

The Literacy-infused Inquiry Model (*Italics denote emphasis on literacy*)

Stage	Activity description	
	5E Model	Literacy Inquiry Model
Engage	<ul style="list-style-type: none"> Engaging students in experiments that trigger their prior knowledge Engaging students in problems or situations that they need to solve 	<ul style="list-style-type: none"> Engaging students in experiments, video demonstration, and/or <i>reading activity to explore a phenomenon</i> Students or teacher introduce a problem to explore and solve
Explore	<ul style="list-style-type: none"> Students exploring the earlier activity further through hands-on activities 	<ul style="list-style-type: none"> Students exploring and <i>discussing the activity/problem further</i> <i>Students presenting their initial understanding</i>
Explain	<ul style="list-style-type: none"> Students providing explanation Teacher providing the necessary vocabulary, concepts, and explanation 	<ul style="list-style-type: none"> Students <i>learning the necessary vocabulary, concepts, and epistemic practices involved in constructing explanation (using the PRO strategy)</i> <i>Students writing explanation</i>
Elaborate	<ul style="list-style-type: none"> Students applying their new knowledge to related but new situations 	<ul style="list-style-type: none"> Students applying their new knowledge to related but new situations <i>Students presenting their 'elaboration'</i>
Evaluate	<ul style="list-style-type: none"> Teachers evaluating students' conceptual understanding 	<ul style="list-style-type: none"> Teachers or students evaluating conceptual understanding

Tang, K.-S., & Putra, G.B.S, (in press). Infusing literacy into an inquiry instructional model to support students' construction of scientific explanations. In K.-S. Tang & K. Danielsson (Eds.) *Global developments in literacy research for science education*. Springer.

The Inquiry Process and Literacy Features Integrated		
5E Stage	Inquiry features	Literacy features
Engage	<ul style="list-style-type: none"> • Framing driving questions • Carrying out experiments 	<ul style="list-style-type: none"> • Reading articles • Writing prediction and initial explanation • Having class discussion
Explore	<ul style="list-style-type: none"> • Carrying out experiments • Collecting evidence 	<ul style="list-style-type: none"> • Writing observations and hypothesis • Translating inscriptions across multiple modes
Explain	<ul style="list-style-type: none"> • Explaining observed phenomena • Applying content knowledge 	<ul style="list-style-type: none"> • Teaching / learning structure of explanations (using PRO) • Writing explanations (using PRO)
Elaborate	<ul style="list-style-type: none"> • Explaining new but related phenomena 	<ul style="list-style-type: none"> • Writing explanations (using PRO) • Presenting explanations (using PRO)
Evaluate	<ul style="list-style-type: none"> • Evaluating explanations 	<ul style="list-style-type: none"> • Presenting explanations • Critiquing explanations

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