

# Forming Teachers Who Think: Metacognition in Early Career Development

## Abstract

Early Career Teachers (ECTs) enter the profession at a time of heightened complexity, cognitive load, and rapidly shifting instructional expectations. While induction programs often emphasise routines, compliance, and classroom management, research across Australia and internationally suggests that the most powerful accelerant of early career growth is the development of teachers' thinking. Metacognition—awareness and regulation of one's cognitive processes (Flavell, 1979)—enables novice teachers to interpret classroom cues, monitor their instructional decisions, and adapt their practice in response to student learning. This paper argues that metacognition is the central developmental mechanism in early career formation and situates this claim within the broader scholarly conversation, drawing on contributions from Gore, Mockler, Darling-Hammond, Adoniou, Timperley, Grossman, Ball, Dinham, Hattie, Riley, and others. A developmental model of metacognition tailored to ECTs is proposed, followed by implications for induction, mentoring, and school-level support structures.

**Keywords:** *metacognition; early career teachers; teacher induction; adaptive expertise; reflective practice; cognitive apprenticeship; professional identity*

## 1. Introduction

The early years of teaching are marked by intense cognitive, emotional, and professional demands. New teachers must simultaneously manage behaviour, design learning, interpret student responses, and make rapid instructional decisions, often with limited prior experience to guide them. Australian research highlights the steepness of this learning curve: Gore's (2014) work on Quality Teaching, Mockler's (2011) analyses of teacher identity, Dinham's (2013) research on teacher effectiveness, and Riley's (2019) wellbeing studies all point to the pressures shaping early career formation. Internationally, Darling-Hammond (2010), Grossman (2018), and Ball (in Bransford, Brown & Cocking, 2000) emphasise the complexity of learning to teach and the need for structured cognitive support.

Metacognition—awareness and regulation of one's cognitive processes (Flavell, 1979)—is therefore foundational to early career development. It enables teachers to notice their assumptions, monitor their reasoning, and adjust their strategies in real time. Research shows that metacognitive

capability supports teachers to interpret classroom complexity (Uhl-Bien & Arena, 2017), evaluate evidence (Kuhn, 2000), and develop adaptive expertise (Hatano & Inagaki, 1986). These capabilities are especially critical for ECTs, who must build professional judgement while still forming their instructional identity.

This paper argues that metacognition is the developmental engine of early career formation. It situates this claim within the broader scholarly conversation and proposes a model of metacognition tailored to the realities of novice teachers.

## **2. The Early Career Landscape: What the Research Shows**

### **2.1 Australian Perspectives**

Australian scholarship provides a rich account of the early career experience. Gore (2014) demonstrates that novice teachers benefit from explicit frameworks that make pedagogical reasoning visible. Mockler (2011) highlights the tensions ECTs face as they negotiate policy expectations, school cultures, and personal beliefs. Adoniou (2015) argues that early career development is shaped by the alignment between teacher preparation and school-based induction. Dinham (2013) and Hattie (in Dinham, 2013) emphasise the centrality of teacher thinking in influencing student outcomes. Riley (2019) documents the wellbeing pressures that shape early career trajectories.

Together, these contributions reveal a consistent theme: ECTs need support that goes beyond procedural induction and engages with the cognitive work of teaching.

### **2.2 International Perspectives**

Internationally, Darling-Hammond (2010) emphasises the importance of coherent induction systems that integrate mentoring, inquiry, and professional learning. Grossman (2018) and Ball (in Bransford et al., 2000) highlight the role of pedagogical reasoning and core practices in developing teacher expertise. Timperley (2011) positions teacher learning as a cycle of evidence, reflection, and adaptation. These scholars argue that early career development is fundamentally cognitive and relational.

### **2.3 Why Metacognition Has Been Under-Recognised**

Despite this rich scholarship, metacognition is rarely named explicitly in ECT literature. Reflection is emphasised, but the cognitive mechanisms underpinning reflective judgement are often left implicit. This paper

addresses that gap by positioning metacognition as the underlying process that enables ECTs to engage with complexity, develop adaptive expertise, and form professional identity.

### **3. Metacognition as the Developmental Engine of Early Career Teaching**

#### **3.1 Cognitive Load and Instructional Judgement**

ECTs experience high cognitive load because they lack established mental models for classroom events. Kahneman (2011) highlights the risk of defaulting to fast, intuitive thinking under pressure; Klein (2017) notes that novices often misinterpret cues or overlook critical information. Metacognition helps ECTs slow down their thinking, evaluate options, and make intentional decisions.

#### **3.2 Pedagogical Reasoning and Core Practices**

Grossman (2018) and Ball (in Bransford et al., 2000) argue that teaching requires disciplined reasoning about content, students, and pedagogy. Metacognition supports this reasoning by enabling teachers to monitor their understanding, evaluate evidence, and adjust strategies. Bransford, Brown and Cocking (2000) show that expert teachers differ from novices not in what they know, but in how they organise and apply their knowledge.

#### **3.3 Professional Identity Formation**

Mockler (2011) demonstrates that identity formation is central to early career development. Metacognition supports this process by helping teachers articulate their beliefs, evaluate their assumptions, and align their decisions with their emerging professional identity. Goleman (2013) and Schön (1983) show that reflective awareness strengthens emotional regulation and professional confidence.

### **4. A Metacognitive Development Model for Early Career Teachers**

#### **4.1 Awareness of Cognitive Processes**

Recognising one's thinking patterns, biases, and habitual responses (Flavell, 1979; Dweck, 2006).

#### **4.2 Instructional Sense-Making**

Interpreting classroom cues, student responses, and learning evidence through deliberate reasoning (Kuhn, 2000; Gore, 2014).

### **4.3 Strategic Cognitive Regulation**

Planning, monitoring, and adjusting thinking during lesson design and delivery (Timperley, 2011; Costa & Garmston, 2016).

### **4.4 Adaptive Instructional Decision-Making**

Selecting and modifying strategies based on real-time feedback and student needs (Hatano & Inagaki, 1986; Klein, 2017).

### **4.5 Reflective Consolidation**

Evaluating decisions after teaching to refine mental models and strengthen professional judgement (Schön, 1983; Timperley, Kaser & Halbert, 2014).

This model synthesises metacognitive research with the developmental trajectories described by Gore (2014), Darling-Hammond (2010), Grossman (2018), and Timperley (2011).

## **5. Implications for Induction, Mentoring, and School-Level Support**

### **5.1 Mentoring that Surfaces Thinking**

Costa and Garmston (2016) emphasise cognitive coaching as a means of surfacing reasoning, assumptions, and decision pathways. Australian mentoring research similarly highlights the importance of dialogue that engages with thinking, not just behaviour (Mockler, 2011; Dinham, 2013).

### **5.2 Inquiry-Driven Induction**

Timperley's (2011) inquiry cycle provides a structure for metacognitive development. Schools can support ECTs by embedding inquiry questions, evidence analysis, and reflective dialogue into induction programs (Timperley, Kaser & Halbert, 2014).

### **5.3 Organisational Metacognition**

Ossa-Cornejo, Figueroa-Céspedes and Rodriguez-Rojas (2016) describe institutional metacognition as the collective ability of organisations to reflect, learn, and adapt. Schools that model metacognition—through collaborative planning, data conversations, and shared problem-solving—create environments where ECTs learn how to think, not just what to do (Senge, 1990; Weick, 1995).

#### **5.4 Policy and System Considerations**

Australian induction policy emphasises mentoring, standards, and structured support (AITSL; Gore, 2014). Integrating metacognition into these frameworks strengthens their impact by focusing on the cognitive work of teaching rather than procedural compliance.

#### **6. Conclusion**

Metacognition is the developmental engine of early career teaching. It enables novice teachers to interpret complexity, regulate their thinking, and make intentional instructional decisions. By situating metacognition within the broader scholarly conversation—drawing on Australian and international research—this paper demonstrates that metacognition provides the cognitive infrastructure for adaptive expertise, reflective judgement, and instructional confidence. Schools that cultivate metacognition through mentoring, inquiry, and organisational learning support teachers not only to survive the early years, but to thrive as thoughtful, adaptive professionals.

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