Abstract

The Covid-19 pandemic restricted face-to-face contact between students and educators limiting continual assessment of student’s clinical skill development. This led to rapid transformational online adaptations to nursing education. This paper will present and discuss the introduction of a clinical “Viva Voce” approach which has been used at one university to formatively assess students clinical learning and reasoning skills using virtual methods.

The Virtual Clinical Competency Conversation (V3C) was developed using the ‘Think aloud Approach’ and involved facilitated 1:1 discussion based on 2 questions from a bank of 17 pre-defined clinically focused questions. 81 pre-registration students completed the formative assessment process.

Overall, feedback from students and academic facilitators was positive and facilitated both learning and consolidation in a safe and nurturing way. Further local evaluation is continuing to measure the impact of the V3C approach on student learning now that some aspects of face-to-face education has resumed.

Keywords:
Assessment; Clinical Knowledge; Covid-19 and Education; Nursing and virtual teaching/learning; Viva Voce.

Key points:

• The Covid-19 pandemic led to changes within Nursing Higher Education.
• The Virtual Clinical Competency Conversation (V3C) is an education innovation contributing to virtual learning, enhancing the student nurse experience.

• Virtual, formative assessment of pre-registration nursing students can be achieved through questions and scenario problem-solving on technical knowledge and practical application, patient assessment and risk-stratification approaches, planning and evaluating care or communication and human-factors.

• Assessment of nursing students against NMC requirements is critical to ensure patient safety is achieved in keeping with their scope of practice.

• The Virtual Clinical Competency Conversation approach has been embedded into a MSc programme as part of the new online learning style, increasing student motivation and confidence whilst reinforcing safe and effective practice.

Reflective questions:

• In your own experience, what challenges have impacted on the learning of student nurses within your own practice area?

• How have you changed the way you support student nurses’ learning because of these challenges?

• Do you think that your needs as a practice supervisor and practice assessor have changed during the Covid-19 Pandemic?

• How can you ensure that your teaching and assessment skills are up to date?

• What components of the Viva Voce approach could you implement into your own practice as a supervisor and assessor of student nurses?
Clinical learning for pre-registration nursing students: a Viva Voce approach during Covid-19

Introduction:

Whilst it is not yet possible to fully realise the long-term implications of the Covid-19 pandemic on global nurse education, there has been substantial changes to the provision of education for nursing students due to the pandemic across high, medium and low income countries (Agu et al. 2021). Currently, for many nurse educators and students alike, the scholastic journey has become unrecognisable from the pedagogical approach which we have become accustomed to. Whilst this pandemic has been one of the greatest challenges for nursing in over a century of professional practice, for nurse educators, it has sown the seed of change and forced many new adaptations to what were firmly established educational practices (Haslam 2021, Swift et al. 2020).

Background:

Before Covid-19, clinical skills within higher education institutions were commonly assessed using a mixture of high and low fidelity simulation and assessment, involving both nursing specific and interdisciplinary approaches to learning. During the first wave of the global pandemic, there was a move to limit all face-to-face contact between students and educators leading to primarily online learning (Dewart et al. 2020, Ramos-Morcillo et al. 2020). This has involved extended periods of only using screen-based learning and assessment (Alsaﬁ et al. 2020). An example involves the move to using video footage of physical assessment skills to facilitate the learning of both technical and critical reasoning skills. Similarly, in academic
assessment, for many, traditional written and / or on campus examinations have been replaced by remote, online, open book alternatives (Alsafi et al. 2020). Other innovations reported in the literature include online video-based assessments including enabling students to create and perform in medication advertising which utilise skills akin to those of influencers and social media professionals (Stuckey and Wright 2020).

Whilst continuing to study, during 2020 and 2021, nursing students have filled vital gaps in the global nursing workforce. In some cases, the demand for emergency registration has resulted in nursing students achieving their registered nurse status earlier than they ever expected. For the educators, there has been a need to support these working students through the challenges of the healthcare workplace, whilst continuing to ensure that student nurses achieve the standards required to join or remain on the register (Dewart et al. 2020, Nursing and Midwifery Council (NMC), 2018). For many, this has involved finding new ways of measuring the learning and maintaining of both technical and reasoning related skills.

Despite these experiences over the last 30 months, there has been a careful return to more face-to-face teaching activities in many universities in the United Kingdom since September 2021. Alongside this move, it has been recognised that nurse educators must continue to apply the innovative learning experiences acquired at the height of the global pandemic when developing educational interventions. This is particularly important as there is substantial evidence showing that such interventions which apply educator’s knowledge and pedagogical skills flexibly to meet the needs of the students will inevitably improve the student experience (Torbjørnsen et al. 2021).

The aim of this discussion paper is to report on one successful adaptation to the pre-registration Master of Science academic programme for both adult and mental health nurses...
in the Florence Nightingale Faculty of Nursing, Midwifery and Palliative Care at King’s College London. The educational intervention was established from a need for students to demonstrate the development of their clinical skills across the academic programme. During the spring of 2020, there was a need to create remote methods for measuring clinical learning which focused on communication, technical skill acquisition and the development of clinical reasoning, using a style which complimented education which student nurses received whilst in the clinical practice setting. The resulting intervention involved a remote clinical *viva voce* approach adapted from previously published methods (Roberts 2013, Orrock et al. 2014, Hungerford, Walter and Cleary 2015), used as a formative assessment. Within the academic programme, the *viva voce* technique was named the Virtual Clinical Competency Conversation (V3C) and these terms will be used interchangeably within this paper to aide understanding of the process.

**Applying a Viva Voce approach:**

The development of the *viva voce* approach to measuring clinical learning is theoretically driven, previously applied successfully in UK nurse education (Roberts 2013). Following suit, our *viva voce* technique employed the ‘Think Aloud Approach’ whereby learners are encouraged to vocalise their thought processes to provide the educator with insights into the cognitive processes which underpin the discussion in question (Banning 2008). In action, this involved the student verbalising their thought processes to an educator after being given a clinical question which incorporated components of decision making, critical reasoning and technical skills description. The ‘Think Aloud Approach’ recognises six key ‘cognitive operators’ which were measured in relation to nursing practices in this *viva voce* approach:

1. Connecting cues to identify potential interactions
2. Using descriptive methods to describe concepts and processes
3. Evaluating and interpreting information
4. Providing a justification for actions and decisions
5. Formulating information to reach a conclusion
6. Developing plans which safeguard and encompasses likely potential outcomes

(Banning 2008)

Questions were developed incorporating components of the local clinical practice assessment document, relevant to the student’s stage of training, focusing particularly on areas of the curriculum which would normally be covered through clinical simulations. Table 1 presents the selected topics areas for inclusion in the V3C.

*Table 1: V3C Topics selected from the curriculum*

<table>
<thead>
<tr>
<th>Technical Knowledge and Practical Application</th>
<th>Patient Assessment and Risk Stratification Approaches</th>
<th>Planning and Evaluating Care</th>
<th>Communication and Human Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aseptic Non-touch Technique (ANTT)</td>
<td>Vital signs, National Early Warning Score (NEWS)</td>
<td>Management of the patient who has taken an overdose</td>
<td>Situation, Background, Assessment, Recommendation (SBAR)</td>
</tr>
<tr>
<td>Catheterisation of a female / male patient</td>
<td>Cardiac pathophysiology and assessment</td>
<td>Managing a patient with an infectious disease</td>
<td>Diagnostic overshadowing</td>
</tr>
<tr>
<td>Wound care and infection control</td>
<td>Respiratory pathophysiology and assessment</td>
<td>Managing an unconscious patient</td>
<td>Closed loop communication and effective sharing of the mental model</td>
</tr>
<tr>
<td>Safe collection of specimens</td>
<td>Neurological assessment &amp; Glasgow coma scale</td>
<td>Managing a patient with a diabetic emergency</td>
<td>Accurately sharing complex information</td>
</tr>
<tr>
<td>Injection technique</td>
<td>Gastrointestinal pathophysiology and assessment</td>
<td>Managing a haemorrhaging patient</td>
<td>Information sharing with patients and family members</td>
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</table>
For these topic areas, a bank of 17 questions were developed, discussed and agreed across the teaching teams from the mental health and adult departments. The following are example questions from within the questioning framework used with both adult and mental health student nurses:

1. You find a collapsed patient in the ward bathroom. The patient is breathing and showing signs of life, describe your immediate actions and the priorities in your subsequent assessment process.

2. A 74-year-old female patient was admitted to hospital after developing bilateral lower limb oedema. Firstly, consider what pathophysiological processes could cause this. Secondly, describe the steps you would follow when planning the potential care needs for this patient.

Implementation of the clinical *Viva Voce* approach:

Between October and November 2020, 81 preregistration students (Mental Health (n=33), Adult (n=48)) participated in a formative clinical conversation with one of eight academic facilitators. Students were asked two questions from a range of topics (Table 1) relating to either a skill or potential clinical scenarios (or both). In addition to the aforementioned areas of nursing practice, aspects of communication and human factors were integrated within the process. No distinction was made between questions asked of mental health and adult

<table>
<thead>
<tr>
<th>Enteral feeding</th>
<th>Musculoskeletal assessment</th>
<th>Managing challenging behaviours and using support plans</th>
<th>Confidentiality, capacity and consent</th>
</tr>
</thead>
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nursing students to ensure they had opportunities to explore learning and experience in both fields of nursing.

Each student was invited to select one topic and the facilitator asked the corresponding question (Figure 1). The facilitator then selected the second question from the prepared topic list. Each V3C lasted up to 30 minutes with the requirement of every student demonstrating requisite knowledge, skills and values around preserving patient safety and practising effectively. During the V3C, each student was encouraged to draw on theoretical and clinical practice experience to reflect their depth of knowledge and understanding. A series of prompts and queries were used to enable students to explore responses.

The conversation was to be reinforced as a learning process and a formative component of the module assessment. The facilitators assessed the student against practice standards. At the end of the V3C the facilitator informed the student whether their responses demonstrated safe practice in keeping with NMC (2018) requirements and within the scope of practice as a part 2 MSc student nurse. Achieving the standard did not impact on the student’s final module grade. Where student’s responses demonstrated unsafe practice, a second V3C was arranged with another assessor, normally the respective module leader (Figure 1).
Evaluating the clinical *Viva Voce* process

In autumn/winter 2020/2021, feedback and reflection on the V3C activity were conducted by academic facilitators and participating students. The reflective process focused on exploring the student experience of this learning model.

As part of regular evaluation activity, anonymous student evaluation feedback was collected at various timepoints which consisted of student comments made in group reflection; feedback was hand noted with consent. No other details were recorded. This non-identifiable
feedback was used as a process of clinical supervision and a vehicle to start evaluating the V3C activity.

Due to the program structure, the mental health students were the first to participate in the V3C activity which enabled the project team to engage in an iterative, cyclic evaluation process to be refined before the adult branch students participated. This method of reflective evaluation was employed primarily to facilitate an ongoing development process to ensure the intervention met the needs of the education team and students. Table 2 presents key aspects of the early initial reflective evaluation from the mental health students.

**Table 2: Initial reflective feedback on from the V3C activity**

<table>
<thead>
<tr>
<th>Timepoint: Before the Viva Voce</th>
<th>Feedback</th>
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<tbody>
<tr>
<td>Outlining that the conversation will be for approximately 30 minutes, 10-15 minutes per question which may be skill &amp;/or scenario based.</td>
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<tr>
<td>Providing relevant resources students could access to prepare.</td>
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<table>
<thead>
<tr>
<th>Timepoint: During the Viva Voce</th>
<th>Feedback</th>
</tr>
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<tr>
<td>Enabling students to feel involved and as co-collaborators; the academic at the start of the session could briefly state the topics they would be discussing and then follow-up by asking the student which of these they like to talk about first? The academic then could select the corresponding question for that topic and move onto the second topic thereafter.</td>
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<tr>
<td>Reminding students that the purpose of the conversation was to discuss and review safe practice and not to ‘pass/fail.’</td>
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<tr>
<td>Stating that any concerns about safe practice (knowledge, skills or values) will be raised in the conversation and discussed, as well as if necessary, being brought to the attention of the respective module leader.</td>
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</tbody>
</table>

Following completion of the V3C activity with the adult field students, further reflective evaluation sessions were conducted. The remaining anonymous feedback was reviewed by members of the project team, grouped together, and categorised. Keys areas of focus
included: student guidance; clinical topics; student expectations; timing of the activity; student experience; and focus.

Overall, evaluative comments were positive from both students and academic facilitators. **Table 3** presents a summary of the key secondary evaluation feedback on the V3C activity. **Figure 2** presents a personal reflection from an Adult and a Mental Health student on the V3C process.

**Table 3: Summary of Secondary Evaluation Feedback from students**

<table>
<thead>
<tr>
<th>Category</th>
<th>Evaluation feedback</th>
</tr>
</thead>
</table>
| **Student guidance**      | • Content to be more specific, e.g. clarifying whether questions would be skills-based or scenario-based.  
• The guidance list of topics was too long for some, whereas others felt the list was comprehensive and enabled deep revision of content.  
• Clarification of time students were expected to answer the question within was required, as well as the level or depth to prepare responses.  
• An example question could have been provided.  
• There was an expectation of biological knowledge rather than principles of safe practice. Some students wanted clarification of process in relation to MSc and NMC requirements about safe practice. |
| **Clinical Topics**       | • Some said topics were too broad and needed more specific focus of questions and scenarios.  
• The extensive nature of the topics encouraged revision of all content, not just some.  
• Greater consistency across V3C facilitators was required, by ensuring all students are asked 1 scenario-based question and 1 skill-based question.  
• An understanding surrounding safe practice within their scope of practice as student nurses was gained. |
| **Student Expectations**  | • It was a rewarding experience at the end of the module that met expectations about own learning. |
- The V3Cs were not what students expected and said they had spent a lot of time revising. Others said the questions were too general and simple.

### Timing of the activity
- Most students felt that a “short & sharp” approach worked best. Others wanted a longer time with the academic to explore more than two questions.
- There were varied views re: the notification time to prepare for V3Cs. Some students thought one week was not enough notice to revise and prepare, others said they preferred less time to revise as it assisted in managing their sense of anxiety.
- In terms of the timing of the V3Cs within the programme, some students said holding the V3Cs at the end of the module was good, allowing revision and consolidation of learning. Others felt the V3Cs should not be held just before submitting the summative assessment and attending other module requirements.

### Student experience
- Some individuals found the experience made them anxious whilst trying to revise many topics in such a short space of time. Others found the preparation process to be a lot of work when there were additional learning requirements to be met.
- Most students said they found it a rewarding experience and a confidence boost.

### Focus
- The 1:1 experience provided by the V3C enabled a more detailed focus on individual students to share knowledge, skills, and values.
- Most students commented they felt more relaxed during the session than anticipated, which allowed them to open up and talk.
- Immediate feedback on progress was commonly reported as a major benefit of the V3C process.
Within this reflective evaluation feedback, most students acknowledged that the *viva voce* process enabled and reinforced learning. Furthermore, this increased motivation to consolidate knowledge gained during the clinically focused modules included in the MSc programme. Several students felt that this process helped them to recognise how much they knew about these clinical topics. Students also commented that the process helped them recognise the substantial content taught on the MSc programmes. There was an overall sense
within the evaluation feedback that students felt rewarded because they had achieved their own learning expectations through this activity. Similarly, the academic facilitators were reassured by students’ level of knowledge and awareness of safe, effective practice. The V3C activity also helped students to self-identify gaps within their knowledge heightening areas for further learning.

This self-awareness associated with self-identification of these areas for learning is an important step in the development of a healthcare professional with reflective abilities. Furthermore, knowledge gaps are critical factors that can negatively impact both nurse and patient outcomes (Severinsson and Holm 2012). It is therefore vital that student nurses learn how to address any gaps and develop their understanding and professional skills to facilitate delivery of high quality care, whilst maintaining patient safety and satisfaction throughout their careers (Hansen et al. 2012). The reflective feedback suggests that the V3C process enabled this through encouraging reflection, self-testing of knowledge and consolidation of learning.

Most students expressed there was a benefit in having a one to one clinically focused conversation with an academic facilitator. Many identified that they preferred this learning strategy to the more commonly used group tutorial approach for clinical discussions. Within nursing education, teaching and learning strategies which integrate one to one dialogue between students and teachers, improve the learning experience for individuals (AlKhaibary et al. 2021). Students felt that the informal approach and nature of the questioning used by academic facilitators made them feel more relaxed, comfortable, and enabled them to be open to the potential of this educational intervention.
Finally, students alluded to the theory practice gap and most recognised the challenge of meeting both academic and clinical requirements for completion of a registered nurse education programme. Combining academic teaching and theory, with clinical practice and experience has always been considered a consistent challenge when educating nursing students (Shoghi et al. 2019). Students feedback that the V3Cs helped “draw the two together” demonstrating that this approach assisted in reducing the theory practice gap. Many students felt that this activity boosted their confidence to progress in both their academic programme and clinical education.

Positioning a clinical Viva Voce in post-Covid-19 nurse education:

Using the reflective evaluation feedback from students, further refinements were made to the process prior to implementation of the second iteration of the V3C activity:

- The students will receive a specified selection of topic areas to prepare, taken from the framework presented in Table 1. It is hoped that this will enable students to focus their preparation and revision.
- For academic facilitators it was decided that scenario-based questions about clinical skills and technical processes provided greater learning opportunities than role play based scenarios.
- A consistent questioning strategy will be used by all facilitators e.g. all students are asked 1 scenario-based question and 1 skill-based question.
- Academic facilitators will develop rubrics for each potential question to help guide student preparation and standardise the expectation from the facilitators.
• A similar concept could involve formative peer teaching; where a student explains the skill to a peer, whilst being observed by a facilitator. Further, one to one or peer teaching sessions could be recorded virtually and then reviewed by the student, their peers and their facilitator. This would promote enhanced reflection and provide a record of their communication skills and knowledge.

• More frequent use of the V3C approach across all MSc modules could be applied; for example, bite-sized chunks which could test knowledge, using potentially a quiz-based format.

• Further consideration of when within the programme the V3C activity is scheduled is necessary, to ensure minimum impact upon summative assessment.

Limitations

Whilst considering the limited evaluation feedback from a small sample of students, it was identified that the educational intervention required ongoing testing and development. Thus, a decision was made to introduce the V3C activity within the adult and mental health MSc programmes on a regular basis with the current and future cohorts, with a continuing iterative process of refinement.

Conclusion

The clinical *viva voce* approach has been introduced at one university as an adaptation to reduced face to face learning within nursing education due to the Covid-19 pandemic. This is
an innovative method of enabling students to discuss aspects of clinical practice whilst providing an opportunity for them to voice their decision making and critical thinking abilities in a safe space. It is anticipated that this allows students to consider the importance of the cognitive components of their clinical work rather than the pure process driven technical skills which they would be expected to learn in clinical practice.

Overall, a mixed methods evaluation of the educational benefits of this approach is needed. Academic facilitators will continue to collect experiential data from students and staff. For future practice, the V3C activity can then be refined and embedded as part of the new hybrid learning style which underpins the pre-registration MSc programme, largely initiated by the Covid-19 pandemic.
Reference list:


Severinsson E. Holm AL. Knowledge gaps in nursing leadership - focusing on health


