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The Kemp Instructional Design Model as a Framework for Metacognitive Strategy Development in Enhancing Self-Regulation in EFL Academic Writing

A B S T R A C T

This correlational study aimed to examine the efficacy of the Kemp Instructional Design Model in facilitating the development of metacognitive strategies and consequently enhancing self-regulation within the domain of academic writing among advanced EFL learners at Tikrit University. Grounded in instructional design theory and second language acquisition frameworks, the study sampled 108 third-year undergraduate students. Data collection involved diagnostic assessments alongside validated questionnaires to evaluate metacognitive strategy usage, alignment with the nine elements of the Kemp model, and writing proficiency. Employing an experimental design, the research investigated the Kemp model's role as a scaffold for fostering metacognitive strategy acquisition to improve self-regulatory capacities. Over an eight-week semester, participants engaged in Kemp-guided instructional interventions comprising learner analysis workshops, targeted strategy modeling, iterative drafting processes embedded with self-regulatory prompts, and continuous formative feedback cycles. Pre- and post-intervention writing tasks were assessed via an analytic rubric, complemented by a validated self-regulation questionnaire measuring planning, monitoring, and evaluation constructs (Cronbach's $\alpha \geq .84$). Findings substantiate the Kemp model's nonlinear phases as effective scaffolding mechanisms for cultivating metacognitive strategies, thereby enhancing planning, monitoring, and evaluative processes in EFL academic writing contexts. Pedagogically, the study advocates for the integration of structured instructional design phases coupled with explicit self-regulatory prompts and recommends faculty development initiatives focused on optimizing feedback delivery.

نموذج تصميم التعليم كيمب كإطار لتطوير استراتيجية ما وراء المعرفية في تعزيز التنظيم الذاتي في الكتابة الأكاديمية باللغة الإنجليزية كلغة أجنبية

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الخلاصة:

هدفت هذه الدراسة الارتباطية إلى دراسة فعالية نموذج كيمب للتصميم التعليمي في تسهيل تطوير استراتيجيات ما وراء المعرفة، وبالتالي تعزيز التنظيم الذاتي في مجال الكتابة الأكاديمية لدى متعلمي اللغة الإنجليزية كلغة أجنبية المتقدمين في جامعة تكريت. اعتمدت الدراسة على نظرية التصميم التعليمي وأطر اكتساب اللغة الثانية، وشملت عينة من ١٠٨ طلاب في السنة الثالثة من المرحلة الجامعية. وشمل جمع البيانات تقييمات تشخيصية إلى جانب استبيانات مُعتمدة لتقييم استخدام استراتيجيات ما وراء المعرفة، والتوافق مع العناصر التسعة لنموذج كيمب، وكفاءة الكتابة. وباستخدام تصميم تجريبي، بحث البحث في دور نموذج كيمب كركيزة أساسية لتعزيز اكتساب استراتيجيات ما وراء المعرفة لتحسين قدرات التنظيم الذاتي. وعلى مدار فصل دراسي امتد لثمانية أسابيع، شارك المشاركون في تدخلات تعليمية موجهة من كيمب، شملت ورش عمل لتحليل المتعلمين، ونمذجة استراتيجية مُستهدفة، وعمليات صياغة تكرارية مُدمجة مع مُحفزات التنظيم الذاتي، ودورات تغذية راجعة تكوينية مستمرة. تم تقييم مهام الكتابة قبل وبعد التدخل باستخدام معيار تحليلي، مُكمل باستبيان مُعتمد للتنظيم الذاتي يقيس عناصر التخطيط والمراقبة والتقييم (α كرونباخ $\geq \ ٠.٨٤$). تُثبت النتائج أن المراحل غير الخطية لنموذج كيمب تُمثل آليات دعم فعّالة لتنمية الاستراتيجيات المعرفية، مما يُعزز عمليات التخطيط والرصد والتقييم في سياقات الكتابة الأكاديمية لمُتعلمي اللغة الإنجليزية كلغة أجنبية. من الناحية التربوية، تدعو الدراسة إلى دمج مراحل التصميم التعليمي المُهيكلة مع مُحفزات تنظيم ذاتي واضحة، وتُوصي بمبادرات تطوير أعضاء هيئة التدريس التي تُركز على تحسين تقديم التغذية الراجعة..

الكلمات المفتاحية: نموذج كيمب للتصميم التعليمي، الاستراتيجيات ما وراء المعرفة، التنظيم الذاتي، الكتابة باللغة الإنجليزية كلغة أجنبية(EFL) ، التصميم التعليمي.

1. Introduction

1.1 Statement of the Problem

Academic writing within EFL contexts continues to represent a formidable challenge, largely attributable to learners' insufficient self-regulatory capacities encompassing the planning, monitoring, and evaluation of their writing processes (Zimmerman, 2000). Traditionally, the writing pedagogy that is common in Iraqi higher education institutions usually focuses mainly on grammatical accuracy and neglects strategic competency due to a lack of recognition of metacognitive

scaffolding's crucial role (Teng & Zhang, 2016). The Kemp Instructional Design Model, known for its non-sequential, student-centered approach and multiple rounds of improvement, offers a holistic framework that can fulfill this need in pedagogy.

In EFL contexts, there is a growing need for learners to be able to write academically that presents challenges which are beyond measure. These learners are not generally provided with systematic instruction in strategic self-regulation and metacognitive awareness thus they have to struggle. Technological innovation and curriculum development aside, the practices of instruction in many EFL conditions are still mainly product-based so learners do not have enough opportunities to acquire the necessary cognitive and regulatory skills for the academic writing process on their own. It is supported by scientific data that students of English as a foreign language are found struggling in many instances to single-handedly manage the major writing activities that are content planning, coherence monitoring, and revision evaluation that cause them to have reduced academic performance and lowered self-efficacy (Teng & Huang, 2019; Zimmerman, 2002). In this case, the learner-centric and cyclic nature of the Kemp Instructional Design Model indicates the potential of a promising scaffold to systematically embed metacognitive strategy training and improve self-regulatory abilities. Such a pedagogical gap calls for keen investigation into the depth the deployment of Kemp phases can actually facilitate learners' competence in academic writing control.

1.2. Limitations of the Study

During the academic session of 2024-2025, this research was conducted with third-year English as a Foreign Language (EFL) students at Tikrit University, focusing on the deployment of the Kemp Instructional Design Model to develop self-regulatory skills for academic writing. These results open up the way for new understanding of the role of educational design frameworks in this field but their usefulness is still limited to the particular setting at the institution, a rather small number of participants, and only one academic semester. Additionally, the employment of self-report questionnaires as a chief gauge of metacognitive actions

opens up to possible prejudices which are natural to subjective data collection methods.

1.3. Significance of the Study

This research carries great importance not only for the improvement of theory but also for the practical application of teaching methods in the field of EFL writing. The study offers experimental support for using the Kemp Instructional Design Model as a viable tool to develop metacognitive strategies, hence presenting a methodical and organized way of boosting learners' self-regulatory skills. For learners, the findings underscore the critical importance of scaffolded planning, monitoring, and evaluative processes in fostering autonomous writing proficiency. For educators and curriculum developers, the study presents a pragmatic framework for embedding reflective practices and continuous feedback cycles within writing pedagogy. By aligning instructional design principles with metacognitive theory, this research substantiates and advances the ongoing paradigm shift toward learner-centered instruction and the promotion of lifelong learning competencies within EFL contexts.

Academic writing inherently involves intricate cognitive challenges, particularly for EFL learners who must concurrently manage linguistic accuracy, rhetorical norms, and the self-regulation of their compositional processes (Flower & Hayes, 1981). Despite extensive scholarship on metacognitive strategies and self-regulatory frameworks (Zimmerman, 2000; Flavell, 1979), prevailing EFL writing instruction largely retains a product-oriented focus, frequently neglecting to provide adequate support for learners' planning, monitoring, and evaluative behaviors (Teng & Huang, 2019). The Kemp Instructional Design Model, distinguished by its adaptable and nonlinear phases, presents promising potential for the systematic integration of metacognitive scaffolding; however, empirical investigations substantiating its efficacy in EFL writing settings remain notably limited.

1.4 Aims of the Study

This study seeks to critically assess the efficacy of the Kemp Instructional Design Model as a comprehensive framework for fostering metacognitive strategy development and augmenting self-regulatory capacities in EFL academic writing. Specifically, the research objectives are to:

1. Examine the relationship between instructional design components aligned with the Kemp model such as iterative task sequencing and the integration of multimodal resources and the deployment of metacognitive strategies in EFL academic writing contexts.
2. Investigate the role of germane cognitive load, as modulated through Kemp's structured feedback mechanisms, in facilitating writing coherence and promoting effective self-revision processes.
3. Evaluate the detrimental effects of extraneous cognitive load arising from incongruent or poorly aligned instructional materials on overall writing performance.

1.5 Research Questions

This study aims to investigate the role of the Kemp Instructional Design Model as a framework for developing metacognitive strategies that enhance self-regulation in EFL academic writing. Specifically, it seeks to answer the following research questions:

1. What is the nature and strength of the relationship between the iterative design processes of the Kemp Model and the metacognitive functions of planning and monitoring within the writing task?
2. To what degree do the formative evaluation cycles embedded in Kemp's instructional framework mitigate extraneous cognitive load while simultaneously augmenting germane cognitive load?
3. How effectively does learner-centered task design, as delineated by Kemp's principles, facilitate the enhancement of self-regulatory behaviors during drafting and revision phases?

4. To what extent are self-regulation capacities and writing performance measurably improved as a result of an instructional intervention grounded in the Kemp Model?

2. Theoretical Background

2.1 The Kemp Instructional Design Model

The Kemp Instructional Design Model, Jerrold E. Kemp in 1971 first introduced, is a learner-centered flexible approach for instructional planning that embodies a creative way. The Kemp model which is the instructional design is a new non-linear, non-prescriptive approach to the instructional components' inter-dependence and consequently advocates for a re-thinking and re-design of the process. This energy and integrated structure make it very appropriate to the complicated educational environments such as English as a Foreign Language (EFL) training, where learner variety and contextual responsiveness really matter.

The major principle of the Kemp model is in fact the idea that the instructional design has to be a systematic one, however, it must be sufficiently flexible so as to be able to meet the different needs of learners. The model specifies nine related elements: (1) identification of instructional problems, (2) analysis of learner characteristics, (3) articulation of instructional objectives, (4) content sequencing, (5) design of instructional strategies, (6) planning of instructional delivery, (7) selection of resources and materials, (8) evaluation of learner achievement, and (9) revision of instructional strategies. These elements are not sequential, but iterative components within a flexible framework, thus educational designers may return to any part and improve it during the development process (Kemp, 1971; Morrison, Ross, & Kemp, 2007).

A major advantage of the Kemp model is that it is a thorough viewpoint of instruction. By thinking of learners' past knowledge, cognitive styles, and motivational dispositions, it enables the creation of inclusive, differentiated pedagogies. This focus is closely related to constructivist educational theories which emphasize active, meaningful learning and integrating new content with the previously cognitive schemas (Jonassen, 1999). Therefore, the Kemp model is especially relevant to instructional interventions that allow metacognitive engagement and self-regulation among EFL learners.

When it comes to tertiary EFL education, the Kemp model facilitates the development of teaching materials that cater to the diverse linguistic proficiency and cultural backgrounds of the students. Further, its ongoing nature empowers teachers to polish their teaching techniques via formative evaluation and the learners' feedback, which is important in improving skills like academic outline writing. Besides, the model's focus on constant monitoring and subsequent changes fits quite well with the ideas of eco-friendly instructional design as well as learners' gradual development.

Furthermore, the model's compatibility with technology-mediated learning environments testifies to its extended hand of practical utilization. Instructors are able to tailor the coursewares themselves, provide instant reactions, track the learning of students via the use of digital tools – capabilities that are very significant in empowering the learner autonomy and the development of self-regulatory skills in academic writing tasks. As the scholarship on instructional design blooms, the Kempe model is still a base and changeable framework for creating effective, learner EFL-responsive curricula (Gustafson & Branch, 2002). Briefly, the Kemp Instructional Design Model one allows a strong, adaptive framework where instructional aims are in agreement with learner character and the situations cultural. His circular process, focus on the thorough learner analysis and continuous change not only good for writing but academic self-regulation among university students of EFL.

2.2 Metacognitive Strategies and Self-Regulation

Metacognitive strategies are high-level executive functions that involve the intentional organization, observation, and assessment of one's learning. These strategies are vital for developing learner autonomy and self-management skills, especially in the areas of academic writing and second language learning. Flavell (1979), who first introduced the term "metacognition", described it as the knowledge and regulation of one's cognitive processes. In educational contexts, metacognitive strategies empower learners to exert intentional control over their learning by establishing objectives, selecting appropriate tactics, and appraising the efficacy of employed strategies.

Closely intertwined with metacognition is the construct of self-regulation, which denotes the capacity to modulate cognitive, emotional, and behavioral processes to

attain learning goals (Zimmerman, 2000). Pintrich (2000) posits that self-regulated learners actively engage as agents in their educational journey, employing metacognitive strategies to govern their motivation and behavioral responses. Consequently, metacognitive awareness constitutes the foundational substrate for effective self-regulatory functioning.

Within the specific context of writing particularly in English as a Foreign Language (EFL) setting metacognitive strategies are instrumental in augmenting writing performance. Learners possessing heightened metacognitive awareness demonstrate enhanced capabilities in orchestrating their writing through strategic planning, continuous monitoring during drafting, and reflective revision informed by evaluative judgments (Ruan, 2014). This operationalization corresponds closely with Zimmerman's (2002) cyclical model of self-regulated learning, which delineates the sequential phases of forethought, performance, and self-reflection, within which learners engage in goal-setting, self-instruction, self-monitoring, and evaluative self-assessment processes intrinsically metacognitive in nature.

Empirical studies show the effectiveness of metacognitive strategy training in improving writing skills of EFL learners. As an example, Teng (2020) has proved that direct indication aimed at metacognitive strategies caused an increase in self-efficacy, better organization of writing skills, and higher independence of the learner. Also, Bai, Hu, and Gu (2014) named metacognitive awareness as a strong indicator of writings skills of Chinese EFL university students. In unison, these discoveries proclaim the necessity of using metacognitive training in writing lessons, particularly in projects focused on developing students' self-regulated learning.

The ARCS and Kemp instructional design models fit well with the metacognitive strategy instruction. To illustrate, Keller's (1987) ARCS model is mainly concerned with motivational elements that can energize and continue the regulation of behaviors. At the same time, the Kemp model's non-linear and learner-centered format offers plentiful chances of including the metacognitive help along the learning path.

Metacognitive strategies play a vital role in the facilitation of self-regulated learners who have the capacity to independently manage the various demands included in writing tasks. This is very important in EFL situations where the

learners face language difficulties and they have a heavy cognitive load which makes their task even more difficult. Instructional models which directly state the importance of the development of metacognitive and self-regulatory skills are therefore likely to represent a significant leap in writing success and other academic areas.

2.3 Cognitive Load and Instructional Alignment

Cognitive Load Theory (CLT), a theory that was first brought to the world by Sweller (1988), maintains that only by thoroughly considering the limited capacity of working memory in designing instructional materials can be able to help optimize cognitive processing and facilitate meaningful learning. CLT differentiates cognitive load into three separate categories: intrinsic load, which is related to the difficulty of the course of study; extraneous load, caused by poor instructional methods; and germane load, representing those cognitive resources that are spent on schema construction and learning processes. Specifically, in the scope of English as a Foreign Language (EFL) writing pedagogy, the appropriate managing of these cognitive load aspects is the most important thing that leads to the learners' increased ability to understand, organize, and remember new information efficiently.

Instructional alignment, in the terms of Biggs (1996), refers to the extent of the match between learning objectives, pedagogical activities, and assessment mechanisms. The provision of such coherence, especially when instructional designs that are in agreement with learners' cognitive capabilities and targeted outcomes, acts as the prevention of cognitive overload and thus the maximization of the instructional efficiency.

Major educational structures like the ARCS and Kemp models implement cognitive alignment via the integral sectors that involve learner motivation and the methodical yet adaptable instructional planning . Specifically, the ARCS model amplifies germane cognitive load by fostering learner engagement and relevance, while the Kemp model advocates for adaptable instructional sequences that can dynamically accommodate fluctuating cognitive demands.

In sum, effective instructional alignment that strategically integrates cognitive load considerations equips learners to navigate complex tasks such as the formulation of academic outlines and the enactment of self-regulated learning behaviors by minimizing extraneous cognitive burden and promoting deeper, more sustainable understanding.

2.4 Productive Skills in EFL

Speaking and writing skills, which fall within what is known as productive skills, and which require language output, are closely related to the knowledge of the language and the cognitive processes. (Richards & Renandya, 2002). For example, in the area of academic writing, being productive in skills implies the conceptualization of the arguments, the careful choice of words, and the construction of difficult syntactic patterns. A strategic use of both cognitive and metacognitive means is very important in that it helps students to manage the said skills thus making it easier for them to convert the mentioned abstract ideas into well-organized and comprehensible texts. The study explains how Kemp's instructional design phases can function as a driving force that will take students to a productive writing level in their EFL contexts and hence pave the way for the realization of the desired objectives such as the better organization of the content, the acceptance of a wider range of lexical items and the enriched syntactic disposition of the utterances.

2.5 Self-Regulation in EFL Writing

Self-regulation in the context of English as a Foreign Language (EFL) writing encompasses learners' capacity to proactively orchestrate their cognitive, metacognitive, motivational, and behavioral processes throughout the entirety of the writing task(Zubaida & Nagham,2024) . Grounded in Zimmerman's (2000) model of self-regulated learning, writing is reconceptualized not merely as a linguistic or academic endeavor but as an autonomous, dynamic process characterized by goal-setting, strategic planning, continuous self-monitoring, and iterative self-evaluation.

EFL writing entails distinctive challenges due to the inherent cognitive complexity involved in composing in a non-native language. Learners are required to

simultaneously manage linguistic accuracy spanning grammar and vocabulary with higher-order organizational and coherence demands, all while attending to the mechanical aspects of text production. Within this multifaceted context, self-regulation emerges as a pivotal determinant of writing success. Teng and Zhang (2016) assert that students exhibiting robust self-regulatory behaviors tend to produce more effective writing, attributable to their sustained effort, ongoing assessment of progress, and strategic revision informed by both feedback and self-reflective practices.

A large amount of evidence is there to back up the influence of self-control on writing skills of learners who speak English as second language. Bai and Wang (2020) gave an example that students who have more self-regulatory capacities in university-level EFL demonstrate better abilities of organizing ideas, mobilizing metacognitive strategies, and performing reflective critique. The learners who had similar characteristics were also demonstrated to have increased writing self-efficacy and perseverance, which is an important connection between the motivational and cognitive sides of self-regulated learning frameworks.

Better instructional models that emphasis learner autonomy, such as Keller's (1987) ARCS model and the Kemp model (Morrison, Ross, & Kemp, 2007), give the learners a more organized and structured experience in helping them become self-regulated writers by providing them with structured pereques for the systematic implementation of self-regulatory strategies into writing pedagogy. The ARCS model improves learner participation by increasing the motivational factors of attention, relevance, confidence, and satisfaction, which in turn lead to more active and independent interaction with writing tasks. At the same time, the learner-centered and the more flexible design of the Kemp model allows teachers to set instructional activities as they like, and therefore, they can best help students set goals, practice strategic composition, and engage in reflective practices.

As far as practical pedagogical measures are concerned, they may be taken to engender self-regulation in EFL writing, among them being the invention of various strategies, such as guided writing journals, self-assessment checklists, peer review mechanisms, and scaffolded goal-setting exercises. Altogether, they contribute a lot to the growth of students' metacognitive awareness, their gaining

of the authorship of the writing process, as well as the supporting of their belief and confidence in their ability to write coherent and academically rigorous texts.

2.6 Integrating Kemp and Self-Regulation

The combination of the Kemp Instructional Design Model with the construct of self-regulation offers a strategically strong framework for developing autonomy among learners and bringing out the best in academic performance, especially in English as a Foreign Language (EFL) situation. The Kemp Model that is based on holistic and flexible principles was designed by Jerrold Kemp in 1971 and it represents an iterative, nonlinear planning process that meets the diverse needs of students (Gustafson & Branch, 2002).

In contrast with linear instructional models, Kemp's framework enables the parallel consideration of several instructional components such as learner profiles, learning objectives, content sequencing, pedagogical strategies, and assessment modalities which grants a level of flexibility that is especially conducive to the integration of self-regulatory principles. Self-regulation, which comprises the learners' abilities to plan, monitor, and evaluate their learning processes and results, is instrumental in the deep engagement of learning (Zimmerman, 2002).

SRL (Self-regulated learning) is one of the most important parts of successful school performance, especially for writing assignments that require a high level of mental and procedural skills such as planning, organizing, revising, and reflective evaluation. Theoretically, SRL is described in three cyclical stages forethought, performance, and self-reflection (Zimmerman, 2013), which have a direct parallel to the main features of the Kemp Model.

To illustrate, the model's stress on understanding learner characteristics corresponds to the forethought phase, during which learners evaluate their skills and set learning goals. The main point of instructional strategies is equivalent to the performance stage, which allows the full use of the activity, whereas the deciding part of Kemp's framework is similar to the self-reflection stage of SRL.

The blending of Kemp's model with self-regulatory components allows for a learner-centered instructional design that not only engages students but also

enables them to effectively manage their learning pathways. This integrative method is especially productive in situations such as outline writing which demands both structural ordering and metacognitive involvement. By going through Kemp's guided instructional sequences, the students are helped in using SRL strategies like setting goals, self-observation, and self-evaluation, moving from the instructor's exemplified regulation to guided practice, and finally to the independent use of these strategies.

Moreover, the Kemp Model's cyclical and flexible features make it possible to continuously improve the instructional interventions based on the empirical evidence of learners' progress and performance data. As students grow in their self-regulatory skills, the teachers are given a great opportunity to adjust the content and feedback they provide in a flexible way, thus creating a responsive and personalized learning environment that is facilitating continuous development.

Data from experimental research support the beneficial impact of self-regulation on writing skills (Schunk & Zimmerman, 1998; Teng & Zhang, 2016), and the inclusion of these strategies in comprehensive instructional design models such as Kemp's appears to be very promising in boosting EFL learners' ability to cope with complicated academic writing tasks. Such a pedagogical framework is in accordance with the kinds of assignments university-level EFL students usually encounter, where they have to write structured, coherent, and advanced pieces of text in their second language.

Overall, the merging of the Kemp Instructional Design Model and self-regulated learning strategies is a wide, flexible, and research-based framework that is designed to improve writing education in EFL students. This method is not only providing students with the cognitive and metacognitive tools that are needed for efficient writing but also it is creating a stronger feeling of being in control and being responsible for their learning processes among students, which is crucial for continued academic success.

3. Methodology

3.1 Population and Sampling

Population: The research work has as its sample the whole 108 third-year students of the English department at Tikrit University who were registered during the academic year 2024-2025. The participants were made of both male and female students whose ages were from 20 to 22 years.

Sampling Procedure: A total enumeration sampling strategy was adopted, whereby all students that met the inclusion criteria namely, third-year standing and successfully completed prerequisite writing courses were invited to participate in the study. This exhaustive method ensured that the target population was fully represented, thus minimizing the chances of sampling bias and increasing the ability of the findings to be applicable within the specified cohort.

Ethical Considerations: Data was collected only after the University Research Ethics Committee had formally approved the ethical clearance. The participants were given informed consent in writing, they were clearly told that their responses would remain confidential and the participation would be voluntary. The anonymity of the respondents was strictly observed through the use of anonymization procedures. Besides that, students were given a full explanation of the study's aims and methods and were guaranteed the right to leave the study at any time without being penalized or suffering any kind of negative reactions.

3.2 Instruments

- **Analytic Writing Rubric:** This instrument, adapted from Jacobs et al. (1981), systematically evaluated five critical dimensions of academic writing: task fulfillment, coherence and cohesion, lexical resourcefulness, grammatical range and accuracy, and demonstrable self-regulatory behaviors (including planning documentation, monitoring annotations, and evaluative reflections). To ensure scoring consistency, two trained raters underwent calibration sessions, resulting in a high level of inter-rater reliability as indicated by an intraclass correlation coefficient (ICC) of .90.

- **Self-Regulation Questionnaire**: Derived from Zimmerman's (2000) validated instrument, this questionnaire encompassed 18 items distributed evenly across three subscales measuring planning, monitoring, and evaluation processes. Participants responded using a 5-point Likert scale ranging from 1 (Never) to 5 (Always). Reliability analyses revealed strong internal consistency for each subscale, with Cronbach's alpha coefficients of α_planning = .84, α_monitoring = .88, and α_evaluation = .86, respectively.

3.3 Validity and Reliability

Validity. Content validity was established through expert review by three EFL writing specialists, who evaluated items for clarity, relevance, and alignment with Kemp's framework. Construct validity was supported by factor analysis, which confirmed the three-factor structure of the self-regulation questionnaire.

Reliability. Pilot testing with 20 students yielded stable reliability estimates. Cronbach's alpha values exceeded .80 for all scales. The analytic rubric demonstrated strong inter-rater consistency (ICC = .90), and test-retest reliability for the questionnaire over a two-week interval was .82.

Experimental, one-group pretest-posttest design was employed.

4. Results

4.1 Procedural Knowledge and Writing:
Analysis of participants' planning notes, monitoring annotations, and evaluative reflections demonstrated a marked improvement in procedural fluency. The mean frequency of accurately documented steps increased significantly from 2.45 (SD = 0.60) prior to the intervention to 3.82 (SD = 0.55) following the intervention, $t(107) = 15.27$, $p < .001$, with a very large effect size indicated by Cohen's $d = 1.47$. Qualitative analysis of writing drafts further revealed that post-intervention outlines exhibited greater systematicity, incorporating explicit checkpoints (e.g., "Review thesis alignment") and metacognitive margin comments (e.g., "Need stronger evidence here"), thereby reflecting a deeper internalization of metacognitive processes.

4.2 Pre- vs. Post-Intervention Changes

Participants exhibited significant gains both in self-regulated learning and writing performance:

- Self-Regulation: Pre: M = 3.02 (SD = 0.45) vs. Post: M = 3.78 (SD = 0.42), $t(107) = 12.46$, $p < .001$, d = 1.20.
- Writing Performance: Pre: M = 65.4 (SD = 8.7) vs. Post: M = 75.9 (SD = 7.9), $t(107) = 10.92$, $p < .001$, d = 1.05. These large effect sizes underscore the potency of the combined instructional-design and motivational scaffolds.

4.3 Correlational Analyses

Fidelity to Kemp's design phases strongly aligned with self-regulation gains:

- Learner Analysis & Planning Gains: $r = .785$, $p < .001$
- Instructional Strategies & Monitoring Gains: $r = .772$, $p < .001$
- Feedback Mechanisms & Evaluation Gains: $r = .798$, $p < .001$

4.4 Regression Analyses

A hierarchical regression controlling for pre-test SRQ scores revealed that:

- Formative Evaluation Fidelity ($\beta = .43$, $p < .001$) and
- Instructional Strategy Selection Fidelity ($\beta = .38$, $p < .001$)

were both significant predictors of post-test SRQ total scores. Together, they accounted for 54% of the variance in self-regulation outcomes, $F(3, 104) = 41.12$, $p < .001$, $\Delta R^2 = .54$.

1. **Discussion**

    Consistent with social cognitive theory (Zimmerman, 2000) and established instructional design paradigms (Clark et al., 2006), the incorporation of metacognitive scaffolding within the nonlinear phases of Kemp's model resulted in significant enhancements in EFL learners' self-regulated writing behaviors. The implementation of Learner Analysis activities facilitated individualized goal setting, aligning with the tenets of self-determination theory (Deci & Ryan, 1985). Moreover, the deliberate modeling of

metacognitive strategies combined with structured, formative feedback mechanisms bolstered learners' capacities for monitoring and evaluative processes, thereby corroborating Teng and Huang's (2019) empirical evidence regarding the efficacy of scaffolded instructional interventions in EFL contexts. The robust correlations observed, alongside the predictive validity of formative evaluation fidelity, accentuate the indispensable role of timely and targeted feedback in fostering enduring self-regulatory competence.

2. Conclusion and Recommendations

This study provides compelling evidence that the Kemp Instructional Design Model, when integrated with explicit ARCS motivational and metacognitive supports, serves as an effective scaffold for the development of self-regulated writing strategies, yielding both statistically robust and pedagogically meaningful improvements. To leverage these insights, the following recommendations are proposed:

1- Curriculum Integration: It is recommended to systematically integrate self-regulatory cues like planning checklists, monitoring rubrics, and reflective journals in all stages of the Kemp instructional framework in writing curricula to foster learner autonomy and facilitate continuous skill development.

2- Faculty Development: Carry out specific professional development programs that train educators with necessary skills in design-based feedback methods and demonstration of metacognitive strategies, thus making sure that they remain true to the instructional practice, are consistent and effective.

3- Longitudinal Research: Conduct long-term empirical studies in various academic terms and different EFL educational settings such as vocational training institutions and secondary education environments in order to thoroughly evaluate the longitudinal stability and contextual generalizability of Kemp-based instructional interventions.

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