## Figure A.1: *The New Art and Science of Teaching* Framework Overview

| Category | Design Areas—Teacher Actions | Desired Student Mental States and Processes | Design Questions | Elements |
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| **Feedback** | **1. Providing and Communicating Clear Learning Goals** | Students understand the progression of knowledge they are expected to master and where they are along that progression. | How will I communicate clear learning goals that help students understand the progression of knowledge I expect them to master and where they are along that progression? | **1. Providing scales and rubrics**<br>How will I design scales or rubrics?<br>**2. Tracking student progress**<br>How will I track progress?<br>**3. Celebrating success**<br>How will I celebrate success? |
| | **2. Using Assessments** | Students understand how test scores and grades relate to their status on the progression of knowledge they are expected to master. | How will I design and administer assessments that help students understand how their test scores and grades relate to their status on the progression of knowledge I expect them to master? | **4. Using informal assessments of the whole class**<br>How will I informally assess the whole class?<br>**5. Using formal assessments of individual students**<br>How will I formally assess individual students? |
| **Content** | **3. Conducting Direct Instruction Lessons** | When content is new, students understand which parts are important and how the parts fit together. | When content is new, how will I design and deliver direct instruction lessons that help students understand which parts are important and how the parts fit together? | **6. Chunking content**<br>How will I chunk the new content into short, digestible bites?<br>**7. Processing content**<br>How will I help students process the individual chunks and the content as a whole?<br>**8. Recording and representing content**<br>How will I help students record and represent their knowledge? |

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| **Content** | **4. Conducting Practicing and Deepening Lessons** | After teachers present new content, students deepen their understanding and develop fluency in skills and processes. | After presenting content, how will I design and deliver lessons that help students deepen their understanding and develop fluency in skills and processes? | **9. Using structured practice sessions**<br>How will I use structured practice?<br>**10. Examining similarities and differences**<br>How will I help students examine similarities and differences?<br>**11. Examining errors in reasoning**<br>How will I help students examine errors in reasoning? |
| | **5. Conducting Knowledge Application Lessons** | After teachers present new content, students generate and defend claims through knowledge application tasks. | After presenting content, how will I design and deliver lessons that help students generate and defend claims through knowledge application? | **12. Engaging students in cognitively complex tasks**<br>How will I engage students in cognitively complex tasks?<br>**13. Providing resources and guidance**<br>How will I provide resources and guidance?<br>**14. Generating and defending claims**<br>How will I help students generate and defend claims? |
| | **6. Using Strategies That Appear in All Types of Lessons** | Students continually integrate new knowledge with old knowledge and revise their understanding accordingly. | Throughout all types of lessons, what strategies will I use to help students continually integrate new knowledge with old knowledge and revise their understanding accordingly? | **15. Previewing strategies**<br>How will I help students preview content?<br>**16. Highlighting critical information**<br>How will I highlight critical information?<br>**17. Reviewing content**<br>How will I help students review content?<br>**18. Revising knowledge**<br>How will I help students revise knowledge?<br>**19. Reflecting on learning**<br>How will I help students reflect on their learning?<br>**20. Assigning purposeful homework**<br>How will I use purposeful homework?<br>**21. Elaborating on information**<br>How will I help students elaborate on information?<br>**22. Organizing students to interact**<br>How will I organize students to interact? |

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| **Context** | **7. Using Engagement Strategies** | Students are paying attention, energized, intrigued, and inspired. | What engagement strategies will I use to help students pay attention, be energized, be intrigued, and be inspired? | **23. Noticing and reacting when students are not engaged**<br>What will I do to notice and react when students are not engaged?<br>**24. Increasing response rates**<br>What will I do to increase students' response rates?<br>**25. Using physical movement**<br>What will I do to increase students' physical movements?<br>**26. Maintaining a lively pace**<br>What will I do to maintain a lively pace?<br>**27. Demonstrating intensity and enthusiasm**<br>What will I do to demonstrate intensity and enthusiasm?<br>**28. Presenting unusual information**<br>What will I do to present unusual information? |
| | **7. Using Engagement Strategies** | Students are paying attention, energized, intrigued, and inspired. | What engagement strategies will I use to help students pay attention, be energized, be intrigued, and be inspired? | **29. Using friendly controversy**<br>What will I do to engage students in friendly controversy?<br>**30. Using academic games**<br>What will I do to engage students in academic games?<br>**31. Providing opportunities for students to talk about themselves**<br>What will I do to provide opportunities for students to talk about themselves?<br>**32. Motivating and inspiring students**<br>What will I do to motivate and inspire students? |
| | **8. Implementing Rules and Procedures** | Students understand and follow rules and procedures. | What strategies will I use to help students understand and follow rules and procedures? | **33. Establishing rules and procedures**<br>What will I do to establish rules and procedures?<br>**34. Organizing the physical layout of the classroom**<br>What will I do to make the physical layout of the classroom most conducive to learning?<br>**35. Demonstrating withitness**<br>What will I do to demonstrate withitness?<br>**36. Acknowledging adherence to rules and procedures**<br>What will I do to acknowledge adherence to rules and procedures?<br>**37. Acknowledging lack of adherence to rules and procedures**<br>What will I do to acknowledge lack of adherence to rules and procedures? |

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| **Context** | **9. Building Relationships** | Students feel welcome, accepted, and valued. | What strategies will I use to help students feel welcome, accepted, and valued? | **38. Using verbal and nonverbal behaviors that indicate affection for students**<br>How will I use verbal and nonverbal behaviors that indicate affection for students?<br>**39. Understanding students' backgrounds and interests**<br>How will I demonstrate that I understand students' backgrounds and interests?<br>**40. Displaying objectivity and control**<br>How will I demonstrate objectivity and control? |
| | **10. Communicating High Expectations** | Typically reluctant students feel valued and do not hesitate to interact with the teacher or their peers. | What strategies will I use to help typically reluctant students feel valued and comfortable interacting with their peers or me? | **41. Demonstrating value and respect for reluctant learners**<br>How will I demonstrate value and respect for reluctant learners?<br>**42. Asking in-depth questions of reluctant learners**<br>How will I ask in-depth questions of reluctant learners?<br>**43. Probing incorrect answers with reluctant learners**<br>How will I probe incorrect answers with reluctant learners? |