Role-Play Simulation in Nurse Education: Evaluating the Teaching of the Mnemonic "I AM A STAR"

Abstract

The purpose of this article is to evaluate the use of role-play simulation to teach pre-registration mental health nurses the components of the Mental State Examination. The mental state examination (MSE) is a synthesis of all observations made during the nursing interview and can be considered the psychological equivalent of a physical examination. When establishing an initial formulation of any mental or emotional state that patients experience, it is vital to collate, from a nursing interview, a holistic assessment of the patient's story. A mnemonic 'I AM A STAR' was developed as a nursing student aid memoire to recall the parts of the MSE (Carinaux Moran, Mansel & Bradley-Adams, 2017; Sims,). Small group work as part of an acute care module encouraged students to role-play service users and nursing assessors. Results support the use of role-play simulation in learning. Role-play simulation can enhance the student experience, learning and most importantly their confidence.

Introduction

This article is concerned with the use of role-play simulation to teach the application of the MSE in an acute care module. The mental state examination (MSE) is a structured way of collecting observations and descriptions made during the nursing interview, in the here and now. The mnemonic 'I AM A STAR' was developed as a nursing students aid memoir of the components of the MSE (Mansel & Bradley-Adams, 2017). Low fidelity simulation such as role-play allows the student to gather information about a peer's mental state using the mnemonic 'I AM A STAR' by being able to identify non-verbal cues such as facial expressions and physical movements (Doleen, Giddings, Johnson, Guizado de Nathan & O'Badia, 2014). Verbal and non-verbal behaviours provide an extensive amount of information in understanding the patient. Therefore, recognising and interpreting these cues is a vital skill for nursing students to develop during their nurse education.

Discussions will consider an evaluation of a small group work session where the degree of student participation within the simulation moved from observers in year one (Mansel & Bradley-Adams, 2017), to role-players in year two, in line with the spiral curriculum. An example of a student's application of lessons learned supports the evaluation and use of role-play simulation.

Background

According to Fitzgerald and Fitzgerald (2016, p5) the MSE can be attributed to Karl Jaspers a German – Swiss Psychiatrist, in 1912, and described as a 'systematic and person-centred evidence to understanding human behaviour'. The MSE is only one part of a nursing assessment with further information gathered from biopsychosocial information and other sources such as carers and family. Components such as observation and behaviour; emotional state and affect; cognition; beliefs; functioning; impact; insights can be considered (Moone & Trenoweth, 2018, p.331). Upon review of the recent literature, Kowalski and Conn(2017) describe teaching the MSE by video clips to medical students. They concluded that although the students enjoyed the video clip session they would prefer to assess real or simulated patients. A chapter entitled Mental Health Assessment (Moone & Trenoweth, 2018) includes a brief mention of the MSE and components. Chapters dedicated to each component in depth are discussed in (Webster Pollard, 2018). However, components of the MSE do vary in order and subdivisions with each publication (Carniaux-Moran, 2008; Moone & Trenoweth,

2018; Webster Pollard, 2018). Therefore, a rational in developing an easy to recall aid memoir for nursing students (Table 1).

I	Introduce yourself	Hello my name is
A	Appearance and behaviour	
М	Movement and gait	
A	Affect and mood	
S	Speech	
Т	Thought pattern	
A	Attention and concentration	
R	Respond and record	

Table 1. I AM A STAR Mnemonic (Mansel & Bradley-Adams, 2017).

Ethical considerations, such as the need to minimise unnecessary risk to service users and clinicians, dictate that simulation is a safe and effective way of enabling students to undertake clinical skills without placing their patients at risk (Li, 2016). Simulation is described as an activity that supersedes real experiences and can replicate important aspects of a clinical situation. The mnemonic I AM A STAR (Mansel & Bradley-Adams, 2017) was developed to assist mental health nursing students to undertake and understand the components of the MSE within a nursing assessment and to enable them to add this skill to their repertoire of nursing interventions. Assessing needs and planning care is one of the seven platforms of the Nursing & Midwifery Council (NMC, 2018a) standards of proficiency for registered nurses.

Part 1 of the Nursing and Midwifery Council (NMC) Standards Framework for Nursing and Midwifery Education recognises the importance of simulation in nurse education (NMC, 2018b). This is further supported by plans to 'lift the cap' on simulation hours within the proposed standards (Merrifield, 2018). The focus of any simulation must provide the students with an opportunity to improve knowledge, skills and behaviours by modes of reflection, feedback and evaluation (NMC, 2018b). Moule (2011) describes simulation as an opportunity to provide 'real life' experiences in a safe environment. Role-play simulation is a teaching methodology that supports students to become actively involved in the MSE phenomena. Research by Wheeler and McNelis (2014) support the use of role-play simulation in nurse education, identifying the positive impact of student enjoyment, engagement and teaching approach with an emphasis on the safe learning environment.

Assessment

Assessment in mental health nursing involves the service-user and the nurse sharing pertinent information with the intention of identifying symptoms of mental distress, it is not always necessary to diagnose the underlying condition or illness. Assessment is the first stage of the nursing process (Orlando, 1961) and precedes the development and implementation of a plan of care. Trzepacz and Baker (1993) assert that without this objective assessment, it is not possible for the clinician to correctly identify mental or emotional distress.

The National Institute for Health & Care Excellence (NICE, 2011) postulate that a mental health assessment should commence with the nurse ensuring that the service user is comfortable and provided with an opportunity to engage as a partner. This includes the nurse explaining the service and its facilities; the purpose of the assessment; any possible outcomes; and the need to share information, within the confidentiality parameters of healthcare. The initial contact should begin with the nurse introducing themselves to the client which promotes the development of a therapeutic relationship; this can be as simple as #hellomynameis.org (Granger, 2017). The NHS Future Forum (2012) emphasises that health professionals should 'make every contact count', whereby every interaction with a service-user should be an opportunity to promote their well-being, develop the relationship and promote social skills (Browne, Cashin & Graham, 2012) improving their chances of recovery (Edwards, 2011).

Assessing acute mental health

Acute mental illness manifests in a multitude of ways however, is generally characterized by distressing symptoms that require immediate attention from a mental health professional. Acute symptoms of mental illness tend to have a rapid onset and the individual could be considered at risk to themselves or to others. The symptoms could incorporate feelings of low mood, resulting in the individual lacking motivation and having suicidal thoughts, or thoughts of self-harm. Alternatively, it could involve the individual feeling paranoid and experiencing hallucinations or delusions or experiencing extremes of mood, whereby the individual feels extremely low in mood or extremely elated in mood (Simpson, Allison & Lambley, 2017). An acute episode could be a first experience or a relapse of an ongoing illness. Either way, it is likely to be very distressing for the individual.

Teaching pre-registration mental health nurses how to care for the acutely unwell service user is vital. Within the mental health pre-registration nursing curriculum at Swansea University, an acute care in mental health module is delivered midway through the second year of the three-year programme. The facilitation of the acute care in mental health module is reinforced initially via lectures in respect of acute mental illnesses, including, schizophrenia, psychosis, severe depression, bipolar affective disorder, self-harming behaviours and suicidal ideation. With a fundamental knowledge of each of these illnesses, that will have developed throughout the first year of the pre-registration mental health nursing programme, students are taught in this acute care in mental health module, how to strengthen their insight into the process and practices of assessing and recognising symptomology, whilst prioritising nursing care for acutely ill service users in a variety of clinical settings.

Revisiting topics throughout the pre-registration nursing programme improves students' confidence (Candela, 2015) and is fundamental to the students' learning, enhancing their development as a nurse. Referred to as a spiral curriculum, topics taught are not repeated, but each time the topic is revisited, it builds on the previously taught session, with a gradual increase in the difficulty of the content, consequently strengthening the students' knowledge and skills (Harden & Stamper, 1999).

In accordance with educational theories, the spiral curriculum considers student learning in a logical manner and reflects educational taxonomies, subsequently classifying learning objectives into various levels of complexity (Bloom, 1994).

During the acute care in mental health module, students identify the need to work collaboratively within nursing practice and explore the use of a range of communication and interpersonal skills in caring for acutely ill service users to accomplish positive outcomes (Clifton & Noble, 2018). As such, students develop the ability to use systematic approaches to assessing and planning care for the service user. They are then able to apply clinical findings to reduce clinical risk and make informed clinical decisions with the expectation of an approach that is recovery-focused (Moone & Trenoweth, 2018).

Primarily, students need to be congruent with developing a therapeutic relationship and gaining the trust of the individual, to build the foundations for assessing and delivering therapeutic interventions (Forsyth & Janner, 2017). With the development of therapeutic relationships underpinning the fundamentals of caring for the mentally unwell, the acute care module helps develop the student's awareness of acute situations, it supports them in identifying and reducing associated risks, as well as prioritising acute mental health nursing care. Therefore, the module further develops the student's assessment, intervention and management skills underpinned by professional responsibility (NMC, 2015).

A significant requirement of the NMC (2018) is for nurses to attain critical thinking skills. Active learning strategies within the acute care in mental health module encourage critical thinking which demonstrates learning at a higher taxonomy level (Bissell & Lemons, 2006). The module is predominantly student-centred, whereby the teacher encourage student participation, rather than the students' taking the role of passive listeners. This active role in learning encourages students to become more engaged in their learning and thus enhances their retention of knowledge (Candela, 2015).

Teaching Practice – simulation

The NMC (2018) describe simulation as experiential learning in the real-world. Succinctly, Kolb's experiential learning theory describes knowledge as being generated through experience (Kolb 1984). The foundation of simulation activity is designed to create personal learning experiences and support the students own process of inquiry and understanding (Kolb 1984). This concept is interwoven into many nursing strategies due to the nature of the profession (Adamson, 2012). Modern methods of teaching are encouraged to enhance student satisfaction and student engagement. Simulation approaches that support students to connect theory to specific patient situations are fundamental in developing nursing skills in a safe and supportive environment (Benner, 2010; NMC, 2010). The Department of Health (2011) advocate simulation as an effective strategy which can develop and maintain knowledge, skills and attitudes of nursing students resulting in safe and effective patient care. Simulation is therefore a valued educational teaching method in healthcare. Crucially, it can offer the students freedom to experience situations without the barriers of real-life patients. The majority of students may be reluctant to engage in these new experiences, with the predominant reason being due to a lack of confidence, fear of doing wrong and potentially resulting in harming the patient. Clinical high-fidelity simulations can feel very

authentic for the student, however emotions of anxiety can be lowered as the patient is safe in a non-threatening environment (Birkhoff & Donner, 2010; Medley & Horne, 2005). It is important to consider simulated practice with novice student nurses, whilst ensuring that the level of fidelity is appropriate to the type of activity and training stage. Ideally, low fidelity simulation is generally focussed on uncomplicated situations and likely, most appropriate for novice student nurses. It is described as the degree of realism or authenticity of a situation (Billings & Halstead, 2009; Wilson et al., 2004) and could include case studies, scenarios and role-play.

The challenge for healthcare education is the increasing cohort numbers, limited simulated learning spaces, scarcity and overcrowding of clinical areas (Cant & Cooper, 2010; Gaberson & Oermann, 2014). The total number of students in healthcare education programmes across Wales 2017-18 is **8,573** compared to **7,384** in 2016-17 (Welsh Government, 2017). Therefore, as educators we need to develop innovative and creative approaches, using simulation, that leads to positive educational outcomes and impact. According to Sharpnak and Madigan (2012) educators are avoiding simulation in a classroom environment due to considerable amount of content and time required and possibly the lack of simulation technology available. However, keeping simulation training short and engaging all students is advantageous, especially in a classroom setting.

Method

Role-play can achieve considerable benefit regardless of its relatively low fidelity or possible realism (Aldrich, 2005) as evidenced in this evaluation. There are three types of participants within role-play; the players, the observers and the facilitators. The aim of the role-play simulation was to advance the mental health nursing students' confidence in using the MSE and 'I AM A STAR'. The objective was that the students were able to identify and demonstrate various components of the 'I AM A STAR'.

To establish an initial formulation of any mental health problem that patient's experience, it is vital to collate from a nursing interview an assessment of the patient's story. Hughes (2016) suggests that one of the benefits of simulation is that it helps student nurses develop their skills of intuition, a useful skill in assessment, whereby an understanding of the whole person is vital. Verbal and non-verbal behaviours provide an extensive amount of information in understanding your patient (Shea, 2017). The MSE is a synthesis of all observations and interactions made during an interview for assessment in the here and now, where the objective goal is to record observations (see table 1). The mnemonic I AM A STAR was developed to assist mental health nursing students to undertake and understand the components of the MSE (Mansel & Bradley-Adams, 2017).

Three small group sessions were organised (n=19; n=12; n=14) during the acute care module as discussed previously. These small groups consisted of the students who had attended the previous MSE workshop (Mansel & Bradley-Adams, 2017). Each group had three students who had volunteered to role-play a service user's overt signs and symptoms of psychosis, bipolar affective disorder and paranoid schizophrenia. The remaining students individually took part in sitting with the service user and took turns to conduct part of a nurse's interview for assessment. The students observing considered the components of the I AM A STAR framework. Sufficient time was provided for discussion, reflection and feedback after each role-play (NMC, 2018a).

This active 'hands-on' participation and engagement within the simulation follows Kolb's experiential learning cycle (1984) and learning through role play (Russell & Shepherd, 2010). The students' experience a new situation, they are provided time to reflect on the experience, learning occurs, then the learning is applied in a clinical environment. Furthermore, the students who

assimilated the character or personality of the service user, learn through exploration of ideas and can see direct relevance of the application of theory to practice.

Results

The teaching session was evaluated with 39 students returning their feedback forms. See table 2. The learning impact of the role-play simulation was evaluated by Kirkpatrick and Kirkpatrick's (2006) four levels of training evaluation: reaction, learning, behaviour, and results for a holistic view of the student experience. It was interesting to note some resistance initially from the students due to 'role-play'. However, the evaluation suggests most students enjoyed the session 'a lot' with comments to support overcoming initial anxieties.

Table 2. Summary of evaluation responses and comments

Level	Responses Actual Student numbers				Comments
	'A lot' 'Some' 'A little' 'None'			e'	
1. Reaction: did you enjoy the session?	32	4	2	1	I do not feel comfortable with role- play in front of a lot of people Scary but ok Very enjoyable, helped confidence as usually shy. Managed to get up and assess with no problem Role-play and guidance from staff really good. Small group gave me the opportunity to explore questions I had and assess
2. Learning: did you learn what you needed to and have new ideas?	32	5	2	0	Not being afraid to ask open questions Think I would have learnt more if it had been clinicians taking part in role-play Hearing different ideas & questions by others gave me other perspectives & made me think of things I had not thought of before

3. Behaviour: will you use the information and ideas?	33	6	0	0	Definitely – the more we practice the more confident we feel in practice I AM A STAR is easy to remember & utilise.
4. Results: do you think that the ideas and information will improve your effectiveness as a nursing student?	33	5	1	0	I will use the I AM A STAR This is a useful session as I've no experience of assessments as a student Already use it in placement

Additional comments

- Having 'actors' to practice on who demonstrate real life behaviours and symptoms maybe clinicians or lecturers who can draw on their experience to be realistic.
- Acting in the role-play I had to read around the topic (psychosis) which helped me to understand the symptoms better. Taught me more about the illness which helped me to portray it.

Having discussed the design and implementation of both the workshop (Mansel & Bradley-Adams, 2017) and small group work above, it is important to monitor the assessment of the learning outcomes. The following demonstrates learning as a result of the teaching and an extract from a student's summative written assessment for the acute care in mental health module, whereby the 'I AM A STAR' mnemonic is applied to a fictitious service user who presents with possible paranoid schizophrenia.

Ι	Introduce yourself	When first commencing the MSE, it is vital that the focus is initially on the building of the therapeutic relationship. The most effective way to initiate this is for the nurse to introduce themselves to the service user (van Vliet & Epstein, 2014, Guest, 2016). 1000 lives (2014) introduced the campaign to begin every conversation with "hello my name is". A good first contact with the service user can be beneficial to the development of the therapeutic relationship (Ha & Longnecker, 2010). That begins with the nurse introducing themselves by name to begin the conversation (Granger, 2016).
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A	Appearance and behaviour	If a service user's clothes appear dirty or unkempt or underweight, it could indicate risk of self-neglect; identified as a negative symptom of schizophrenia (Jakhar, Bhatia, Saha & Deshpande, 2015). Nutritional status could also be assessed using the Malnutrition Universal Screening Tool (MUST; BAPEN, 2011) to identify possible risk of malnutrition. Another negative symptom of schizophrenia is diminished facial expressions in relation to affective flattening (Lincoln, Dollfus & Lyne, 2017). During the assessment, it is important to observe all facial expressions to see whether they correlate, or whether there is minimal change in expression, with potential for depressive symptoms. Furthermore, if facial expressions change to anger or even appears distracted out of context to current discussion, it may be due to the service user experiencing audio or visual hallucinations (Waters, Collerton & Ffytche, 2014). Tso, Mui, Taylor and Deldin (2012) suggest that reduced eye contact from a service user with presenting psychosis could indicate delusional or paranoid beliefs; a common belief being "They are watching me". These beliefs affect their social cognition, a negative symptom of schizophrenia (Tso et al., 2012). This can be assessed through observation in the primary assessment. It may also be observed during any interaction with nursing staff or others. Furthermore, it would be possible to assess whether the service user is recipient to unseen stimuli by their gaze direction. It would not ascertain whether they are aware of unseen stimuli, but it has the potential to suggest and further explore with the service user.
М	Movement and gait	The nursing interview will be vital to observe for any agitation or depressive behaviour such as foot tapping or twitching (Sorensen et al., 2015). During the assessment period, it is important to observe for parkinsonism, a side effect of atypical antipsychotics medication (Bhandari & Aggarwal, 2014). The service user may present with a shuffling gait, similar to Parkinson's disease.
A	Affect and mood	The MSE allows observation of a blunted affect, or decrease in emotions, which are common negative symptom of Schizophrenia (Rowland et al., 2013). During an assessment, the service user's emotion will be observed by their facial expressions, and self-reports, allowing assessment for subjective and objective congruence (Mansel & Bradley-Adams, 2017). It will be important to note whether the service user appears guarded or suspicious in manner, indicating paranoid delusions (Buck, Hester, Penn & Gray, 2017).
S	Speech	Speech disorder is a negative symptom of schizophrenia (Tan, Thomas & Rossell, 2014). A poverty of speech will be evident by limited response to questions (Hommer & Swedo, 2015; Tan et al., 2014).

Т	Thought pattern	Disorder of thought patterns includes the presence of hallucinations and delusional beliefs. Delusions are defined as false beliefs and hallucinations are sensory responses occurring without real stimuli (WHO, 1993). Delusions may become evident through content of speech and hallucinations suspected based upon the service user's response to perceived stimuli. Service users may disclose the presence of command hallucinations (WHO, 2017) where the person affected believes that they are commanded to perform a task. Command hallucinations are linked with an increased risk of violence (Lamsma & Harte, 2015). This would be essential to explore as there is an actual risk of violence. Further to this, Schizophrenia is associated with an increased risk of suicide (Bornheimer & Nguyen, 2016) and therefore the service user's thought patterns in relation to suicidal ideation would also be assessed
A	Attention and concentration	Cognitive impairment is symptomatic of schizophrenia (Bora, Yucel & Pantelis, 2010). Chang, Hui, Chan, Lee and Chen (2016) suggest that assessment of cognition will aid the understanding of the service users functioning. During an assessment, it would be important to establish whether the service user has any insight in to their condition. Yanos, Roe and Lysaker (2010) found that those who have more insight and understanding in to their mental illness, and who accept that they are ill will recover quicker with less chance of relapse. It is paramount to assess impulsive behaviours due to their associated risk of violence, suicide and self-harm (Hoptman, 2015).

R	Respond and record	Further to the assessment and collecting information from the GP, recording baseline physical observations will be necessary, as well as blood testing and a urine sample to rule out any physical causes relating to presentation. The Nursing and Midwifery Council (NMC) Code of Conduct (2015) clearly outline the importance of accurately recording all information on interaction, care and activities with the patients. It not only protects the patient but also all staff involved if properly documented. Whilst the local health board may set their policy in the way in which record keeping is to be completed, the principles are guided by the NMC (NMC, 2015). The Royal College of Nursing (2015) advocate the importance of accurate record keeping in order to improve continuity of care for the service user and to improve communication. When the service user's assessment is documented, it should reflect the service user's own beliefs about how they present and what they may identify to be their needs, and any discussion around this (Beach & Oates, 2014). In collaboration with the service user a care and treatment plan will be developed in accordance with the nursing process (Orlando, 1961). Whilst the service user is on the ward, it is important that their information is only shared with those the service user presents with serious risk that would warrant seeking help from others. The SBAR framework (situation, background, assessment and recommendation) was developed to improve accuracy of nursing handover (Yu & Kang, 2017). This ensures that all involved in the care of the service user have the same information and provide continuity of care.

Students reflective commentary

"This form of teaching allows me as a student to blend what I've learnt in lectures and what I've observed in placement. It is a vital learning environment where I can explore and experiment with what I have learnt in a safe environment with my peers and thus, give me an opportunity to follow my instincts. Prior to attending clinical practice environment, I had already learnt about the theory of the MSE, thus allowing me to relate the theory to my learning environment. On return to university lectures, becoming involved in role play allowed me to practice my newly found skills in a safe environment, without pressure to explore or replicate what I have learnt in class or observed in practice. It gave me time to receive feedback, reflect on the MSE and what I'm observing. Subsequently, it allowed me to be more critical of what I am learning and relate it to real life experience, as well as building on my summative assessments and nursing skills.

Typically, as students, we dread role-play, however this is likely to be down to our fear, fear of getting things wrong. But given the opportunity, we are more likely to put our new knowledge in to practice in an environment where we feel safe and there is little perceived threat. We can laugh at our mistakes, experiment with what we have learnt and gain huge amounts of confidence. This will then be reflected in our future as qualified nurses, improving the care we deliver to our patients. "

"This form of teaching allows the students to blend what they have learnt in lectures and what they have observed in placement. It is a vital learning environment where students can explore and experiment what they have learnt in a safe environment with their peers and thus, learn to follow their instincts. Students learn about the theory of the MSE in class, they then visit a practice learning environment and begin to relate and build on that knowledge. On return to class, becoming involved in role play allows them to practise those newly found skills in a safe environment, without pressure to explore or replicate what they have learnt in class or observed in practice. It provides the student time to receive feedback, reflect on the MSE and what they are observing. Subsequently, allowing students to be more critical of what they are learning, and relate it to real life experience, meeting learning objectives and building on educational taxonomies.

Typically, students despise role play and having to participate, yet this could be an element of their fear, the fear of getting things wrong. However, having the opportunity to practise in the classroom surrounded by supportive peers, in a safe environment, where there is little perceived threat, students are likely to gain much confidence, and this will ultimately reflect in the care they deliver to their patients".

Conclusion

As previously identified in Mansel & Bradley-Adams (2017), simulations in education are rarely followed up and are used in isolation, where essentially students are not provided with the opportunity to further link the theory to practice. The essence of the teaching practice and student learning within this article demonstrates how the spiral curriculum and the simulation content has developed in complexity, from one year to the next. It has required the students to move from a passive role in observing, to taking an active role in the participation of role play. With students revisiting the mnemonic 'I AM A STAR' and through their personal reflections, it is anticipated that the students' learning will continue to develop, enabling them to apply their new knowledge and skills in clinical practice.

"As students, we're more likely to give the 'I AM A STAR' a go in the classroom surrounded by our supportive peers, in an environment where we feel safe, where there is little perceived threat. We can laugh there at our mistakes, we can experiment with what we learn, and the chances are we'll gain huge amounts of confidence. This will be reflected in our future as qualified nurses, improving the care we deliver to our patients".

Implications for Practice

Using the 'I AM A STAR' empowers students to apply a proven framework in clinical practice as part of the continuing assessment of their service user. The students develop an understanding that basic observation is a fundamental part of therapeutic engagement. The therapeutic journey continues with assessment and reassessment of the service user being an integral part of the nursing process.

The discrete components of the I AM A STAR enables the nurse to identify the nuances of a service user's mental state. The student commentary above demonstrates that the teaching was effective and that a nursing student was able to learn from the experience. This is evidenced by the student's assertion that they have developed new skills which they intends to utilise in practice. This reflects the views of Melnyk and Gallagher-Ford (2015) who found that students who are able to

understand and implement knowledge in the real world are able to improve patient outcomes through the application of evidence-based practice.

Future developments.

In line with the spiral curriculum it is necessary to increase student participation in future learning and to build upon the knowledge gained to date. This could be achieved by inclusion of skilled and experienced actors, not familiar to the students, who have knowledge of the complexities of mental disorder to play the role of a 'simulated patient'. It is also possible to widen the training to include registered nurses from all fields of nursing who can add 'I AM A STAR' to their existing repertoire of skills and thus undertake an observational assessments of real persons in the real world whilst supervising students.

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