# A creative perspective on academic writing pedagogy in Higher Education: Using the DREAM model to develop creative and critical thinking in student academic writing

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**Abstract**
Writing is a brain process. Literature in the research fields of creativity, critical thinking in relation to argumentation, as well as academic literacy pedagogy, has in the past 30 years, indicated that creative thinking and critical thinking are essential cognitive skills that are inseparably associated in academic writing. However, academic support is insufficient to help students, especially international English as an Additional, (EAL) students, in academic writing. Students struggle to voice their understanding and construct argument in their disciplines at the levels necessary within subject-specific disciplines. This paper introduces the DREAM (Discovering, Refreshing, Engendering, Adapting, Measuring) model, designed to develop student writers' creative and critical thinking in academic writing pedagogy in higher education. The DREAM model and its general design for pedagogical implementation are introduced through a critical lens to review theoretical analysis, as well as empirical studies of questionnaires, interviews, observations, and diary notes. It analogises the stages of the DREAM model to those of the Creative Problem Solving (CPS). It also explicates specific cognitions for tasks at each stage of the DREAM model with theoretical analysis of creative thinking and critical thinking for knowledge transformation and argumentation. Finally, with literature analysis about the gap between the expectation of disciplinary lecturers on student writers' writing tasks and the current academic writing pedagogical approaches, the article suggests a wide use of a DREAM model pedagogical framework across disciplines to support student writers to achieve in academic writing.

**Keywords**
Pedagogy; creative thinking; critical thinking; DREAM model.

## Introduction

Academic writing at university is an essential part of higher education because of its functions as a means of students' learning, their assessments and entry for students to specific disciplinary fields (Curry and Lillis, 2003). Academic writing pedagogy has faced challenges in supporting students with an increasing number of students, especially international students studying in the UK and those in overseas UK university institutes (Curry and Lillis, 2003). Over the past 20 years, the numbers of international students studying in the UK higher education

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have increased from nearly 300,000 in 2003 to 620,000 in 2022 though with a slight fall to 610,000 in 2023 (Bolton, Lewis and Gower, 2024). However, media draw attention to academic integrity issues amongst EAL students but make no mention of their struggle in "accessing or voicing their understanding of the knowledge base of their discipline" (Bond, 2020, pp.6). One of the challenges, according to Bond (2020), is the marginal status of English for Academic Purposes (EAP) courses from the true scholarship and internal academy. Pre-sessional EAP courses which used to provide linguistic and literacy support to students in English academic demand have become an alternative for those who have not meet the language proficiency requirement in IELTS or equivalent exams (Bond, 2020). Meanwhile, as the score of IELTS examination as an indicator for the enrolment of international students, many EAP courses focus on training students to write a 250-word unreferenced essay about generic topics (Bond, 2020). Another challenge is the negligence of cognitive development in academic writing pedagogy. Literature reveals academic writing pedagogy at universities has not provided adequate instructions and facilitation to students about how to generate original ideas and how to construct valid and rational argument in their writing (Lillis and Scott, 2015; Wingate, 2012). The fact that writing is a brain process has been neglected (Selvaraj and Aziz, 2019). Thus, not only international EAL students are reported to have difficulties in expressing their voices and constructing valid argumentation in their subject disciplines, but the same issue has also been reported among English native speakers in their academic writing (Sağlamel and Aydoğdu, 2021). The third challenge would be the disengagement of subject-specific lecturers in supporting students in academic writing. According to French (2018), commonly, subject-specific lecturers do not provide academic writing support to facilitate their students, especially the EAL students, academic literacies that are specifically required in their disciplines. Therefore, this paper introduces a conceptual framework to enrich the academic writing pedagogy after examining the challenges within the system. The proposed Discovering, Refreshing, Engendering, Adapting and Measuring (DREAM) model aims to facilitate the cognitive development of creative and critical thinking of student writers in voicing their understanding in their subject disciplines, and support them to write reports, theses, essays, or other types of research-based writing tasks across a variety of disciplines and ranges of professional fields in higher education. It also suggests the engagement of subject-specific lecturers' involvement with the DREAM model in developing students' creative and critical thinking in academic writing.

The proposal of the DREAM model to develop creative and critical thinking of student writers in academic writing has historical and theoretical root in early academic writing movements. An academic writing movement to cope with the enrolment expansion in late 1970s and early 1980s in the U.S. higher education included writing across the curriculum (WAC) and writing in the disciplines (WID) (Russell et al., 2009; McLeod, 2000; Russell, 1990). WAC claimed to be writing for learning whereas WID was learning for writing (McLeod, 2000). WAC/WID pedagogies allowed students to recognise different patterns of writing across disciplines and to gradually be familiar to varied forms of writing (Ganobcsik-Williams, 2010; Curry and Lillis, 2003). The advocacy of WAC and WID have been widely accepted and applied in academic writing pedagogy in U.S. higher education though more investigations have continuously been

conducted to seek actual outcomes in practicality (Ochsner and Fowler, 2004). Furthermore, Russell et al. (2009) revealed that the WAC and WID movements had theoretically framed academic writing pedagogy in UK higher education in the 1980s. For example, the emphasis on the importance of "explicit acculturation into disciplinary codes and discourses (pp397)" was rooted in the WAC movement (Russell et al., 2009). When academic writing pedagogy development became urgent due to UK university student enrolment expansion in the 1990s, such theoretical framing provided foundation for the academic literacies research (Russell et al., 2009). Thereafter, academic literacies approach to writing was advocated and practised among research-practitioners in UK higher education to help students voice their understanding and meaning in their disciplines.

'Academic Literacies' based on transformative perspectives in academic writing pedagogical research was initially proposed by Mary Lea and Brian Street in 1998 with the learning goal that students make meanings and knowledge construction in their writing (Lea and Street, 1998). Lea and Street (1998) found that commonly used approaches to teach academic writing could be considered as relating to either study skills or academic socialisation. The study skill approach, according to Lea and Street (1998), was more likely to develop students' academic conventions such as how to cite sources and academic language use. Although the academic socialisation approach was grounded in social psychology, it was narrowed to general academic conventions. Lea and Street (1998) argued that both approaches had serious limitations. Neither of them could scaffold and facilitate student writers to make meaning and construct argument in real academic writing tasks. Additionally, transferability might not occur when students faced discrepancies in different text types across a range of disciplines (Lea and Street, 1998). Academic literacies, as a critical approach, emphasises that teachers, researchers, and practitioners in academic writing in higher education should develop transformative approaches such as teaching academic conventions through knowledge construction and eliciting writers' perspectives in meaning making with subject-specific contents to facilitate students' achievement in their writing tasks (Lillis et al., 2015; Lea and Street, 1998). Lillis and Lea (2015, cited in Lillis et al., 2015) argued that seeking transformative designs would elicit students to make meaning and construct knowledge in student writing and to raise the validity, creativity, meaningfulness of their writing. Harrington (2015, cited in Lillis et al., 2015) advocated that the design of transformative approaches in academic writing pedagogies should encourage students to create their own knowledge base within boundaries that define a particular discipline or field as well as the foundation of academic conventions and semiotics. However, actual pedagogical interventions based on the conception of academic literacies did not result in the satisfactory outcomes that students could present their epistemological voices with meaning making and knowledge construction in their writing (Adams, 2015; Fischer, 2015; Gimenez and Thomas, 2015). In addition, literature about empirical research on facilitating students to produce their voices with knowledge transformation, creativity, and individuality was insufficient (Badenhorst et al., 2015; Allison, 2004). Admittedly, actual research of academic literacies with transformative approaches in small-scale research have still been within the linguistic use of discourses on rhetorical purposes of texts as expected (Lillis and Scott, 2015). Thus, creative approaches are needed to

fill the vacancy of research in the knowledge transformation, creativity, and innovation in students' academic writing.

Students' ability of constructing argument with critical analysis in academic writing is another essential element to be considered in academic writing pedagogies. Andrews (2019) regarded argument and argumentation as a sub-category of rhetoric through which academic communications were made not only in spoken mode but also written types of text such as student writing. In higher education, writing argument or argumentation is the major way that students at university level, especially graduate level, are assessed on their comprehension and knowledge of their subjects (Tahira and Haider, 2019). Accordingly, good argument is expected in student writing by lecturers because it demonstrates the level of knowledge construction of students in disciplines (Andrews, 2007). However, current academic writing pedagogical approaches may not provide adequate instructions or support to students about how to construct valid and rational argument in academic writing. Literature about academic writing pedagogies has revealed that students at university receive little support in argumentation or how to construct argument in their academic writing (Wingate, 2012). Current studies imply that the disengagement of subject-specific lecturers in students' writing practices of their disciplines would be a cause. For instance, French (2018) points out that current academic writing support to students is offered by generic writing-developers who do not share the disciplinary knowledge of their students. Especially, for international students, they receive little access to academic literacies of their disciplines from EAP unit since most EAP practitioners in the pre-session of EAP courses are outsiders of the academic community of students' disciplines (Bond, 2020). This creates a gap in the facilitation of students to meet the subject-specific lecturers' high expectation of seeing good argument in the academic writing assessments.

In addition, relevant research, especially a pilot study which was conducted in two UK universities and one US university, concluded some potential causes of why university teaching neglected systematic coverage of developing students' ability to make their own critically informed arguments (Andrews, 2019; Andrews, 2007; Andrews et al., 2006). Firstly, Andrews et al., (2006) concluded that argument across different disciplines or even within the same discipline has variations in epistemological conception, understanding, and expectations. For example, though historians from both York University and Queen Mary University in UK agreed that writing in the History discipline was a process of interpretation, "argument" was highly regarded as the core of learning history at York while historians at Queen Mary hesitated to use "argument" to describe the way of providing views of history (Andrews et al., 2006). Secondly, argument is invisibly constructed in disciplinary lecturers' knowledge delivery rather than being delineated (Andrews, 2007). This, according to French (2018, pp. 204), is due to "the ubiquity of autonomous approaches to academic writing development", of which argument is invoked in the lectures by subject-specific lecturers who do not expect to spend time in facilitating students to construct argumentation in writing practices to their disciplines. Finally, in some universities, argumentation is often associated with critical thinking or communication skills, so that how to argue is not taught in disciplinary lectures or even not in

academic writing courses but in courses to train critical thinking and communication skills (Andrews, 2019). Overall, the instruction and facilitation of how to construct argumentation in generic academic writing pedagogies are not sufficient to help students meet the high expectation in their disciplines.

As discussed above, due to the challenges to offer adequate support to student writers in academic writing, students struggled to demonstrate creativity and criticality in the process of epistemological or ideological transformation through academic writing tasks. Consequently, a creative academic writing framework, the DREAM model is designed to elicit and facilitate student writers to think creatively and critically in developing their own voices and constructing argumentation in writing tasks meanwhile following academic conventions across disciplines. This paper introduces and explains theoretical foundations of the DREAM model and suggests how it can be implemented within different levels of higher education.

**DREAM model for academic writing pedagogy**

The DREAM model stands for Discovering, Refreshing, Engendering, Adapting, and Measuring stages that describe creative and critical thinking skills that student writers need to apply and practise in the process of completing academic writing tasks. The lead author of this paper (Zheng Li) developed the DREAM model to encapsulate the academic writing process as being one of creating, during which student writers develop their epistemological and ideological voices in accordance with different rhetorical purposes of text types and distinguishable criteria respectively required in diverse disciplines.

**Academic writing and creative thinking**

The DREAM model challenges the conventional view that creative thinking is thought to run contrary to the normative approach of academic writing which heavily relies on discourse conventions such as referencing, academic language, formats of questions and answers (Badenhorst et al., 2015). In the DREAM model conception, academic writing is inseparable from creative thinking or creativity of student writers. According to Badenhorst et al. (2015), thinking creatively allows students to break customs and rules in a system, see alternatives and seek novelties in academic tasks. However, opponents of eliciting creative thinking in academic writing regard creativity as reformation of established theory or pedagogy and consider that student writers, especially novices, may fail to follow academic conventions if they are led to be creative in argumentative writing (Allison, 2004). Such an opposing view only recognises one layer of creativity, which as a special talent brings significantly reforming influences within a discipline or across disciplines and surprise the large population with rebellion against established social rules (Boden, 2009; Sternberg, 2009) but ignores multiple layers of the concept. Besides bringing reformation and potential rejection of existing knowledge and theories, creativity can also bring novelty and high efficiency in daily life problem solving, which schools-based research has found can be acquired through subject learning (Rogaten and Moneta, 2016; Isaksen, 2009; Boden, 2009). Allison (2004) recognised that creative thinking in academic writing allows student writers to think diversely and independently, and to avoid cliché and ventriloquism in writing tasks. Similarly, Badenhorst et

al. (2015) argued that seeking novelty allows student writers to concentrate on developing their ideas rather than writing rules and conventions. Therefore, in the DREAM model pedagogy framework the creative thinking of student writers is at the level of transforming knowledge and establishing their own epistemological voices of perspectives, solutions, and research methods for their academic writing tasks.

**Academic writing and critical thinking**

The DREAM model develops the critical thinking of student writers because the definitions of critical thinking imply its inseparable use in argumentation. However, although there are many common features of definitions of critical thinking, there is no single agreed definition among scholars and researchers. However, they tend to be rooted in the use of Socratic questioning in the cognitive process of reasoning and critical thinking. Edward Glaser defined it as sourcing for argumentation in the 1940s (Hughes, 2014). Richard Paul, in 1990, described critical ability in analysing and evaluating argument (Burbules and Berk, 1999). Critical thinking has also been equal to rationalisation and logical reasoning (Lamb, Maire and Doecke, 2017; Nicolas and Raider-Roth, 2016); selecting the most useful and relevant evidence and building the validity (Rear, 2019; Cameron, Nairn and Higgins, 2009). Andrews (2007) contended that critical thinking is in tight association with argument (the product) and argumentation (the process). Moreover, Yancey (2015) stated that empirical studies had revealed that students with developed critical thinking at university level could explore, conceptualise, and refresh their epistemic comprehension through reading and comprehending multiple resources in their discipline. Such advanced critical thinking ability allows them to identify likeness and disparities to the heterogeneity of ideology (Yancey, 2015). Overall, critical thinking ability is facilitative to student writers in argumentation to complete their academic writing tasks. In the DREAM model conception, critical thinking allows student writers to develop argumentation on their own voices of perspectives, solutions, and the validity of their research methods and research findings.

**The DREAM model stages in the process of academic writing**

In the DREAM model, academic writing process is regarded as a process whereby student writers record how they transform knowledge and create their perspectives, solutions, research methods, research processes, research findings with critical analysis. Then they write their thoughts according to the requirements of the text types of tasks and the criteria set by different disciplines. When using the DREAM model academic writing framework, students are assisted to think creatively and critically based on the topic given in a written task. Academic conventions are taught in line with the requirements of each stage as well as when students think that they have gathered adequate knowledge for information processing and writing at each stage. It is an integrated framework (See Figure 1) based on the theory of CPS process and the process of academic writing.

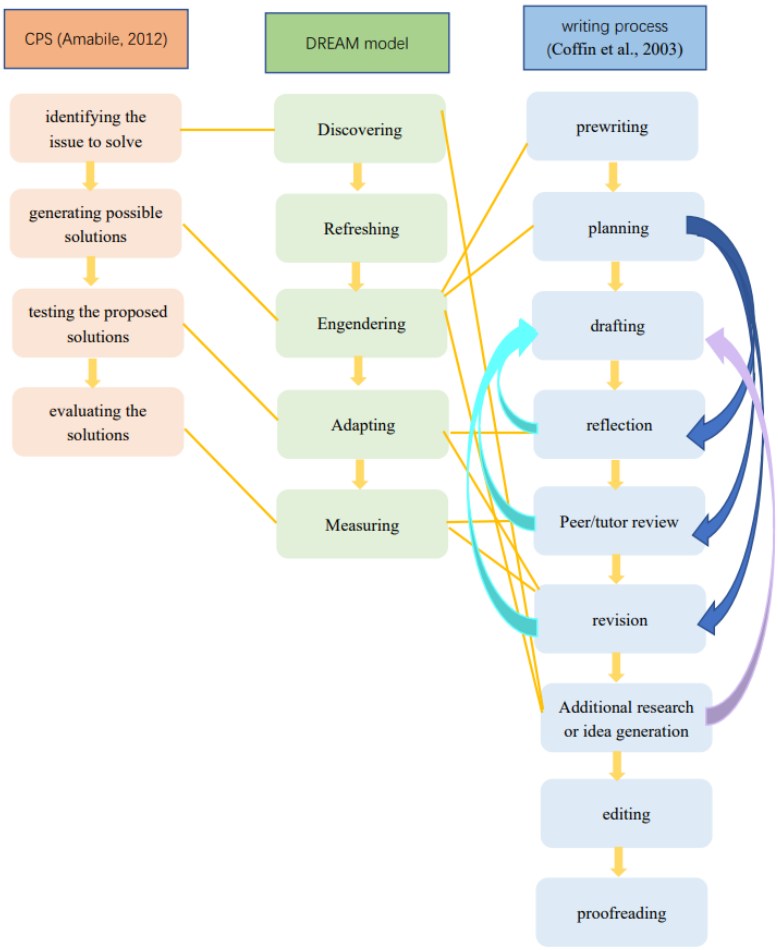


**Figure 1.** The connection between DREAM Model and CPS, DREAM and writing process.

CPS was initially developed by Osborn in 1953 and refined by Osborn and Parnes in 1967 which modelled the creative process of addressing complex real-life issues (Puccio and Cabra, 2008). After that, researchers interested in CPS derived several versions with variations of stages (Puccio and Cabra, 2008; Treffinger, Isaksen and Dorval, 2003). An in-depth analysis on different versions of CPS, Puccio and Cabra (2008) argued that CPS explicated the natural process of creative thinking and delineated cognitive operations that individuals might conduct while creating. They cited that regardless of the varied stages designed in different versions, all could match Kaufmann's (1988) three stages of natural problem-solving thinking phrases- identification, development, and selection (Puccio and Cabra, 2008). Amabile (2012) advanced four major thinking stages of CPS as problem identification, response generation, testing or validation, and evaluation. The DREAM model respects the natural creative problem-solving phrases by Kaufmann (1988, cited in Puccio and Cabra, 2008) and Amabile's (2012) four stages of CPS. The discovering, engendering, adapting, and measuring stages are designed to cope with the last three stages of Amabile's (2012) CPS suggestion.

The Discovering stage is designed for student writers to not only identify issues to solve, but to recognise the rhetorical situation and purposes, acquire specific knowledge and relevant

studies associated to a given writing task. In addition, the DREAM model adds a Refreshing stage after the Discovering stage by considering that clarification on issues and knowledge identified would allow student writers to establish their epistemological or ideological perspectives on the rhetorical purposes of the writing tasks. As the Thinking Skills Model aligned to CPS by Puccio, Murdoc and Mance (2007, cited in Puccio and Cabra, 2008) suggested, clarification allows individuals to perceive the gaps to diminish and establish the "ownership" of the issues to be solved.

This design also complements a general academic writing process suggested as prewriting, planning, drafting, reflection, peer/tutor review, revision, additional research, or idea generation, editing and proofreading (Coffin et al., 2003, pp. 34). At the prewriting stage, students are expected to generate ideas and collect ideas of others through brainstorming and freewriting. Adding Discovering and Refreshing as preparation stages before idea generation facilitates student writers to see the meaning of their creative ideas in the research-based writing tasks and the significance of argumentation in academic writing.

Different from the common academic writing process, of which brainstorming is the first step, when applying the DREAM model framework, student writers begin brainstorming, making remote associations, freewriting, planning at stage 3 of the model, i.e., Engendering, with a basic knowledge base of the research topic which is acquired through stage 1 and 2. Then student writers complete stages 4 and 5 (Adapting and Measuring) on their generated ideas before drafting as testing or validation, and evaluation suggested in Amabile's (2012) CPS stages. After drafting, student writers will repeat stage 4 and 5 to revise the ideas; if necessary, they may go back to beginning and gain more disciplinary knowledge for more idea generation. Below are discussions of theoretical foundations for the design of each stage of the DREAM model framework, its use across text types in a range of disciplines, and pedagogical suggestions for academic writing supporting tutors and disciplinary lecturers.

**The theoretical foundations for the design of each DREAM model stage**

*Stage 1 Discovering*

Stage 1 Discovering is designed for student writers to gather relevant knowledge to the key concepts of the topic, recognise an issue in each writing task, and identify the rhetorical purposes of text types. Creativity models, for example, Csikszentmihalyi's systems model of creativity (1988, 1998, cited in Csikszentmihalyi, 2014), Amabile's (2012) componential theory of creativity (1983, 2002, cited in Amabile, 2012), Sternberg's investment theory of creativity (1996, 2005, cited in Sternberg, 2009), all reveal that sufficient knowledge base of a certain discipline is the prerequisite for one to create. Accordingly, with a foundation of adequate knowledge of a discipline, one knows issues that need to be addressed which may inspire their motivation to solve problems with creativity, or devotion to enrich or even to challenge existing knowledge in that discipline. From the view of academic writing pedagogy, with a sufficient knowledge base, student writers can identify issues to address, disciplinary purposes in different text types and expectations in the writing tasks (McCambridge, 2015). Parallelly, findings from continuous research on critical thinking also revealed that with abundant specific

knowledge, concepts, and principles in a specific domain, the critical thinkers perform better in critical tasks (Stanford Encyclopedia of Philosophy, 2018; Dwyer, 2018; Lamb, Maire and Doecke, 2017). In addition, Dwyer (2018) found that individuals who have expertise in a particular area demonstrate better critical ability in the cognitive process in relevant topics than those unfamiliar to the topic. Therefore, at the Discovering stage, student writers prepare for the writing through knowledge acquisition. They gather adequate knowledge of a given task and acquire relevant knowledge in the disciplinary field of a writing task.

*Stage 2 Refreshing*

Unique to the DREAM model is the introduction of the Refreshing stage. Refreshing allows student writers to clarify the knowledge gaps and construct their knowledge base through combing the massive information gathered from stage 1 before engendering new ideas. At stage 2, Refreshing in the DREAM model, student writers are scaffolded to analyse and evaluate information gathered at stage 1. They synthesise different ideas from resources and construct their own epistemological and ideological base of knowledge. Student writers seek clarity in their own interpretation of knowledge understanding and transformation. Critical thinking abilities relating to analysis, evaluation, and synthesis play a key role at stage 2 in knowledge transformation and meaning making. The DREAM model framework for academic writing pedagogies is theoretically founded on creativity models of which critical thinking as part of the creating process of writing. For example, Sternberg (2009) defined analytical, synthetical, and practical-contextual abilities as intelligence elements in the process of creating. Moreover, Amabile (2012) categorised cognitive styles as creativity-relevant skills which are fundamental and internal components for knowledge transformation and novelty of thought construction. The academic literacies perspective in academic writing also regards the importance of synthesis and analysis used in reviewing and clarifying. Jones (1999) indicated that students developed clear understanding of themselves through the practice of "the cycle of synthesis and analysis" advocated by Skehan (cited in Jones, 1999) in reviewing their own activities in pre-tasks, tasks, and post-tasks. Paxton and Frith (2014) suggested that clarification was essential in the process of knowledge making. Such a process of synthesis and analysis facilitates students to see gaps in knowledge understanding and amend possible conceptual breakdown in academic literacies. Thus, a cycle of review on disciplinary knowledge with synthesis and analysis would allow student writers to clarify ideas that they propose or oppose and construct their own epistemological and ideological knowledge base.

*Stage 3 Engendering*

'Engender' a synonym for 'generate', 'create', 'inspire', 'make', 'produce', implies that at stage 3, student writers are encouraged to think divergently regardless of the appropriateness, effectiveness, and usefulness of ideas. Based on their epistemological and ideological knowledge based transformed in stage 2, student writers are invited to create their own perspectives on a controversial topic, their solutions to an issue, their methods to conduct a study, or even their ideas of challenging the existing theories or disciplinary rules. Student writers can record their engendered ideas through freewriting and brainstorming. Divergent thinking, defined by Guilford used to be regarded as creative intelligence in 1950s and 1960s

(Dwyer, 2018; Funke, 2009; Razumnikova, 2012). According to Funke (2009), during that era, divergent thinking proponents encouraged individuals to generate unusual ideas to a common topic or associate uncommon objects to make something new in tests on creative thinking such as Guilford's Unusual tests (1950), Mednick's Remote Associated Tests (RAT) (1962), Torrance Test of Creative Thinking (1966) (cited in Almeida et al., 2008; Kim, 2006). However, the conception of creativity means more than thinking divergently. Convergent thinking like critical analysis, evaluation, and decision making need to be involved in the process of creating (Dwyer, 2018; Lubart, 2016; Cropley, 2006; Razumnikova, 2012; Meusburger, 2009). Accordingly, the criteria of the 2022 Programme for International Student Assessment, (PISA) on creative thinking examine both divergency and convergency (OECD, 2022). Even though, the early-era expectation of creativity on divergent thinking still affects the design of stage 3. Student writers are instructed and scaffolded to make remote associations among ideas that they have collected and known, to seek more possibilities out of the limitation of existing knowledge or even from other disciplines at stage 3. For instance, examples of scientific discovery of one discipline which were inspired by another irrelevant discipline could be used to enable students' understanding about remote associations. Students can be guided the association points in the sampled multidisciplinary and interdisciplinary studies. Then, a scaffolding approach would be used to help students to discover associations of remote items from what they have collected or other things that they can brainstorm. The concern of whether their ideas creative or not, useful, or not, and/or even proper or not, in the task field and discipline, is the work to do at stage 4 and 5.

*Stage 4 Adapting and Stage 5 Measuring*

At stage 4 Adapting, student writers self-examine and self-review their ideas and the quality of writing (See Figure 2.). When adapting their ideas, student writers critically analyse and evaluate the ideas that are generated at stage 3. They may experiment with their ideas in primary research, or they may compare or contrast their ideas with others' ideas from secondary research. They argue the novelty, appropriateness, and meaningfulness of their ideas. If the generated ideas are not satisfactory, student writers may repeat stage 1, 2, 3; otherwise, student writers move to stage 5 Measuring. At stage 5, student writers discuss their ideas to peers and disciplinary lecturers or tutors for review. They defend their ideas based on findings from the adapting stage in their conversations with peers and disciplinary lecturers or tutors. They may repeat stage 1, 2, 3, 4, if their defence for their own ideas is weak and lacks rationale. They draft their ideas by following text type requirements and academic conventions if they can rationalise their ideas with sufficient, relevant, and representative evidence as well as meet the expectation of a writing task of a discipline. After drafting, student writers process to revising the quality of writing including their use of discourse, and the application of academic conventions in argumentation by different text types. They can self-review to adapt the quality of writing and they can also ask peers and academic writing supporters to measure the quality of their writing. (See Figure 2.)

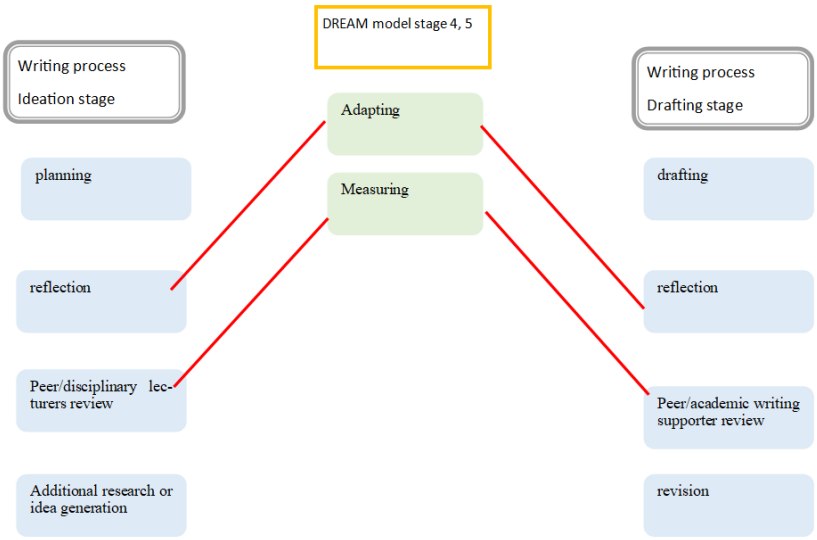


**Figure 2.** The Adapting and Measuring stages in the academic writing process.

The design of stage 4 and 5 has theoretical foundations in creativity models and CPS. Creating is not just generating new innovative ideas but has more focus on testing and experimenting the divergent thinking results through convergent critical analysis and evaluation. Convergent thinking seeks logic, rationality, appropriateness, conventionality in the divergent cognition of creating, to determine the value of creativity within a discipline (Meusburger, 2009). Meaningful and valuable creative ideas are distinguished from quasi- or pseudo-creativity which lacks contribution, usefulness, or practicality (Dwyer, 2018; Khatri and Dutta, 2018; Razumnikova, 2012; Cropley, 2006). Critical thinking is the core cognitive skill and argumentation is the main cognitive process for student writers at stage 4 and 5. The convergent thinking in creative process requires critical abilities of logical reasoning, inquiring, searching sources for argumentation, judging credibility of resources, analysing and evaluating argument, rationalising assumptions, and/or making decision (Standford Encyclopaedia of Philosophy, 2018; Lamb, Maire and Doecke, 2017; Nicholas and Raider-Roth, 2016; Hughes, 2014; Iakovos, 2011). In connection to the writing process approach (Curry and Hewings, 2003), stage 4 and 5 are like the stages of drafting, reflection, peer/tutor reviews, revision, but with more emphasis on how to think critically, how to make argument through student writers' actual process of creating their own piece of writing based on their own epistemological and ideological perspectives in any writing tasks, and how to utilise academic conventions properly in argumentation.

In general, the DREAM model in academic writing pedagogy integrates the creative process in the research of creativity models and the writing process suggested in the process approach of academic writing pedagogies. The DREAM model values transformative designs which have

been continuously advocated by academic literacies pedagogies (Lillis et al., 2015; Lillis and Scott, 2015; Lea and Street, 1998) and recognises the inseparability of argumentation in the process of transforming knowledge and creating ideas.

*The theoretical foundations for the use of DREAM model in different text types*

The design of the DREAM model framework also addresses the concern of researchers that current academic writing pedagogical instructions and practices are insufficient for student writers to be confident of completing their writing tasks across disciplines. Current academic writing pedagogies continuously focus on text understanding, linguistic use of discourses, academic conventions and rules, requirements of text types and criteria from a range of disciplines in higher education (Lillis et al., 2015; Andrews, 2009; Lillis and Scott, 2015; Coffin and Hewings, 2003). When disciplinary lecturers design writing tasks, they expect student writers as producers and students' voices to be heard in meaning making and knowledge transformation in a range of text types in specific disciplines (Russell and Mitchell, 2015; Lillis et al., 2015; Chanock, Whitmore and Nishitani, 2015). In fact, argumentation is essential in academic writing regardless of text types even though with discrepancies in rhetorical purposes and text structure requirements (Andrews, 2007; Coffin and Hewings, 2003). It indicates that during the writing process, regardless of text types, student writers experience the cognition of creative engagement and output in establishing own epistemological and ideological perspectives, as well as critical argumentation on the value of creative output.

*The use of DREAM model academic writing supporters and disciplinary lecturers*

The DREAM model signifies meaning making and knowledge transformation which academic literacies approaches advocate but also weighs academic conventions which allow student writers to express their voices in required discourse, structure, and rules. It emphasises creative thinking and critical thinking towards disciplinary knowledge to address the rhetorical purposes of different writing tasks in the writing process. In addition, it regards academic discourses, text structure, and academic conventions of different text types as the communication tools through which student writers demonstrate how they generate their ideas and reason their ideas. Therefore, supporting student writers to complete academic writing tasks is not only the job of academic writing tutors but also the involvement of the disciplinary lecturers who play a vital role in facilitating the cognitive development of student writing.

The DREAM model in academic writing pedagogies suggests the engagement of subject-specific lecturers in assisting writing practices to the tasks of their disciplines. In the specifically designed academic writing courses or workshops for novice student writers in foundation programmes, pre-sessional EAP programmes, and/or the first-year programmes, academic writing tutors could choose commonly known topics for student writers to practice writing by implementing the cognitive skills and academic conventions through the stages of the DREAM model. In disciplinary courses, academic writing tutors support student writers completing their academic writing tasks. For instance, they encourage student writers to regard the writing task as a process of creating their own knowledge and perspectives by following the DREAM model stages. They provide support of general academic conventions, creative

thinking, critical thinking, and argumentation skills at each stage, but they do not judge the quality of student writers' generated ideas and argument made at various stages. Dwyer (2018) concerns that although their expertise at critical thinking and argumentation allows them to still think critically in supporting student writers draw on relevant cognition process, their lack of core knowledge base in specific disciplines limits them to judge the achievements or errors made in student writers' heuristic work. Such was debated by Russell and Mitchell (2015). Russell was concerned that academic writing pedagogies might not address the exact contents in argumentation but only cover the general writing conventions and rules. According to Mitchell, academic writing tutors scaffold the general cognition of being critical and critical disposition of student writers in academic writing, for example, being open to any possibilities or challenging to existing knowledge. However, it is a job of disciplinary teachers to judge the quality of knowledge transformation, the novelty of ideas, and the level of critical argument that associated with specific contents (Russell and Mitchell, 2015). French (2018) recommends that subject-specific lecturers could build community of writing practices and conduct open talk with students about their struggles to specific writing tasks.

For advanced levels in higher education in academic writing pedagogy, the lecturers of specific disciplines discuss with student writers their ideas and findings with relevant disciplinary knowledge because they are respected as the gatekeepers of the study field to evaluate the novelty and value of creative ideas or products according to Csikszentmihalyi's (1988, cited in Csikszentmihalyi, 2014) systems model of creativity. The lecturers inform student writers about the latest research in the research field and facilitate student writers to analyse their ideas in comparison to the studies recently selected in journals and the universally recognised theories or studies that have been retained within established practice (Csikszentmihalyi, 1988, cited in Csikszentmihalyi, 2014). In addition, scholars in critical thinking and argumentation also agree that those with abundant specific knowledge, concepts, and principles in a specific discipline and those with expertise in a particular research area demonstrate advanced critical ability in reasoning, analysing, evaluating novel thoughts in disciplinary-relevant topics (Stanford Encyclopaedia of Philosophy, 2018; Lamb, Maire and Doecke, 2017; Dwyer, 2018).

Thus, as the DREAM model advocates, academic writing tutors not only instruct student writers academic conventions and writing skills but also facilitate student writers to develop the dispositions and general abilities in thinking creatively and critically in writing tasks. They facilitate student writers to write their creative ideas and argumentation on the ideas based on the required text structure and academic conventions. The disciplinary lecturers instruct student writers in specific knowledge, scaffold them to think creatively and critically with the disciplinary knowledge, and supervise the quality of creative ideas and argumentation in response to the rhetorical purposes of the writing tasks.

**Conclusion**

The proposed DREAM model in academic writing pedagogies builds upon academic literacy approaches advocated by (Lillis et al., 2015; Lillis and Scott, 2007; Lea and Street, 1998) as well as working within academic conventions and rules required in different text types of writing

tasks across a range of disciplines. The DREAM model regards student writers' writing as a process of creating, of which creative thinking and critical thinking are the major cognitions. The design of each stage, Discovering, Refreshing, Engendering, Adapting, and Measuring - is grounded in the theories of creative problem-solving process and creativity models (Amabile, 2012; Sternberg, 2009; Csikszentmihalyi, 1988, cited in Csikszentmihalyi, 2014). As discussed in CPS and creativity models, thinking divergently is just part of creating, thinking convergently with critical synthesis, analysis, and evaluation on the value of creative ideas plays a more significant role in the process of creating. In connection to academic writing, student writers experience similar cognitions. They create their ideas for writing tasks based on their epistemological and ideological perspectives to disciplinary knowledge. They reason and make argument through critical thinking on their ideas in writing tasks.

The implementation of the DREAM model aims to support the roles of academic writing tutors and disciplinary lecturers in the writing process of student writers. It suggests academic writing tutors apply it to facilitate novice student writers in actual writing in academic writing courses that are offered in foundation programmes, EAP programmes, and/or the first-year programmes. It also recommends disciplinary lecturers to use it to scaffold student writers in their idea's initiation and development and collaboration between disciplinary lecturers and academic writing supporters. However, more investigation on the actual implementation of the DREAM model is needed through pedagogical interventions and empirical studies. Further research on the DREAM model in academic writing pedagogies is needed to address how it would effectively impact the dispositions and abilities of creative thinking and critical thinking of student writers in writing asks, how it be integrated in academic writing curriculum, and how it be used among academic writing tutors and disciplinary lecturers in the delivery of course contents and dialogues with student writers.

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