

Observer-Reporter-Interpreter-Manager-Educator (ORIME) Framework to Guide Formative Assessment of Medical Students

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Abstract

The Observer-Reporter-Interpreter-Manager-Educator (ORIME) is adapted from RIME, an intuitive, self-explanatory and “synthetic” framework that assesses formatively, a student’s ability to synthesise knowledge, skills and attitude during a clinical encounter with a patient. The “O” refers to a student’s ability to pay attention and perceive with open-mindedness, people and events around him or her. The framework is suitable for definition of interim outcomes in a 5-year undergraduate programme. To align students’ and clinical teachers’ expectations further, selection of case complexity that is commensurate with student’s seniority and competence should be guided and an adapted version of the Minnesota Complexity Assessment Tool is proposed.

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The Lee Kong Chian School of Medicine (LKCMedicine) has begun classes on 5 August 2013.¹ With Imperial College of London as one of the parent universities, it was logical to adopt the United Kingdom General Medical Council Tomorrow’s Doctors² as a basis for LKCMedicine new graduate outcomes. Because Tomorrow’s Doctors enunciates outcomes in terms of a graduate (i.e. end product of medical school), definition of interim outcomes is necessary for a 5-year medical school programme to guide assessment of student progress.

Reporter-Interpreter-Manager-Educator Framework

In the search for interim outcomes framework, we were attracted by the Reporter-Interpreter-Manager-Educator (RIME)^{3,4} framework (Table 1) that has been used by the National Healthcare Group (NHG) Residency for formative assessment of residents since 2010. With NHG

as LKCMedicine’s principal clinical partner, adoption and expansion of RIME framework for undergraduate interim outcomes followed naturally. The use of RIME framework in medical schools is not new because in an US survey, 37 out of 109 Internal Medicine clerkship directors use this framework as an assessment method for medical students.⁵ Unlike the “analytical” framework of knowledge-skills-attitude that encourages silo evaluation of knowledge, skills and attitude independent of one another, RIME is a “synthetic” framework³ that enables clinical teachers to assess a student’s ability to synthesise knowledge, skills and attitude seamlessly during a clinical encounter with a patient.

Within NHG, the vocabulary of RIME has been accepted and used by clinicians in their teaching and assessment of residents; thus the adoption of this framework and vocabulary for medical students should meet with less resistance. The descriptors vis-à-vis Reporter, Interpreter, Manager and Educator are intuitive and self-explanatory, and lend themselves to easy comprehension and use by

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Table 1. Observer-Reporter-Interpreter-Manager-Educator (ORIME) Framework

Observer-emulator	The student who is an Observer-emulator sees, listens, notices, pays attention and perceives with open-mindedness the people, their interaction, activities and the environment around him/her. This is in response to the realisation that “Something interesting is happening here”. The Observer-emulator also emulates teachers, seniors and even peers in behaviour, at times replicating the behaviour without understanding the underlying reasons.
Reporter	<p>Progress from an Observer-emulator to a Reporter requires the student to move from open-minded observation and emulation to gather specific data (obtain history, perform physical examination), and communicate these data with patients and with other healthcare professionals reliably.</p> <p>The Reporter is able to complete the Subjective-Objective portions of the SOAP (Subjective-Objective-Assessment-Plan) guide and answers the “What” questions e.g. what are the patient’s main complaints, what are the physical examination findings, what medications are the patient on etc.</p>
Interpreter	<p>Progress from a Reporter to an Interpreter requires the student to develop two interdependent skills: (i) Identifying and prioritising a patient’s problems independently, including new problems and (ii) Clinical reasoning and developing differential diagnoses independently, contextualised to the patient.</p> <p>The Interpreter is able to complete the Assessment portion of the SOAP guide and answers the “Why” questions e.g. why is the patient having chest pain, why is the liver enlarged, why is the patient on warfarin etc.</p>
Manager	<p>Progress from an Interpreter to a Manager requires the student to develop the ability to</p> <p>For every patient:</p> <ul style="list-style-type: none"> • Plan diagnostic investigations and therapeutic measures, • Complete tasks under supervision, if applicable, • Take responsibility as patient’s primary provider, and • Pace each patient encounter appropriately; and <p>For a group of patients: prioritise patients and tasks.</p> <p>The Manager writes the Plan (for investigations and management) of the SOAP guide independently, consistently, and proposes a plan that conforms to good practice in Singapore’s context. The Manager answers the “How” and/or “What’s next” questions.</p>
Educator	<p>While the concepts of an Educator’s ability are introduced in medical school, the maturation of these skill sets occurs in residency and beyond. The Educator identifies knowledge gap and is able to</p> <ul style="list-style-type: none"> • Educate patients and carers on day-to-day decisions, discharge planning, placement issues, coordination of care with community partners etc., • Teach juniors and peers; • Self-direct his/her own learning in order to improve performance; • Appraise evidence; and • Formulate research/improvement questions to ask in order to improve the healthcare system.

busy clinical teachers. Unlike the “Entrustable Professional Activities” framework⁶ that requires substantial investment of time and effort by clinical teachers/specialists to identify, discuss, reformulate and finally generate a list of activities considered essential to the specialty, followed by the need for subsequent validation, the simplicity and portability of RIME are appealing.

To adapt the RIME framework for use in the context of local undergraduate students, 2 expansions were necessary:

1. “Observer-emulator” (“O”) was made explicit and inserted as the starting category to become ORIME, and
2. case complexity was made more objective with the Minnesota Complexity scale.⁷

Observer-Emulator

The ability to observe is implicit in the RIME framework.⁴ The observer-emulator pays attention and perceives with open-mindedness the people, their interaction, activities and the environment around him or her. The observer-emulator also emulates teachers, seniors and even peers in behaviour, at times replicating the behaviour without understanding the underlying reasons. The decision to explicate the “observer-emulator” component arose because local students are young undergraduates unlike mature graduate medical students in United States (US), and clinical teachers need to be reminded that students are constantly observing and emulating their teachers.^{8,9} Junior students e.g. Year 1 and early Year 2 may not have learnt how to take a history or perform physical examination or report such findings, and hence cannot be assessed as Reporter. Instead, junior students often learn by observing and emulating their teachers in key clinical skills e.g. how to greet a patient, be active listeners etc. Hence making explicit the need to be keen observers-emulators is important for assessment of Year 1 and 2 students. It also communicates the expectation for medical students to cultivate the ability to observe-emulate as a foundational tenet for life-long learning. Underpinning the ORIME framework are the life-long skills of reflection and critical thinking-evaluation that must be developed.

Case Complexity

The unit of assessment for student progress can be the case, the rotation or the year.³ The rotation and the year are planned elements in the curriculum but selection of case complexity that is commensurate with student’s seniority and competence is left to the discretion of clinical teachers. In Singapore’s current healthcare system, students will work with patients with varying complexities with the high complexity cases disproportionately prevalent in the acute

hospital setting. The complexity of each case will impact whether a student can perform as a Reporter, Interpreter or Manager. The determination of case complexity is often less clear-cut than what it appears, and is subject to various factors such as the clinical teacher’s personal expectations, seniority, clinical experience, and medical training. Therefore making explicit what is a low, mid and high complexity case allows a common understanding among clinical teachers, students and the curriculum team.

Among several tools to assess complexity, the Minnesota Complexity Assessment Tool⁷ is most intuitive with face validity that provides accessible definition of complexity beyond clinical domain (Table 2). Domain E “Resources for Care” with an emphasis on language is pertinent in multi-lingual Singapore. Clinical teachers are not required to complete a formal complexity assessment before assigning a patient to the students but with a quick glance/recall of the high complexity items, set appropriate expectations for Year 3 versus Year 4 and 5 students.

Table 2. Summary of Minnesota Complexity Assessment Method

Domain	Current State of Affairs
A. Symptom severity and diagnostic challenge	(1) Current symptom severity, range from 0 = No symptom or reversible without intense efforts 1 = Mild noticeable symptoms that do not interfere with function 2 = Moderate to severe symptoms that interfere with function 3 = Severe symptoms impairing all daily functions (2) Diagnostic challenge, range from 0 = Diagnosis/es clear 1 = Narrow range of alternative diagnoses 2 = Multiple possibilities – clear diagnosis expected later 3 = Multiple possibilities – no clear diagnosis expected
B. Distress and readiness to engage	(3) Distress, distraction, preoccupation with symptoms, range from 0 = None 1 = Mild e.g. tense, distractible, preoccupied 2 = Moderate e.g. anxiety, moody, confused 3 = Severe with behavioral disturbances, e.g. harm (4) Readiness for treatment and change, range from 0 = Ready and interested in treatment; active cooperation 1 = Unsure/ambivalent but willing to cooperate 2 = Major disconnect with proposed treatment; passive 3 = Major disconnect; defiant / will not negotiate
C. Social safety, support, and participation	(5) Current home / residential safety and stability, range from 0 = Safe, supportive, stable 1 = Safe, stable but with dysfunction 2 = Safety/stability questionable – needs evaluation/assistance 3 = Unsafe, unstable – immediate change required (6) Participation in social network, range from 0 = Good participation with family, work, friends 1 = Restricted participation in 1 of above domains 2 = Restricted participation in 2 of above domains 3 = Restricted participation in 3 of above domains
D. Health system intensity and relationships	(7) Current organization of care, range from 0 = All appear intact and cooperative 1 = More than or less than 1 active provider(s) 2 = Multiple medical services/providers 3 = Multiple medical services/providers plus major involvement with other care or social service systems (8) Patient-clinician (or team) relationships, range from 0 = All appear intact and cooperative 1 = Most are intact; at least 1 is distrustful or remote 2 = Several are distrustful or remote; at least 1 intact 3 = Distrust evident in all patient-clinician relationships
E. Resources for care	(9) Shared language with providers, range from 0 = Shared fluency in language with provider 1 = Some shared language/culture with provider 2 = No shared language; professional translator available 3 = No shared language; family or no translator (10)# Adequacy / consistency of ability to pay for care, range from 0 = Adequate, can pay for consultation and meds 1 = Needs immediate family members to pay for consultation and meds 2 = Needs public assistance/similar scheme to pay for consultation and meds 3 = 2 plus public assistance/similar scheme for daily subsistence

Domain E10 has been adapted to Singapore context

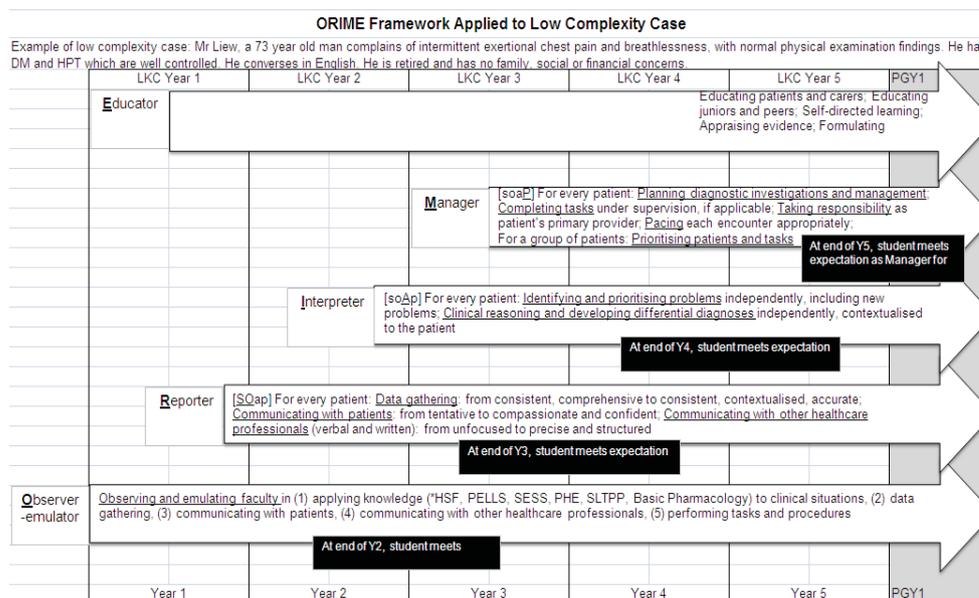


Fig. 1. Observer-Reporter-Interpreter-Manager-Educator (ORIME) framework applied to a low complexity case.

*HSF: Human Structure and Function; PELLs: Professionalism-Ethics-Law-Leadership-Safety; SESS: Scientific Enquiry and Special Studies; PHE: Public Health and Epidemiology; SLTPP: Sociology and Long Term Patient Project

Putting It Altogether

The ORIME framework is in its final stages of approval before implementation in LKC Medicine. What are the implications for clinical teachers and students? Figure 1 provides an illustration for a low complexity case of Mr Liew, who is 73-years-old and complains of intermittent chest pain and breathlessness. He has diabetes mellitus and hypertension that are well controlled. He is retired and has no family, social and financial concerns. A Year 2 is able to greet Mr Liew, start a conversation and listen actively. A Year 3 gives a reliable report on Mr Liew's history and physical examination findings. A Year 4 is able to interpret these findings and results from laboratory and radiological investigations to formulate differential diagnoses. A Year 5 manages Mr Liew according to local practice and prioritises Mr Liew appropriately among several patients. For a Year 3 doing well as Reporter for low complexity cases, he/she can be stretched to become Interpreter-Manager for low complexity cases or be challenged with mid-high complexity cases.

The flip side is also true e.g. for high complexity cases, Year 3 students may struggle to become a Reporter, while some Year 4 and majority of Year 5 students will become reliable Reporters. When guided by committed and skilful clinical teachers some Year 5 students will become reliable Interpreters even for high complexity cases.

Conclusion

The ORIME framework is proposed to assess a student's ability to synthesise knowledge, skills and attitude during a clinical encounter with a patient. It is intuitive and self-explanatory, and it is hoped that "simplicity leads to acceptance; acceptance leads to use; use leads to consistency, and consistency is an important element of fairness".⁴ To provide a common vocabulary and align expectations, the Minnesota Complexity scale is proposed as a guide to ensure case complexity is commensurate with student's seniority and competence.

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