



From Handwritten Corrections to Scientific Identity: Reflections on Mentorship, Hard Work, and Becoming a Grounded Researcher

Chee Kong Yap*

Department of Biology, Faculty of Science, Universiti Putra Malaysia, 43400 UPM Serdang, Selangor, Malaysia



Abstract

Scientific publications are commonly viewed as indicators of achievement and academic productivity. However, the final published article often conceals the difficult journey that precedes its completion. This reflective paper presents personal and academic reflections stimulated by revisiting the draft of my first peer reviewed publication entitled Genetic variation of green-lipped mussel *Perna viridis* (Linnaeus) from the west coast of Peninsular Malaysia, which was later published in Zoological Studies in 2002. The manuscript draft contained handwritten comments, corrections, critical questions, and signatures from my late mentor, Prof. Soon Guan Tan. Looking back at these annotations generated mixed emotions consisting of gratitude, happiness, humility, and nostalgia. The present reflection discusses the often-invisible processes behind scientific development, including repeated revision, constructive criticism, mentorship, perseverance, and intellectual growth. The paper further argues that although artificial intelligence can accelerate academic work, the essential foundations of becoming a grounded researcher remain unchanged. Research integrity, humility, critical thinking, resilience, and respect for mentorship continue to form the roots of meaningful scholarship. This paper was written particularly for new lecturers and young research students to emphasize that there are no true shortcuts in becoming an honest and respectable researcher. Scientific identity develops gradually through continuous learning, correction, and dedication.

Keywords: Mentorship; Scientific Integrity; Reflective Learning; Academic Journey; *Perna viridis*

OPEN ACCESS

*Correspondence:

Chee Kong Yap, Department of Biology, Faculty of Science, Universiti Putra Malaysia, 43400 UPM Serdang, Selangor, Malaysia,
E-mail: yapchee@upm.edu.my

Received Date: 27 May 2026

Accepted Date: 25 Jul 2026

Published Date: 27 Jul 2026

Citation:

Chee Kong Yap. From Handwritten Corrections to Scientific Identity: Reflections on Mentorship, Hard Work, and Becoming a Grounded Researcher. WebLog J Genet Genomic Res. wjggr.2026.g2703. <https://doi.org/10.5281/zenodo.21733603>

Copyright© 2026 Chee Kong Yap. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Introduction

Today academic environments increasingly focus on measurable indicators of achievement, including publication numbers, citations, research grants, and journal impact factors [1, 2]. Such indicators are important because they reflect scientific productivity and visibility. However, these visible outcomes often hide another reality that many young researchers do not observe. Behind every publication there may be multiple rejected drafts, numerous revisions, critical comments from supervisors and reviewers, and periods of uncertainty and self-doubt [3].

Recently, I revisited an old manuscript draft that represented my first published peer reviewed paper: Yap CK, Tan SG, Ismail A, Omar H. Genetic variation of green-lipped mussel *Perna viridis* (Linnaeus) from the west coast of Peninsular Malaysia. Zoological Studies. 2002; 41(4): 376-387. The draft was not merely a manuscript. It contained handwritten corrections, comments, suggestions, and signatures from my late mentor Prof. Soon Guan Tan. Looking at these pages after many years created emotions that are difficult to describe using simple words. I felt happiness because the work eventually became a publication. I felt joy because of the hard work involved. I felt gratitude because a respected scientist spent his valuable time reading and correcting my imperfect draft. I also felt humility because those early drafts were far from the polished writing that readers eventually saw.

The objective of this reflective paper is therefore to share personal reflections regarding mentorship, perseverance, scientific integrity, and academic growth, particularly for new lecturers and research students entering the research world during the present era of artificial intelligence.

The Comments Written by Prof Dr. Soon Guan Tan

Figure 1 represents an important historical and personal scientific record documenting an early stage in the author's research journey before the eventual publication of the study in Zoological

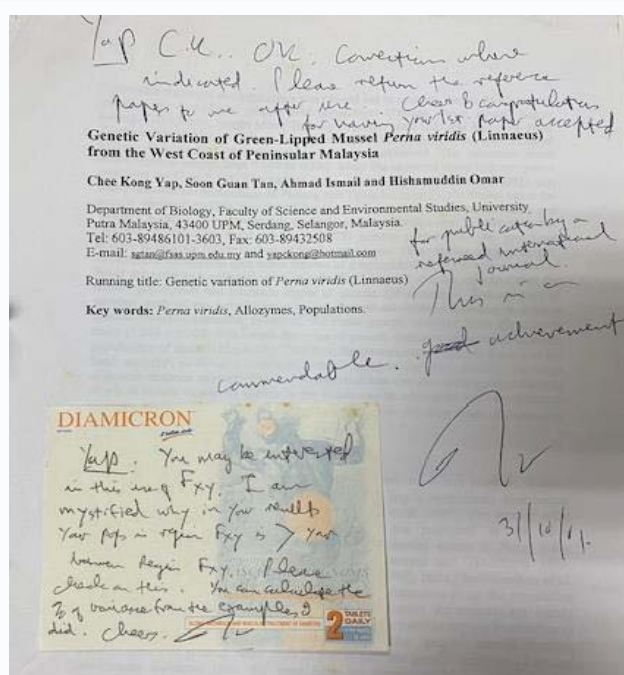


Figure 1: Original draft of the first peer reviewed publication entitled "Genetic variation of green-lipped mussel *Perna viridis* (Linnaeus) from the west coast of Peninsular Malaysia" showing handwritten comments, corrections, and signatures from the late Prof. Soon Guan Tan on 31 October 2001, prior to its eventual publication as Yap et al., (2002).

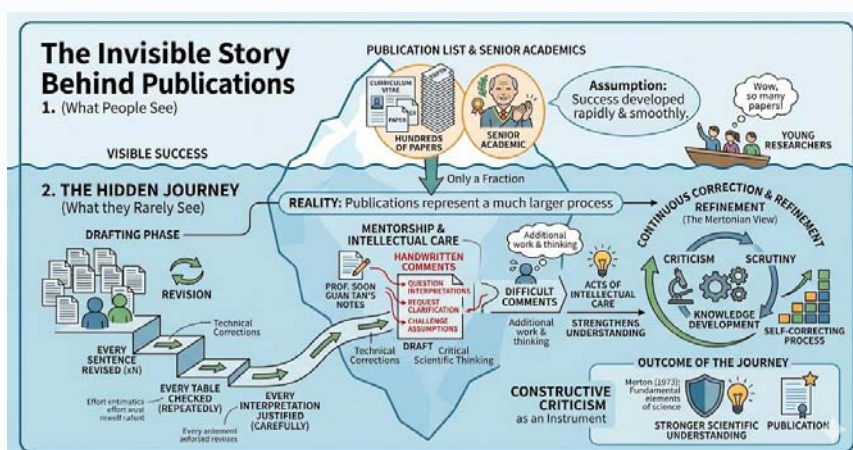


Figure 2: Conceptual Diagram of "The Invisible Story Behind Publications": Contrasting Public Perception with the Submerged Research Journey. Note: This diagram is generated using Google Gemini based on author's perspective and ideas.

Studies [3]. The manuscript contains handwritten comments, editorial suggestions, critical questions, and signatures from the late Prof. Soon Guan Tan dated 31 October 2001, approximately one year before publication. The annotations visible throughout the draft reveal the often-invisible process underlying scientific development. Rather than appearing immediately as a polished publication, scientific manuscripts generally evolve through repeated cycles of refinement, critical review, and intellectual correction [3]. Comments visible on the manuscript, including recommendations for improving interpretation and manuscript structure, demonstrate that scientific progress is rarely linear but instead develops through iterative evaluation and modification. This preserved draft therefore functions as a historical snapshot of a developmental stage that readers normally never see when encountering the final publication.

Beyond its scientific value, Figure 1 also captures the human dimensions of mentorship and academic growth. The handwritten comments made by Prof. Soon Guan Tan on 31 October 2001 symbolize more than editorial corrections; they reflect a mentor's willingness to invest time, effort, and intellectual care in developing a younger researcher. Constructive criticism and mentoring have been widely recognized as important factors influencing scientific confidence, productivity, and long-term academic development [5, 6]. Looking back at this manuscript after many years evokes a mixture of gratitude, joy, humility, and nostalgia because it reflects a period characterized by learning, uncertainty, and growth. The figure also communicates an important message for new lecturers and research students in the present AI era: although technological tools may accelerate writing and improve efficiency, the fundamental

foundations of becoming a grounded and respectable researcher remain unchanged. Intellectual honesty, openness toward criticism, perseverance through revisions, and appreciation of mentorship continue to represent essential and invisible roots of scientific identity.

The Invisible Story Behind Publications

Figure 2 illustrates the dichotomy between the external perception of academic success and the complex internal process required to achieve it. As depicted in the top "Visible Success" section, observers - particularly early-career researchers - often focus solely on public-facing outputs, such as a senior academic's extensive publication list, leading to the misconception that success is achieved rapidly or smoothly (Figure 2). The diagram uses an iceberg metaphor to reveal that this visible success represents only a fraction of the total effort. The "Hidden Journey" section details the arduous "Drafting Phase," involving recursive loops of revision, painstaking technical checks, and rigorous justification of interpretations. Crucially, the model emphasizes "Mentorship & Intellectual Care" as a foundational element, transforming "Difficult Comments" - such as challenging assumptions or requesting clarification - from perceived obstacles into "Acts of Intellectual Care" that directly strengthen understanding (Figure 2). Finally, the framework connects these personal research experiences to Merton's (1973) [7] sociological perspective, illustrating how individual cycles of critique and scrutiny fuel the broader "Self-Correcting Process" essential for scientific knowledge development.

When people see a publication list, they usually see only the final destination. They rarely see the journey. Young researchers frequently see senior academics with hundreds of papers and may assume that success developed rapidly or smoothly. In reality, publications often represent only the visible part of a much larger process.

The draft in front of me reminded me of a period when every sentence required revision, every table required repeated checking, and every interpretation required careful justification. The handwritten notes by Prof. Soon Guan Tan reflected not only technical corrections but also critical scientific thinking. Certain comments questioned interpretations, requested clarification, and challenged assumptions. At that time some comments felt difficult because they required additional thinking and work. However, looking back today, those comments represented acts of intellectual care.

Science itself functions through continuous correction and refinement. Merton (1973) [7] described scientific progress as a self-correcting process in which criticism and scrutiny are fundamental elements of knowledge development. Constructive criticism therefore should not be viewed as an obstacle but rather as an instrument that strengthens scientific understanding.

Mentorship Beyond Technical Guidance

Figure 3 illustrates the complex interplay between technical supervision and deeper human investment in academic mentorship, expanding on the hidden journey previously conceptualized in Figure 2. As shown in the diagram, while many view publications purely as outcomes (Figure 3), true mentorship goes far beyond correcting grammar and methodology. The model highlights the crucial role of "Human Investment & Trust," where mentors invest significant time and intellectual effort, identifying otherwise unrecognized weaknesses and challenging interpretations that are scientifically weak (Figure 3). This critique is reframed as an "Act of Intellectual Care" motivated by the researcher's personal development rather than just the paper itself. The realization "Who cared except him?" illustrates how this genuine mentorship serves as a powerful influence during early academic life (Figure 3). By providing this comprehensive support, mentoring relationships directly catalyze a researcher's long-term future, significantly affecting academic confidence, research productivity, and career development [5, 6].

One of the strongest emotions generated by revisiting the manuscript was gratitude toward Prof. Soon Guan Tan. I realized that mentorship involves much more than technical supervision. A mentor does not merely correct grammar, statistical analysis, or methodology. Mentors invest time, intellectual effort, and trust into developing another person's future. They may identify weaknesses that younger researchers cannot recognize themselves. They may challenge interpretations that appear acceptable but are scientifically weak. Sometimes mentors criticize because they care about the person's development rather than merely the paper itself.

The sentence that repeatedly emerged in my thoughts while looking at the manuscript was simple: "Who cared except him?" This statement does not imply that others did not contribute. Rather, it reflects a realization that during early stages of academic life, genuine mentorship can become a powerful influence. Research has shown

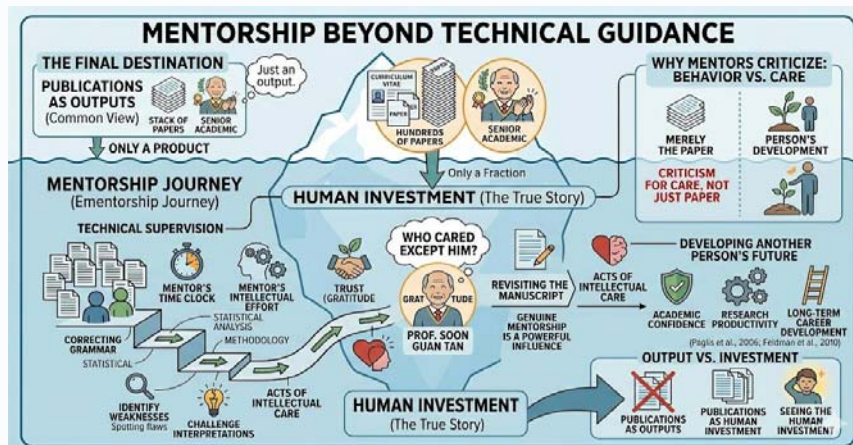


Figure 3: Conceptual Framework of "Mentorship Beyond Technical Guidance": Visualizing the Hidden Journey and Human Investment. Note: This diagram is generated using Google Gemini based on author's perspective and ideas.

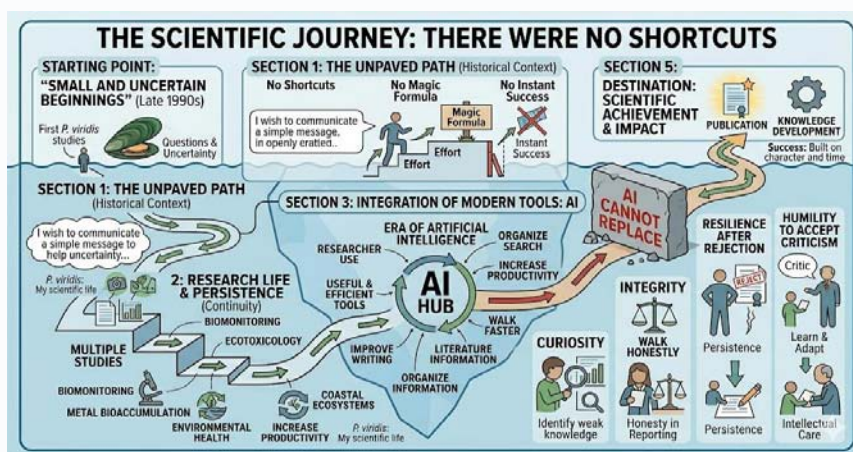


Figure 4: Conceptual Map of the Non-Linear Scientific Journey: Balancing Modern Artificial Intelligence with Foundational Human Traits. Note: This diagram is generated using Google Gemini based on author's perspective and ideas.

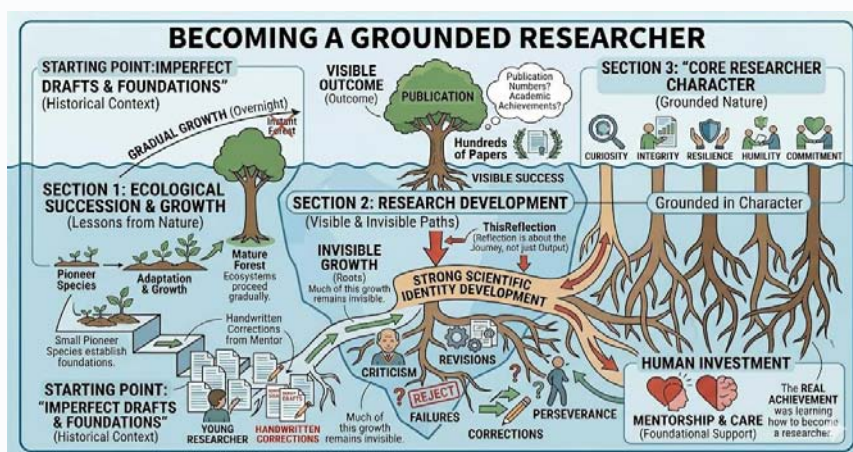


Figure 5: Ecological Analogy of Scholarly Development: Mapping the Visible Artifacts of Publication Against the Submerged Growth of a Grounded Researcher. Note: This diagram is generated using Google Gemini based on author's perspective and ideas.

that mentoring relationships significantly affect academic confidence, research productivity, and long-term career development [5, 6].

Today many students and younger academics see publications as outputs. Looking back at this manuscript, I see something different. I see human investment.

There Were No Shortcuts

Figure 4 illustrates the long-term, unpaved path of scientific research and defines the boundaries between modern technological assistance and irreplaceable human character. The diagram maps a journey that begins with "Small and Uncertain Beginnings" in the late 1990s, tracing a long-term research trajectory on *Perna viridis* across multiple disciplines like biomonitoring, ecotoxicology, and coastal ecosystems (Figure 4). While the framework acknowledges the current "Era of Artificial Intelligence" as an efficient hub that helps researchers "walk faster" by optimizing writing structures and organizing literature, it explicitly establishes a boundary where technology cannot cross (Figure 4). As depicted by the barrier in the diagram, AI cannot replace the core human elements of curiosity, integrity, resilience after rejection, and the humility required to accept criticism. Ultimately, Figure 4 underscores the message that there are no shortcuts or magic formulas to authentic scientific achievement;

modern tools can increase productivity, but they cannot teach a researcher how to navigate the journey honestly.

I wish to communicate a simple message to new lecturers and postgraduate students. I did not come from an easy path. There were no shortcuts. There was no instant success. There was no magic formula. My journey with *Perna viridis* research began during the late 1990s. Since then, the green lipped mussel has become part of my scientific life, extending through multiple studies involving biomonitoring, ecotoxicology, metal bioaccumulation, environmental health, and coastal ecosystems. However, every long journey starts from small and uncertain beginnings.

The present generation lives within the era of artificial intelligence. AI can improve writing structures, assist with literature searches, organize information, and increase productivity. I use AI tools myself because they can be useful and efficient. However, AI cannot replace curiosity. AI cannot replace integrity. AI cannot replace resilience after rejection. AI cannot replace the humility needed to accept criticism.

Artificial intelligence can help researchers walk faster, but it cannot teach researchers how to walk honestly.

Becoming a Grounded Researcher

Figure 5 maps the parallels between ecological succession and the gradual development of a mature scientific identity. Utilizing the metaphor of a forest ecosystem, the diagram contrasts the visible "canopy" of academic achievement - such as publication metrics and accumulated papers - with the extensive, hidden root system that anchors it (Figure 5). Just as a mature forest relies on small pioneer species to establish environmental foundations, a researcher's development begins at an uncertain starting point characterized by imperfect drafts and vital handwritten corrections from a mentor (Figure 5). The framework illustrates that a strong scientific identity cannot emerge overnight; rather, it is forged through an invisible process of weathering criticism, managing failures, executing revisions, and maintaining perseverance. By connecting this developmental journey to the core attributes of researcher character - including curiosity, integrity, resilience, and humility - Figure 5 emphasizes that while a final publication represents a tangible outcome, the true, enduring achievement lies in the unseen human transformation of learning how to become a grounded researcher.

Ecology has taught me many lessons that extend beyond environmental science itself. Ecosystems do not suddenly become mature forests. Ecological succession proceeds gradually through stages of growth and adaptation. Small pioneer species establish foundations before larger communities emerge. Research development appears similar. Strong scientific identities do not emerge overnight. They are built gradually through criticism, revisions, failures, corrections, and perseverance. Much of this growth remains invisible.

Today my students may see publication numbers or academic achievements. However, this old manuscript reminds me that there was once a younger researcher carrying imperfect drafts and receiving handwritten corrections from a mentor. This reflection therefore is not about celebrating a publication. The publication itself was only an outcome. The real achievement was learning how to become a researcher.

Conclusions

The handwritten comments and signatures on an old manuscript represent much more than editorial markings. They preserve memories of mentorship, scientific growth, and intellectual development. Looking back at these documents creates gratitude

because they remind us that behind every publication there are individuals who invested effort and guidance. For new lecturers and research students, my message is simple. Do not become discouraged by weak first drafts, difficult reviewer comments, or rejected manuscripts. Strong trees require time to develop roots before they become visible above the ground. Likewise, grounded researchers are built gradually through honesty, perseverance, humility, and continuous learning. Research should not simply be a race toward publications and numbers. More importantly, it should become a journey toward becoming respectable to ourselves.

Declaration on the Use of Artificial Intelligence

The author declares that generative artificial intelligence tools were used in a supportive capacity during the preparation of this manuscript. These tools assisted with language refinement, structural organisation, and stylistic clarity of the text. All ideas, interpretations, reflections, and conclusions presented in this paper are the author's own and are grounded in personal experience and scholarly judgment. The author retains full responsibility for the content, accuracy, originality, and integrity of the manuscript.

References

1. Yap CK. Acceptance and rejection of peer-reviewed articles in environmental sciences: My personal publication experience. *Pertanika Journal of Tropical Agricultural Science*. 2009; 32(1): 25-27.
2. Yap CK. Seeds Not Trophies: Reflections on a Scholarly Life of Publications. *Publications*. 2026; 14(1): 7.
3. Day R A, Gastel B. *How to write and publish a scientific paper* (7th ed.). Cambridge University Press. 2012.
4. Yap CK, Tan SG, Ismail A, Omar H. Genetic variation of green-lipped mussel *Perna viridis* (Linnaeus) from the west coast of Peninsular Malaysia. *Zoological Studies*. 2002; 41(4): 376-387.
5. Paglis LL, Green SG, Bauer TN. Does adviser mentoring add value? A longitudinal study of mentoring and doctoral student outcomes. *Research in Higher Education*. 2006; 47(4): 451-476.
6. Feldman MD, Arean PA, Marshall SJ, Lovett M, O'Sullivan P. Does mentoring matter: Results from a survey of faculty mentees at a large health sciences university. *Medical Education Online*. 2010; 15(1): 5063.
7. Merton RK. *The sociology of science: Theoretical and empirical investigations*. University of Chicago Press. 1973.