a clear and logical relationship.					
4. The WAW instructional model corresponds to the purpose of the present study.					
5. The WAW instructional model can serve as a guiding model for developing other writing lessons.					

Other comments and suggestions: _____

_____

_____

Thank you for your assistance.

APPENDIX C

Specification of Writing Test

The purpose of this test specification is to provide relevant information considered to design and grade a writing test, including general description, test objectives, and focused constructs.

1. General description:
One writing test (Appendix D) is designed to assess students' ability to write a discussion genre. In this writing test, one timed writing task is used as a pretest and a posttest to measure students' learning outcomes. The students are required to discuss two sides of the issue and to clearly state their position on the issue.

2. Test objectives:
The goal of this task is to utilize reading and writing skills to construct a discussion genre effectively and appropriately. Students will be measured on the specific areas of writing ability as follows:

Focused constructs	**Objectives**
Content - Knowledge of how to provide information that is thoroughly addressed and credible (field knowledge).	• to fulfill the task expectations completely • to address both sides of the issue thoroughly • to make clear and concise claims • to provide relevant and credible evidence • to develop a clear position
Organization - Knowledge of how to construct each stage or move to form a coherent text (textual knowledge).	• to construct a clear and logical structure of a discussion text • to demonstrate knowledge of the functions of paragraphs • to develop all necessary paragraphs based on their function • to use a variety of cohesive devices effectively
Language - Knowledge of how to use language (e.g. grammar, vocabulary) to achieve communicative functions (functional language) - Knowledge of how to use language appropriately (sociolinguistic knowledge)	• to establish clear and accurate forms of linguistic features • to use a wide range of vocabulary related to the field/subject. • to choose appropriate linguistic features to fulfill rhetorical functions.

Reference - Knowledge of how to conform to discipline-specific conventions (conventional knowledge)	• to demonstrate effective integration of source material • to integrate source material using their own words • to demonstrate effective and appropriate use of citations

APPENDIX D

Writing Pretest and Posttest

Students are required to write a discussion essay to present both sides of the issues. Before they write, they have to read two short texts on the same themes and integrate these source materials into their own argument.

Instructions: Read the two short passages that argue for two different sides of the same issue. After you finish reading, you should write **a discussion essay** with at least 300 words to discuss two viewpoints (advantages and disadvantages) on the topic below, supporting these viewpoints with evidence and examples. You should also make clear which position you take in your argument.

Essay topic:
Some people believe that laptops can be a good learning tool for students**.** Others think that laptops can have a negative impact on students' learning.

Your discussion essay will be scored on content, organization, language, citation, and clear position.

IMPORTANT! Read the following guidelines carefully.

- Read the two passages below to get some ideas about your topic.
- Use 2-4 source ideas and evidence to support and justify your argument.
- Integrate those source ideas into your argument using your own words (paraphrasing).
- Cite all sources properly.

Reading 1 : This year, I resolve to ban laptops from my classroom by Tal Gross (2015)

(177 words)

Researchers have confirmed that laptops may do more harm than good for students. In class, many students engage in other activities on their laptops rather than pay attention to lessons, such as using social networking sites.

A research team in Canada found that laptops in the classroom distracted not only the students who used them, but also students who sat nearby. Meaning, not only do the laptop-using students end up staring at Facebook, but the students behind them do, as well.

In addition, laptop use in class does not promote students' deep learning. Since most students can type very quickly, laptops encourage them to copy down nearly everything said in the classroom. But when students stare at the screen of their laptops, something is lost.

A recent study by two psychologists Pam Mueller and Daniel Oppenheimer showed that the students who took notes longhand scored much higher on conceptual questions than did the students who used a laptop. They say that laptops lead to mindless transcription while the act of writing makes students process information more deeply.

Reading 2 : How laptops can enhance learning in college classrooms by Carrie Fried (2008)

(177 words)

Though laptops can be a distraction to both students and nearby classmates, new research shows that laptops can actually increase students' engagement, attentiveness, participation, and learning. To achieve this, however, the instructor must deliberately engage students through their laptops.

For example, Professor Samson Perry has developed a student response system called 'LectureTools'. This interactive system allows students to take notes directly on lecture slides and chat with their instructor and peers. Students who used the system said that they felt more attentive, engaged, and able to learn, compared with classes that didn't use it.

In addition, many students think that laptops offer them benefits in self-learning. For their learning purposes, students can use a laptop to study online resources and work with other students for solving a problem at any time and any place.

A study on laptop use by Miri Barak showed that laptops enhanced student-centered learning and promoted interactions among instructors and students. He says that laptops enable students to study more online by themselves and get a quick assistance from their instructor and peers.

APPENDIX E

Validation Form of Writing Test

The objective of this validation form is to evaluate the usefulness of a writing test (Appendix D), including measurability of focused constructs, authenticity, relevance, and practicability.

Directions: After reading the objectives of the test and the writing test, please put a tick (/) in front of the answer 'Yes' or 'No'. In case you answered 'No', please provide comments for improvement.

Criteria	Answer and Comments
1. Does the writing test correspond to the learning objectives?	□ Yes □ No Comments:_____ _____
2. Is the writing test appropriate to measure students' writing ability?	□ Yes □ No Comments:_____ _____
3. Is the writing test a real-world task (authentic)?	□ Yes □ No Comments:_____ _____
4. Is the writing topic relevant to the students?	□ Yes □ No Comments:_____ _____
5. Is the writing test useful to students?	□ Yes □ No Comments:_____ _____
6. Does the writing test stress the need to write a discussion genre?	□ Yes □ No Comments:_____ _____

7. Are the instructions clear and easy to understand?	□ Yes □ No Comments:_____ _____
8. Is the time allotted for the writing test appropriate?	□ Yes □ No Comments:_____ _____

APPENDIX F

IOC Analysis of Writing Test

Item	Experts			IOC Value	Interpretation
	1	2	3		
Q1	+1	+1	+1	1.00	Acceptable
Q2	+1	+1	+1	1.00	Acceptable
Q3	+1	+1	+1	1.00	Acceptable
Q4	+1	+1	+1	1.00	Acceptable
Q5	+1	+1	+1	1.00	Acceptable
Q6	+1	+1	+1	1.00	Acceptable
Q7	+1	+1	+1	1.00	Acceptable
Q9	0	0	+1	0.33*	Revision

The following formula is used to estimate the IOC value for each question. Let's take Question 9 as an example.

IOC = ΣR/ N

R = 0 + 0 + 1 = 1 (scores awarded by 3 experts)

N = 3 (Number of experts)

IOC = 1/3 = 0.33

The IOC result showed that Question 9 was not acceptable, which suggested revision. The two experts explained that the two preselected reading passages were too lengthy, thus causing test takers to spend too much time on reading. They suggested condensing by including only the key points.

APPENDIX G

Scoring Rubric for Writing Test

This set of criteria covers a wide range of knowledge in academic writing: field knowledge, textual knowledge, grammatical knowledge, sociolinguistic knowledge, and disciplinary conventions. Each of these domains is scored separately. The scoring rubric is used by three raters to evaluate students' pretest and posttest on a 100-point scale as follows:

Content	Organization	Language	Reference
31–40 = Excellent • The task is completely fulfilled. • Both points of view are thoroughly addressed with clear position. • Claims are properly made in a clear and concise manner. • Supports are fully developed in a relevant and credible way.	16–20 = Excellent • The essay is very well organized and easy to follow. • The writer exhibits sound knowledge of paragraphs' function. • All obligatory paragraphs are present and fully developed. • The writer uses a variety of cohesive devices effectively.	16–20 = Excellent • The writer uses effective and precise language. • The writer uses a wide range of field-specific words effectively. (e.g., word forms, choices). • The writer makes appropriate language choices to fulfill rhetorical functions*.	16–20 = Excellent • The writer integrates source ideas to support the argument effectively. • The writer uses citations effectively. • The writer makes a substantial revision of source language.
21–30 = Good • The task is competently fulfilled. • Both points of view are clearly addressed with clear position. • Claims are made in a clear and precise manner. • Supports are provided in a relevant and credible way.	11–15 = Good • The essay is well organized and easy to follow. • The writer exhibits good knowledge of paragraphs' function. • All obligatory paragraphs are present and well developed. • The writer uses a variety of cohesive devices, with some problems.	11–15 = Good • The writer makes some errors that cause no confusion. • The writer uses a wide range of field-specific words with some problems (e.g., word forms, choices). • The writer makes good language choices fulfill to rhetorical functions.	11–15 = Good • The writer integrates source ideas to support the argument quite well. • The writer uses citations with some problems. • The writer makes a moderate revision of source language.
11–20 = Poor • The task is partly fulfilled. • Either points of view is underdeveloped with unclear position. • Many claims are unclear and/or imprecise.	6–10 = Poor • The essay is poorly organized and difficult to follow. • The writer exhibits poor knowledge of the paragraphs' function. • Many obligatory paragraphs are absent	6–10 = Poor • The writer makes some errors that cause confusion. • The writer uses a limited range of field-specific vocabulary with many problems (e.g., word forms,	6-10 = Poor • The writer integrates source ideas to support the argument with many problems. • The writer uses citations with many problems. • The writer makes a

Content	Organization	Language	Reference
• Many supports are irrelevant and/or incredible.	or poorly developed. • The writer uses a limited variety of cohesive devices.	choices) • The writer makes many inappropriate language choices to fulfill rhetorical functions.	minimal revision of source language.
0–10 = Inadequate • The task is minimally fulfilled. • Both points of view are underdeveloped with unclear position. • Claims are insufficient and/or ambiguous. • Supports are insufficient and/or irrelevant.	0–5 = Inadequate • The essay shows no structural plan. • The writer demonstrates little or no knowledge of paragraphs' function. • Most obligatory paragraphs are absent or underdeveloped. • The writer fails to use a variety of cohesive devices.	0–5 = Inadequate • The writer makes too many errors that cause confusion. • The writer uses a limited range of field-specific words with too many problems (e.g., word forms, choices). • The writer makes too many inappropriate language choices to fulfill rhetorical functions.	0–5 = Inadequate • The writer fails to integrate source ideas. • The writer has limited knowledge of citations. • The writer over-relies on source language (near copy).

***** e.g. Enacting interaction with readers, Acknowledging possible views, Expressing appropriate personal voice/stance (personality/subjectivity), Defending a position against criticism/skepticism, Increasing argument credibility

APPENDIX H

Scoring Form for Raters

Name: _____

Rater: _____

Dimensions	Marking Criteria	Achievement				Scores
		Excellent	Good	Poor	Inadequate	
Content	• The task is completely fulfilled. • Both points of view are thoroughly addressed with clear position. • Claims are properly made in a clear and concise manner. • Supports are fully developed in a relevant and credible way.	(40-31) _____	(30-21) _____	(20-11) _____	(10-0) _____	**____/40**
Organization	• The essay is very well organized and easy to follow. • The writer exhibits sound knowledge of paragraphs' function. • All obligatory paragraphs are present and fully developed. • The writer uses a variety of cohesive devices effectively.	(20-16) _____	(15-11) _____	(10-6) _____	(5-0) _____	**____/20**
Language	• The writer uses effective and precise language. • The writer uses a wide range of field-specific words effectively. • The writer makes appropriate language choices to fulfill rhetorical functions.	(20-16) _____	(15-11) _____	(10-6) _____	(5-0) _____	**____/20**
Reference	• The writer integrates source ideas to support the argument effectively. • The writer uses citations effectively.	(20-16) _____	(15-11) _____	(10-6) _____	(5-0) _____	**____/20**

	• The writer makes a substantial revision of source language.					
Total						**____/100**

Comments:

Strong points:

_____
_____
_____

Weak points:

_____
_____
_____

APPENDIX I

Efficiency of WordPress-based Academic Writing (WAW) Lessons

1. Development Phase (n = 31)

1.1 Individual Testing (n = 3)

Lesson 1	**Students**	**Exercises (32)**	**Tests (12)**	**E_1**	**E_2**
Structure of Discussion	S1 (L)	22	6	75.17	72.22
	S2 (M)	22	8		
	S3 (H)	28	12		

Lesson 2	**Students**	**Exercises (60)**	**Tests (30)**	**E_1**	**E_2**
Language choices	S1 (L)	36	17	69.44	68.87
	S2 (M)	42	22		
	S3 (H)	47	23		

Lesson 3	**Students**	**Exercises (40)**	**Tests (10)**	**E_1**	**E_2**
Academic arguments	S1 (L)	30	6	78.33	76.67
	S2 (M)	31	7		
	S3 (H)	33	10		

Lesson 4	**Students**	**Exercises (30)**	**Tests (15)**	**E_1**	**E_2**
Use of source texts	S1 (L)	17	8	67.78	66.67
	S2 (M)	20	10		
	S3 (H)	24	12		

1.2 Small-group Testing (n = 6)

Lesson 1	**Students**	**Exercises (32)**	**Tests (12)**	**E_1**	**E_2**
Structure of discussion	S1 (L)	22	6	78.13	75.00
	S2 (L)	24	8		
	S3 (M)	24	8		
	S4 (M)	24	8		
	S5 (H)	26	12		
	S6 (H)	30	12		

Lesson 2	**Students**	**Exercises (60)**	**Tests (30)**	**E_1**	**E_2**
Language choices	S1 (L)	38	19	73.61	71.11
	S2 (L)	38	17		

Lesson 2	Students	Exercises (60)	Tests (30)	E_1	E_2
	S3 (M)	39	21		
	S4 (M)	42	21		
	S5 (H)	55	26		
	S6 (H)	53	24		

Lesson 3	Students	Exercises (40)	Tests (10)	E_1	E_2
Academic arguments	S1 (L)	30	7	79.17	78.33
	S2 (L)	29	6		
	S3 (M)	33	6		
	S4 (M)	32	8		
	S5 (H)	33	10		
	S6 (H)	33	10		

Lesson 4	Students	Exercises (30)	Tests (15)	E_1	E_2
Use of source texts	S1 (L)	19	9	72.22	70.00
	S2 (L)	19	10		
	S3 (M)	20	11		
	S4 (M)	22	11		
	S5 (H)	25	10		
	S6 (H)	25	12		

1.3 Field Testing (n = 22)

Lesson 1	Students	Exercises (32)	Tests (12)	E_1	E_2
Structure of discussion	S1	22	12	81.82	80.30
	S2	26	8		
	S3	24	12		
	S4	32	8		
	S5	24	12		
	S6	26	8		
	S7	28	12		
	S8	26	8		
	S9	28	8		
	S10	24	8		
	S11	26	12		
	S12	28	6		
	S13	29	8		
	S14	19	6		
	S15	20	12		
	S16	26	12		
	S17	28	8		
	S18	32	12		
	S19	28	8		
	S20	26	8		
	S21	26	12		
	S22	28	12		

Lesson 2	**Students**	**Exercises (60)**	**Tests (30)**	**E_1**	**E_2**
Structure of discussion	S1	50	28	81.21	80.30
	S2	47	22		
	S3	39	20		
	S4	52	26		
	S5	52	30		
	S6	52	25		
	S7	55	28		
	S8	47	22		
	S9	42	25		
	S10	53	20		
	S11	52	24		
	S12	47	20		
	S13	51	29		
	S14	56	22		
	S15	41	22		
	S16	40	23		
	S17	57	28		
	S18	50	23		
	S19	52	30		
	S20	42	18		
	S21	45	23		
	S22	50	22		

Lesson 3	**Students**	**Exercises (40)**	**Tests (10)**	**E_1**	**E_2**
Academic arguments	S1	39	8	82.05	81.82
	S2	21	8		
	S3	32	8		
	S4	37	10		
	S5	35	5		
	S6	38	8		
	S7	34	10		
	S8	29	8		
	S9	39	10		
	S10	31	10		
	S11	36	10		
	S12	29	4		
	S13	31	10		
	S14	38	5		
	S15	39	7		
	S16	27	6		
	S17	28	8		
	S18	38	8		
	S19	35	10		
	S20	31	10		
	S21	30	10		

Lesson 3	**Students**	**Exercises (40)**	**Tests (10)**	**E_1**	**E_2**
	S22	25	7		

Lesson 4	**Students**	**Exercises (30)**	**Tests (15)**	**E_1**	**E_2**
Use of source texts	S1	25	13	81.82	80.91
	S2	20	9		
	S3	23	11		
	S4	26	13		
	S5	23	11		
	S6	26	13		
	S7	29	13		
	S8	22	11		
	S9	28	13		
	S10	21	11		
	S11	28	12		
	S12	23	11		
	S13	26	13		
	S14	27	13		
	S15	24	13		
	S16	20	12		
	S17	22	11		
	S18	30	14		
	S19	22	13		
	S20	25	13		
	S21	22	11		
	S22	28	13		

2. Research Phase (n = 33)

Lesson 1	**Students**	**Exercise (32)**	**Tests (12)**	**E_1**	**E_2**
Structure of discussion	S1	30	12	82.01	81.13
	S2	28	12		
	S3	26	12		
	S4	24	8		
	S5	20	12		
	S6	28	6		
	S7	28	6		
	S8	26	12		
	S9	28	12		
	S10	32	12		
	S11	24	12		
	S12	24	8		
	S13	16	6		
	S14	32	12		
	S15	28	12		
	S16	24	8		
	S17	32	12		

Lesson 1	**Students**	**Exercise (32)**	**Tests (12)**	**E_1**	**E_2**
	S18	20	8		
	S19	24	12		
	S20	32	12		
	S21	26	8		
	S22	28	6		
	S23	26	12		
	S24	28	12		
	S25	32	12		
	S26	20	6		
	S27	28	12		
	S28	32	12		
	S29	24	6		
	S30	28	8		
	S31	28	8		
	S32	24	8		
	S33	16	6		

Lesson 2	**Students**	**Exercise (60)**	**Tests (30)**	**E_1**	**E_2**
Structure of discussion	S1	46	22	82.22	81.01
	S2	50	29		
	S3	55	24		
	S4	47	23		
	S5	42	21		
	S6	54	24		
	S7	48	24		
	S8	47	23		
	S9	47	29		
	S10	56	30		
	S11	51	24		
	S12	50	26		
	S13	50	24		
	S14	56	25		
	S15	47	29		
	S16	53	22		
	S17	51	24		
	S18	52	24		
	S19	48	29		
	S20	58	28		
	S21	49	22		
	S22	53	21		
	S23	53	24		
	S24	49	26		
	S25	53	24		
	S26	45	23		
	S27	48	29		

Lesson 2	**Students**	**Exercise (60)**	**Tests (30)**	**E_1**	**E_2**
	S28	51	24		
	S29	48	23		
	S30	43	23		
	S31	31	18		
	S32	44	20		
	S33	53	21		

Lesson 3	**Students**	**Exercise (40)**	**Tests (10)**	**E_1**	**E_2**
Academic arguments	S1	29	10	82.58	82.12
	S2	38	10		
	S3	32	8		
	S4	30	8		
	S5	37	8		
	S6	35	6		
	S7	34	8		
	S8	34	8		
	S9	35	8		
	S10	38	10		
	S11	32	10		
	S12	28	8		
	S13	31	8		
	S14	36	10		
	S15	31	6		
	S16	31	8		
	S17	35	8		
	S18	35	8		
	S19	38	10		
	S20	38	10		
	S21	32	8		
	S22	30	7		
	S23	33	7		
	S24	29	7		
	S25	35	8		
	S26	28	7		
	S27	37	10		
	S28	37	8		
	S29	36	10		
	S30	31	7		
	S31	32	8		
	S32	25	6		
	S33	28	8		

Lesson 4	**Students**	**Exercise (30)**	**Tests (15)**	**E_1**	**E_2**
Use of	S1	21	10	82.02	81.01

Lesson 4	Students	Exercise (30)	Tests (15)	E_1	E_2
source texts	S2	26	13		
	S3	26	13		
	S4	23	11		
	S5	22	11		
	S6	28	12		
	S7	25	12		
	S8	23	11		
	S9	22	11		
	S10	26	13		
	S11	29	14		
	S12	23	12		
	S13	23	12		
	S14	28	14		
	S15	25	12		
	S16	23	11		
	S17	24	12		
	S18	25	13		
	S19	27	12		
	S20	28	14		
	S21	26	12		
	S22	26	12		
	S23	25	14		
	S24	27	13		
	S25	21	13		
	S26	22	11		
	S27	28	14		
	S28	27	13		
	S29	23	11		
	S30	22	11		
	S31	24	13		
	S32	21	10		
	S33	23	11		

APPENDIX J

Writing Pretest and Posttest Scores

Students	Pretest	Posttest	Difference
S1	24.33	56.67	32.34
S2	35.67	76.00	40.33
S3	29.67	75.00	45.33
S4	46.00	73.33	27.33
S5	25.00	66.67	41.67
S6	30.33	63.00	32.67
S7	27.00	71.33	44.33
S8	29.00	54.67	25.67
S9	13.67	76.33	62.66
S10	19.33	71.67	52.34
S11	32.67	78.67	46.00
S12	19.33	66.67	47.34
S13	22.67	56.33	33.66
S14	19.67	64.67	45.00
S15	25.67	66.67	41.00
S16	15.67	51.33	35.66
S17	21.00	44.33	23.33
S18	15.67	56.33	40.66
S19	17.67	56.67	39.00
S20	22.67	73.00	50.33
S21	25.00	53.33	28.33
S22	9.00	54.00	45.00
S23	25.67	54.00	28.33
S24	41.00	71.67	30.67
S25	31.67	61.00	29.33
S26	17.00	52.00	35.00
S27	26.00	80.67	54.67
S28	36.67	62.00	25.33
S29	36.67	41.33	4.66
S30	24.67	44.67	20.00
S31	18.67	36.67	18.00
S32	20.33	49.00	28.67
S33	16.33	45.67	29.34

APPENDIX K

Samples of High- and Low-graded Pretest Writing

1. High-Graded Pretest Essay (**46**/100)

Nowadays, an electronic device especially laptop is very important for common people, because it is useful and it can help people live easier. On the other hand, it is also harmful for children and students who use it excessively.

Laptop is an electric device that many people commonly used for their work or entertainment. Sometime, laptop is harmful. For example, some students who use laptop while learning in the classroom, they do not pay attention to the teacher because they can search everything they want on the internet or they can play games while studying. According to Pam Mueller and Daniel Oppenheimer, students who use laptop get lower scores than students who take notes.

However, laptop is also useful. The purpose of using laptop is different. Some people use it for working, some use it for learning or relaxing, but the same thing that we receive from using laptop is convenience.

In my opinion, laptop help us work and learn easier. For example, when we cannot go to the library to do home works we can use laptop and internet to find information and complete your home works at room. According to Professor Samson perry, he has developed a LectureTools that can help students to take notes directly and easily. He found that students felt attentive, engage and able to learn when they use LectureTools.

In conclusion, laptop has a lot of disadvantages and benefits, it's depend on how we use it. In my opinion, I think that we can get more benefits if we use it on the right path. We have to know the limit of using laptop.

Comments:

Strong points:
Understood elements and organization of a good essay. Displayed attempt to paraphrase source texts. Addressed both perspectives. Expressed a rather clear stance

Weak points:
Claims and position were not sufficiently developed. Claims were not arguable. Focused more on the opposing view and the source author. Displayed poor knowledge of citations.

2. Low-graded Pretest Essay (**9**/100)

Nowadays laptops because a part of life because laptops have many benefits for learning or working in daily life, especially learning laptops can help students to learning and searching some information. However, benefits usually because with effects.

Although laptops have many benefits, but it has many deep danger to students. Laptops makes you use yourself because you usually depend on it, to do something that easy another reason laptops makes students become short concentration person because students not only using laptops learn or search some information, they used to play gam, play facebook, and watch movie. Laptop using will worry to entertain more than learning when they live in classroom they will not interest learning. They usually use laptops and makes students who sad nearby lose concentration too. According to a research team in Canada found that laptops in the classroom distracted not only the students who used them, but also student who sat nearby.

In short, laptops have a negative impact to students who usually use it. Using laptops makes you lose youself and become short concentration.

Comments:

Strong points:
Made a quite good introduction.
Weak points:
Failed to meet the requirement of the task. Had a poor knowledge of a good essay and language. Failed to address both perspectives. Unable to make use of and paraphrase source materials.

APPENDIX L

Samples of High- and Low-graded Posttest Writing

1. High-Graded Posttest Essay (**80.67**/100)

Currently, there are a lot of methods to study many things in the world, people can learn by their real experiences in daily life, teachers' teaching, etc. Another way, screen devices are conveniently as tools for studying, such as computers, mobile phones, iPod; especially, laptops. In Thailand, many primary schools choose laptops to be a part of teaching, because educators might believe that laptops can help students to learn better. However, people are tend to have negative effects on the use of laptops.

First of all, the use of laptops can lead students to get disadvantages concerning studying like being distracted. When some students study and use laptops in their classroom, this behavior will cause students to lose consciousness to concentrate on the lessons. For example, while teachers are teaching students, some students are using laptops to Facebook. A study of Canada team shows that students can be distracted, if use laptops during studying in classroom (Gross, 2008). Although others students are intending to listen what teacher are teaching, they are distracted by their friends who are using laptops nearby them.

The second disadvantage is that students can be a mindless person because of using laptops. An investigation points out that students who write what they learn on a notebook can study better than students who apply laptops (Gross, 2015). Laptops are able to connect with the internet which has much information to sever for people. It is possible that students may ignore to think and analyze what they have learned, since they can search whatever they want from the internet by their laptops. While they use laptops to think and keep information instead of them, they are going to lose thinking and analysis abilities. However, students should concentrate on studying, and they can utilize laptops for increasing knowledge.

On the other hand, students can get success in studying if they use laptops as a device to help them to pay attention during studying. Attentiveness in classroom is a significant part to lead students to show how much they understand lessons, but many students would not like to pay attention in classroom: they may feel shy to speak anything out when they are learning with a lot of students. An experimentation concerning the use of laptops of students from Professor Samson Perry suggests that students may be brave to be a good participant of studying in an online classroom through laptops (Fried, 2008). It may be better for some students if they can convey their thought by asking or chatting with teachers instead of talking face to face by using laptops.

In addition, students can learn many things by themselves, since laptops can bring them to open the wilder world for studying. A finding of Miri Barak points out that students can have more resources to find interesting information when they use laptops to study online by themselves (Fried, 2008). Studying in classroom may not the best way to develop abilities of students, because it might be easy to get boring with learning by a long explanation of teachers. Students can feel more comfortable to learn if they can choose laptops as a way to increase their knowledge. For instance, they can make exiting choices to learn from YouTube, follow BBC News Websites online, etc. Therefore, laptops can be one choice to help students to study easily with boundlessness.

In conclusion, although Laptops can cause disadvantages to students, they can apply laptops to develop their knowledge and abilities to achieve in schools or universities. Many students nowadays have more potential to study and improve their learning skills by themselves; nevertheless, teachers are still important to give a good advice for students. Due to students have different abilities to learn effectively: some may be so intelligent, in contrast, some may be poor.

Comments:

Strong points:

Expressed clear and precise claims. Developed claims sufficiently. Understood elements and organization of a discussion essay. Drew on source ideas sparingly and successfully. Made a substantial revision of source texts. Chose language items to fulfill some rhetorical functions (e.g., masking personality, addressing alternative views, enhancing credibility)

Weak points:

Made some grammatical errors and inappropriate choices of words. Stance should be clearer and more explicit.

2. Low-graded Pretest Essay (**36.67**/100)

Nowadays laptops is benefits to education. Laptops can be a good learning tool for students because it’s can be a good ways for self-learning anywhere. Some people believe that laptop can be benefits for student. Others think that laptops can have a negative impact on students' learning, but researchers will be discussion essay show that laptop have all of positive and negative sides.

On the negative, during teachers are teaching student all of them abstracted because use laptop chat on Facebook. A research team in Canada found that laptops in the classroom distracted not only the students who used them, but also students who sat nearby. Meaning, not only do the laptop-using students end up staring at Facebook, but the students behind them do, as well (Tal, 2015).

In addition, many student use laptop copy from website. Laptop use in class does not promote students' deep learning. Since most students can type very quickly, laptops encourage them to copy down nearly everything said in the classroom. But when students stare at the screen of their laptops, something is lost (Tal, 2015).

However, laptops can be a distraction to both students and nearby classmates, new research shows that laptops can actually increase students' engagement, attentiveness, participation, and learning. To achieve this, however, the instructor must deliberately engage students through their laptops.

For example, Carrie Fried (2008) has developed a student response system called 'LectureTools'. This interactive system allows students to take notes directly on lecture slides and chat with their instructor and peers. Students who used the system said that they felt more attentive, engaged, and able to learn, compared with classes that didn't use it.

In addition, many students think that laptops offer them benefits in self-learning. For their learning purposes, students can use a laptop to study online resources and work with other students for solving a problem at any time and any place. (Carrie, 2008).

Laptops is benefits to education. Laptops can be a good learning tool for students because (Carrie, 2008) showed that laptops enhanced student-centered learning and promoted interactions among instructors and students. He says that laptops enable students to study more online by themselves and get a quick assistance from their instructor and peers.

Comments:

Strong points:

Made a quite good introduction.

Weak points:

Made many grammatical errors. Did not express a clear stance. Over-relied on source ideas and obviously plagiarized. Displayed a poor knowledge of citations and their rhetorical functions.

APPENDIX M

Satisfaction Questionnaire (English Version)

Satisfaction Questionnaire

This questionnaire aims at exploring your satisfaction with the WordPress-based Academic Writing (WAW) lessons. It is divided into two main parts: information on computer and Internet use and satisfaction with the WAW lessons. Please answer the questions truthfully.

Part 1 : Information on Computer and Internet Use

Please choose the option that best describes your information.

1. How would you rate your computer skills (e.g. typing)?
   - o Very good
   - o Good
   - o Fair
   - o Poor
   - o Very poor
2. How would you rate your Internet skills (e.g. searching)?
   - o Very good
   - o Good
   - o Fair
   - o Poor
   - o Very poor
3. What devices do you regularly use? (multiple choices)
   - o Personal computer
   - o Tablet
   - o Laptop
   - o Mobile phone
   - o Others (please specify) _____
4. From Question 3, how frequently do you use those devices?
   - o Once a month or less
   - o Once a week
   - o Several times a week
   - o Every day
   - o Several times a day
   - o Others (please specify) _____
5. How frequently do you use the Internet?
   - o Once a month or less

- Once a week
- Several times a week
- Every day
- Several times a day
- Others (please specify) _____

6. Where do you regularly use the Internet? (multiple choices)
   - Home
   - Internet café
   - Library
   - Classroom
   - Others (please specify)_____
7. What do you primarily use the Internet for? (multiple choices)
   - Online learning
   - Searching for information
   - Social networking
   - Entertainment
   - Others (please specify) _____
8. Have you ever taken any online course (s)?
   - Yes
   - No (If no, skip No.9)
9. From Question 8, were you satisfied with the online course (s) you took?
   - Very satisfied
   - Satisfied
   - Moderately satisfied
   - Dissatisfied
   - Very dissatisfied

Part 2 : Satisfaction with the WAW lessons

Please indicate the extent of your agreement or disagreement that best describes your opinion.

5 = Strongly agree
4 = Agree
3 = Neutral
2 = Disagree
1 = Strongly disagree

Lesson Design	5 = Strongly agree	4	3	2	1 = Strongly disagree
1. The learning objectives are clearly defied.	○	○	○	○	○
2. The learning objectives are aligned to the lessons.	○	○	○	○	○

Lesson Design	5 = Strongly agree	4	3	2	1 = Strongly disagree
3. The lessons are up to my expectation.	○	○	○	○	○
4. The instructions are easy to understand.	○	○	○	○	○
5. The lessons are useful for future writing situations.	○	○	○	○	○

Learning Content	5 = Strongly agree	4	3	2	1 = Strongly disagree
6. The content fits my needs for my writing tasks.	○	○	○	○	○
7. The lessons have various learning tasks and exercises.	○	○	○	○	○
8. The lessons have sufficient content.	○	○	○	○	○
9. The lessons have useful content.	○	○	○	○	○
10. The content is presented in multiple ways.	○	○	○	○	○

Support System (WordPress)	5 = Strongly agree	4	3	2	1 = Strongly disagree
11. The support system is easy to use (e.g. searching, accessing)	○	○	○	○	○
12. The support system is user-friendly (e.g., font type, size, color)	○	○	○	○	○
13. The support system has collaboration tools.	○	○	○	○	○
14. The support system's operation is stable.	○	○	○	○	○
15. The support system is linked to useful resources.	○	○	○	○	○

Learning Community	5 = Strongly agree	4	3	2	1 = Strongly disagree
16. I can collaborate with other peers in completing tasks.	○	○	○	○	○
17. I can exchange resources and ideas with other peers.	○	○	○	○	○
18. I can draw on peer feedback to improve my writing.	○	○	○	○	○
19. I can draw on teacher feedback to improve my writing.	○	○	○	○	○
20. I can discuss with my teacher and peers on the forums.	○	○	○	○	○

Personalization	5 = Strongly agree	4	3	2	1 = Strongly disagree
21. I can achieve my learning goals.	○	○	○	○	○
22. I can choose what I want to learn.	○	○	○	○	○
23. I can control my learning progress.	○	○	○	○	○
24. I can determine my learning process.	○	○	○	○	○
25. I can improve my academic writing skills.	○	○	○	○	○

Other comments and suggestions

Thank you for your time.

APPENDIX N

Satisfaction Questionnaire (Thai Version)

<u>แบบสอบถามความพึงพอใจ</u>

แบบสอบถามฉบับนี้ออกแบบมาเพื่อสำรวจข้อมูลด้านความพึงพอใจของท่านต่อบทเรียนการเขียนเชิงวิชาการผ่านเวิร์ดเพรส (WordPress) แบบสอบถามฉบับนี้ประกอบด้วย 2 ส่วน คือ ข้อมูลด้านการใช้คอมพิวเตอร์และอินเทอร์เน็ต และข้อมูลด้านความพึงพอใจต่อบทเรียนออนไลน์ กรุณาตอบแบบสอบถามตามความจริง

ส่วนที่ 1 : ข้อมูลด้านการใช้คอมพิวเตอร์และอินเทอร์เน็ต

กรุณาเลือกคำตอบที่ตรงกับข้อมูลของท่านให้มากที่สุด

1. ทักษะคอมพิวเตอร์ของท่านอยู่ในระดับใด (เช่น ทักษะพิมพ์ดีด) ?
   - ○ ระดับดีมาก
   - ○ ระดับดี
   - ○ ระดับพอใช้
   - ○ ระดับแย่
   - ○ ระดับแย่มาก
2. ทักษะอินเทอร์เน็ตของท่านอยู่ระดับใด (เช่น ทักษะการค้นหาข้อมูล) ?
   - ○ ระดับดีมาก
   - ○ ระดับดี
   - ○ ระดับพอใช้
   - ○ ระดับแย่
   - ○ ระดับแย่มาก
3. ปกติท่านใช้อุปกรณ์อะไรดังต่อไปนี้? (เลือกตอบได้มากกว่า 1 ข้อ)
   - ○ คอมพิวเตอร์ตั้งโต๊ะ
   - ○ แท็บเล็ต
   - ○ แล็ปท็อป
   - ○ โทรศัพท์มือถือ
   - ○ อื่น ๆ (โปรดระบุ) _____
4. จากข้อ 3 ท่านใช้อุปกรณ์ดังกล่าวบ่อยแค่ไหน?
   - ○ เดือนละครั้ง หรือ น้อยกว่า
   - ○ สัปดาห์ละครั้ง
   - ○ หลายครั้งต่อสัปดาห์
   - ○ ทุกวัน
   - ○ หลายครั้งต่อวัน
   - ○ อื่น ๆ (โปรดระบุ) _____
5. ท่านใช้อินเทอร์เน็ตบ่อยแค่ไหน?
   - ○ เดือนละครั้ง หรือ น้อยกว่า
   - ○ สัปดาห์ละครั้ง
   - ○ หลายครั้งต่อสัปดาห์
   - ○ ทุกวัน
   - ○ หลายครั้งต่อวัน
   - ○ อื่น ๆ (โปรดระบุ) _____

6. ปกติท่านอินเทอร์เน็ตที่ไหน ? (เลือกตอบได้มากกว่า 1 ข้อ)
   - ○ บ้าน
   - ○ ร้านอินเทอร์เน็ต
   - ○ ห้องสมุด
   - ○ ห้องเรียน
   - ○ อื่น ๆ (โปรดระบุ) _____

7. ส่วนใหญ่ท่านใช้อินเทอร์เน็ตเพื่อวัตถุประสงค์อะไร ? (เลือกตอบได้มากกว่า 1 ข้อ)
   - ○ การเรียนรู้ออนไลน์
   - ○ การค้นหาข้อมูล
   - ○ สังคมออนไลน์
   - ○ ความบันเทิง
   - ○ อื่น ๆ (โปรดระบุ) _____

8. ท่านเคยเรียนในรายวิชาที่มีการเรียนการสอนผ่านเว็บไซต์หรือไม่?
   - ○ เคย
   - ○ ไม่เคย (หากไม่เคยให้ข้ามข้อ 9)

9. จากข้อ 8 ท่านมีความรู้สึกอย่างไรกับการเรียนการสอนผ่านเว็บไซต์?
   - ○ พอใจอย่างมาก
   - ○ พอใจ
   - ○ พอใจปานกลาง
   - ○ ไม่พอใจ
   - ○ ไม่พอใจอย่างมาก

ส่วนที่ 2 : ความพึงพอใจของท่านต่อบทเรียนออนไลน์
กรุณาเลือกระดับความคิดเห็นที่ตรงกับท่านมากที่สุด

5 = เห็นด้วยอย่างมาก
4 = เห็นด้วย
3 = เห็นด้วยปานกลาง
2 = ไม่เห็นด้วย
1 = ไม่เห็นด้วยอย่างมาก

การออกแบบบทเรียน	5 = เห็นด้วยอย่างมาก	4	3	2	1 = ไม่เห็นด้วยอย่างมาก
1. วัตถุประสงค์การเรียนรู้ชัดเจน	○	○	○	○	○
2. วัตถุประสงค์การเรียนรู้สอดคล้องกับเนื้อหาบทเรียน	○	○	○	○	○
3. บทเรียนตรงตามความคาดหวังของท่าน	○	○	○	○	○
4. คำชี้แจงของแบบฝึกหัดในบทเรียนเข้าใจง่าย	○	○	○	○	○
5. บทเรียนเป็นประโยชน์ต่อการเขียนในอนาคต	○	○	○	○	○

เนื้อหาของบทเรียน	5 = เห็นด้วยอย่างมาก	4	3	2	1 = ไม่เห็นด้วยอย่างมาก
6. เนื้อหาตรงตามความต้องการของท่านในการเขียน	○	○	○	○	○
7. บทเรียนมีกิจกรรมและแบบฝึกหัดที่หลากหลาย	○	○	○	○	○
8. บทเรียนมีเนื้อหาเพียงพอ	○	○	○	○	○
9. บทเรียนมีเนื้อหาที่เป็นประโยชน์	○	○	○	○	○
10. มีการนำเสนอเนื้อหาของบทเรียนที่หลากหลาย	○	○	○	○	○

ระบบสนับสนุน (เว็บไซต์)	5 = เห็นด้วยอย่างมาก	4	3	2	1 = ไม่เห็นด้วยอย่างมาก
11. ระบบสนับสนุนใช้ได้ง่าย (เช่น การค้นหาข้อมูล การเข้าถึงเนื้อหา)	○	○	○	○	○
12. ระบบสนับสนุนเป็นมิตรกับผู้ใช้ (เช่น ชนิด ขนาด และสีตัวอักษร)	○	○	○	○	○
13. ระบบสนับสนุนมีเครื่องมือส่งเสริมการทำงานร่วมกัน	○	○	○	○	○
14. การทำงานของระบบสนับสนุนมีเสถียรภาพ	○	○	○	○	○
15. ระบบสนับสนุนมีการเชื่อมต่อกับแหล่งข้อมูลภายนอกที่เป็นประโยชน์	○	○	○	○	○

ชุมชนการเรียนรู้	5 = เห็นด้วยอย่างมาก	4	3	2	1 = ไม่เห็นด้วยอย่างมาก
16. ท่านสามารถร่วมมือกับเพื่อนเพื่อทำงานให้เสร็จสมบูรณ์	○	○	○	○	○
17. ท่านสามารถแลกเปลี่ยนความคิดเห็นและเนื้อหากับเพื่อน	○	○	○	○	○
18. ท่านสามารถนำคำแนะนำจากเพื่อนไปปรับปรุงงานเขียน	○	○	○	○	○
19. ท่านสามารถนำคำแนะนำจากอาจารย์ไปปรับปรุงงานเขียน	○	○	○	○	○
20. ท่านสามารถพูดคุยกับอาจารย์ผู้สอนและเพื่อนในกลุ่ม	○	○	○	○	○

การเรียนรู้ด้วยตัวเอง	5 = เห็นด้วยอย่างมาก	4	3	2	1 = ไม่เห็นด้วยอย่างมาก
21. ท่านสามารถบรรลุเป้าหมายการเรียนรู้ของตนเอง	○	○	○	○	○
22. ท่านสามารถเลือกเนื้อหาเพื่อเรียนรู้ได้ตามความต้องการ	○	○	○	○	○
23. ท่านสามารถควบคุมความก้าวหน้าการเรียนรู้ของตนเอง	○	○	○	○	○
24. ท่านสามารถกำหนดกระบวนการเรียนรู้ของตัวเอง	○	○	○	○	○
25. ท่านสามารถพัฒนาทักษะการเขียนเชิงวิชาการ	○	○	○	○	○

ข้อเสนอแนะเพิ่มเติม

ขอขอบคุณ

APPENDIX O

IOC Analysis of Questionnaire

The IOC analysis revealed the content and construct validity of the questionnaire designed to explore the students' satisfaction. The results for each individual item are presented below.

Item	Experts			IOC Value	Interpretation
	1	2	3		
Part I (9 items)					
Q1	+1	+1	+1	1.00	Acceptable
Q2	+1	+1	+1	1.00	Acceptable
Q3	+1	+1	+1	1.00	Acceptable
Q4	+1	+1	+1	1.00	Acceptable
Q5	+1	+1	+1	1.00	Acceptable
Q6	+1	+1	+1	1.00	Acceptable
Q7	+1	+1	+1	1.00	Acceptable
Q8	+1	+1	+1	1.00	Acceptable
Q9	+1	+1	+1	1.00	Acceptable
Part II (25 items)					
Q1	+1	+1	+1	1.00	Acceptable
Q2	+1	+1	+1	1.00	Acceptable
Q3	+1	+1	+1	1.00	Acceptable
Q4	+1	+1	+1	1.00	Acceptable
Q5	+1	+1	+1	1.00	Acceptable
Q6	+1	+1	+1	1.00	Acceptable
Q7	+1	+1	+1	1.00	Acceptable
Q8	+1	+1	+1	1.00	Acceptable
Q9	+1	+1	+1	1.00	Acceptable
Q10	+1	+1	+1	1.00	Acceptable
Q11	+1	+1	+1	1.00	Acceptable
Q12	+1	+1	+1	1.00	Acceptable
Q13	+1	+1	+1	1.00	Acceptable
Q14	+1	+1	+1	1.00	Acceptable
Q15	+1	+1	+1	1.00	Acceptable
Q16	+1	+1	+1	1.00	Acceptable
Q17	+1	+1	+1	1.00	Acceptable
Q18	+1	+1	+1	1.00	Acceptable
Q19	+1	+1	+1	1.00	Acceptable
Q20	+1	+1	+1	1.00	Acceptable

Q21	+1	+1	+1	1.00	Acceptable
Q22	+1	+1	+1	1.00	Acceptable
Q23	+1	+1	+1	1.00	Acceptable
Q24	+1	+1	+1	1.00	Acceptable
Q25	+1	+1	+1	1.00	Acceptable

The following formula is used to estimate the IOC value for each question item.

$IOC = \Sigma R / N$

R = 1 + 1 + 1 = 3 (scores awarded by 3 experts)

N = 3 (Number of experts)

IOC = 3/3 = 1

It can be seen from the table that the IOC value for each individual item is 1.00, which indicates that the questionnaire has a high validity of content and construct.

APPENDIX P

Semi-Structured Interview Questions

1. How frequently do you study the WAW lessons?
   ท่านเข้าไปใช้บทเรียนการเขียนเชิงวิชาการผ่านเวิร์ดเพรสบ่อยแค่ไหน?

2. When do you study the WAW lessons?
   ท่านเข้าไปใช้บทเรียนการเขียนเชิงวิชาการผ่านเวิร์ดเพรสตอนไหน?

3. Are the WAW lessons useful for your writing? Why or Why not?
   บทเรียนการเขียนเชิงวิชาการผ่านเวิร์ดเพรสมีประโยชน์ต่อเขียนการเของท่านในปัจจุบัน หรือไม่มี หรือไม่มีประโยชน์เพราะอะไร?

4. Do you think the WAW lessons can improve your knowledge of academic writing? If yes, in what ways?
   ท่านคิดว่าบทเรียนการเขียนเชิงวิชาการผ่านเวิร์ดเพรสช่วยพัฒนาความรู้ด้านการเขียนเชิงวิชาการของท่านหรือไม่? ถ้ามี ด้านไหนบ้าง?

5. Do you think the WAW lessons can help you raise your understanding and awareness of language choices?
   ท่านคิดว่าบทเรียนการเขียนเชิงวิชาการผ่านเวิร์ดเพรสช่วยให้ท่านเข้าใจและตระหนักในการเลือกใช้ภาษา หรือไม่?

6. What do you know now about academic writing that you did not know before learning through the WAW lessons?
   ตอนนี้ท่านได้รับความรู้ใหม่อะไรบ้างเกี่ยวกับการเขียนเชิงวิชาการ ก่อนที่มาจะเรียนผ่านบทเรียนการเขียนเชิงวิชาการผ่านเวิร์ดเพรส

7. Do you like learning academic writing face-to-face or fully online or both? Why?
   ท่านชอบเรียนการเขียนเชิงวิชาการแบบในห้องเรียน หรือออนไลน์ หรือทั้งสองแบบ? เพราะอะไร?

8. What else would you like to say about the WAW lessons?
   ท่านต้องการเพิ่มเติม/เสนอแนะอะไรบ้าง เกี่ยวกับบทเรียนการเขียนเชิงวิชาการผ่านเวิร์ดเพรส?

APPENDIX Q

Participant Consent Form

Dear .....

My name is Atikhom Thienthong, and I am a PhD student in English Language Studies at Suranaree University of Technology, Thailand. The purpose of my research study is to design an instructional model as a conceptual framework for developing online genre-based lessons to support academic writing. These lessons are designed to assist and prepare you to write academic arguments required in your academic and professional contexts.

You are invited to participate in my research study. The following information is provided in order to help you to make an informed decision whether or not to participate. To participate in this study, you are required to complete these following activities:

- take a writing pretest and posttest, each of which requires approximately three hours. In this writing test, you are required to write a discussion essay of at least 300 words using source ideas from two short readings provided to support and justify your argument.
- study the lessons on two platforms: face-to-face and online activities during which you are required to use your personal devices or laboratory computers. In-class activities include discussion of concepts, collaborative & individual works, and feedback conferencing. Out-of-class activities consist of online exercises, end-of-lesson tests, and collaborative & individual work.
- fill out an online questionnaire that asks you to express your satisfaction with the lessons. In addition, based on your writing achievement, some of you will be chosen for a semi-structured interview.

Your participation in this study is voluntary. You are free to decide not to participate in this study or to withdraw at any time. If you choose to participate, you may withdraw at any time by notifying me. Upon your request to withdraw, all information pertaining to you will be destroyed. If you choose to participate, all information will be held in strict confidence and will have no bearing on your academic standing or services. Any information obtained during this research project will be kept strictly confidential, and you will be identified using pseudonyms in every research process to protect their identity.

If you are willing to participate in this study, please indicate your interest by completing the enclosed form and returning it to me. If you would like additional information concerning this study before or after it is completed, please contact me by phone: 09 8045 2770 or by e-mail: huriken77@hotmail.com.

Sincerely,

Atikhom Thienthong
Researcher

APPENDIX R

List of Experts

Name	Position	Tasks
1. Prof. Dr. Chaiyong Brahmawong	- Vice-President of the Distance Education, Bangkokthonburi University, Thailand	- Evaluating a WordPress-Based Academic Writing (WAW) Instructional model
2. Dr. Dhirawit Pinyonatthagarn	- Lecturer, Suranaree University of Technology, Thailand	- Evaluating a WordPress-Based Academic Writing (WAW) Instructional model - Satisfaction questionnaire
3. Dr. Suksan Supasetseree	- Unit Supervisor of the Foreign Languages Resource Unit (FLRU), Suranaree University of Technology - Lecturer, Suranaree University of Technology, Thailand	- Evaluating a WordPress-Based Academic Writing (WAW) Instructional model - Validating a model evaluation form - Validating a lesson plan for WAW lessons
4. Dr. Adcharawan Buripakdi	- Lecturer, Suranaree University of Technology, Thailand	- Validating a lesson plan for WAW lessons - Validating a writing pretest and posttest - Validating a satisfaction questionnaire
5. Asst. Prof. Dr. Saowadee Kongpetch	- Lecturer, Ubon Ratchathani University, Thailand	- Validating a writing pretest and posttest - Validating a scoring rubric - Validating WAW lessons
6. Dr. Sirinthip Boonmee	- Lecturer, Ubon Ratchathani University, Thailand	- Validating a writing pretest and posttest - Validating a scoring rubric - Validating WAW lessons
7. Dr. Chalermchai Wongrak	- Lecturer, Ubon Ratchathani University, Thailand	- Grading students' pretest and posttest essays
8. Dr. Oranuch Puangsuk	- Lecturer, Ubon Ratchathani University, Thailand	- Grading students' pretest and posttest essays

CURRICULUM VITAE

Atikhom Thienthong received a Bachelor of Arts in Business English from Buriram Rajabhat University and a Master of Arts in English for Careers from Thammasat University. In 2016, he obtained a Doctoral Degree in English Language Studies at School of Foreign Languages, Institute of Social Technology, Suranaree University of Technology.

Atikhom is also a full-time lecturer at Department of Western Languages and Literature, Faculty of Liberal Arts, Ubon Ratchathani University, where he teaches a wide range of courses, e.g. foundation English courses, academic writing courses, and ESP courses. His research interests include rhetorical/functional grammar, academic writing, and technology in teaching and learning.