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# Teaching nursing skills in the clinical environment

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It would be fair to say that much of the teaching of clinical practice in the veterinary workplace is undertaken by staff members who have no training in the principles of education. This article will use the example of selecting an appropriately sized intravenous catheter to discuss educational principles. Where educational terms are used that may be unfamiliar to the reader, these are defined in **Box 1**.

## Teaching and learning

Veterinary nursing students are motivated by a number of factors including the need to complete their day one skills log and to provide appropriate care for their patients; they therefore value learning in clinical environments (Duncan, Dale & Pead, 2011). Motivation is a key factor in learning practical skills. George (2001) believes that learning cannot occur without it. If a student is motivated and sees the value of a skill, they will be more engaged with their learning and this provides an ideal opportunity for them to learn or revise information as well as a starting point to develop other capabilities, such as problem-solving skills (Biggs, 1999).

Students look to qualified, experienced practitioners as their role models as they aspire to emulate them and look to them for answers. Historically, medical education has been teacher-centred – the teacher stands in front of the class and the students' copy down the information presented to them passively. Student veterinary nurses are likely to have experienced this throughout their schooling (Lantz, 2008; Towle & Cottrell, 1996).

However, there has been a significant move towards teaching becoming student-centred leading to the idea of self-regulated learning, with the teacher taking on the role of a facilitator (Glicken, 2004).

## Which catheter should I select? – Learning

The experienced veterinary nurse is able to draw upon numerous skills that have become second nature in order to encourage learning in students; one example would be selecting the correct catheter gauge size.

“What is the correct size” is one of the questions most commonly asked when requesting students to set up for a catheter placement; in this scenario, the student is relying on the tutor to provide the answer. However, answering the student's question directly will eliminate the opportunity for the student to recall or apply previous knowledge or experiences or to develop problem-solving skills (Towle & Cottrell, 1996).

If not “spoon-fed” the answer, the students have to think for themselves and this will encourage them to begin to direct their own learning. Vygotsky's Zone of Proximal Development is a useful model to demonstrate the aim of self-regulated learning and a student-centred approach (Vygotsky, 1978) (**Figure 1**).

Vygotsky created his model to illustrate how students can perform some tasks without help and others with facilitation, while certain tasks cannot be performed at all in the early stages of learning (Fani & Ghaemi, 2011). Vygotsky suggested that the student can move through these zones when the teacher provides a foundation or “platform” to help jog a student's memory or make connections with previous tasks. The teacher can then use their own knowledge and experience to support the student through the learning process rather than providing all the answers; this is often termed “scaffolding learning” (Fani & Ghaemi, 2011; Warford, 2011).

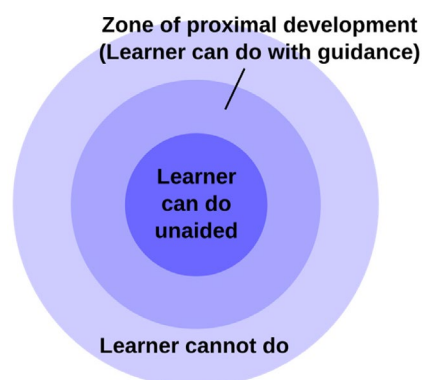


Figure 1. [https://commons.wikimedia.org/wiki/File:Zone\\_of\\_proximal\\_development.svg](https://commons.wikimedia.org/wiki/File:Zone_of_proximal_development.svg) Image available under the Creative Commons CC0 1.0 Universal Public Domain Dedication



Figure 2. Published with kind permission from Paul Hopkins <http://www.mmiweb.org.uk>

## Which catheter do you think you should select? – Teaching

Bouncing questions back to students is a very useful technique to encourage the student-centred learning that has been discussed above, as this encourages the individual to draw upon previous learning and experiences (McGill, 2011). This strategy must be used appropriately; if speed is of the essence or patient welfare is at risk, a didactic approach may be required.

- If a student asks which catheter to select, ask them which one they think they should use
- If they are not sure or select an inappropriate size, you can allow them to clip the patient's leg and examine the vein and ask again
- If they are still not sure, they can be encouraged to research gauge sizes. This research should be conducted before the student places the catheter. If there is time, the patient can be allowed to rest between clipping and catheter placement (ideally with

a topical local anaesthetic placed on this clipped area); however, if speed is of the essence the facilitator can take over the selection and placement process while the student researches gauge sizes

If the student has made an inappropriate selection or picked the catheter at random, gentle discrepant questioning can be used to identify the underpinning rationale behind the student's choice (Rea-Ramirez, Nunez-Oviedo & Clement, 2009). This will not only highlight where there may be misconceptions or confusion and prevent future mistakes, it may also help to trigger previous experiences of knowledge in the student (Rea-Ramirez et al., 2009). This allows more meaningful conversations in which a deeper learning experience can be achieved without increasing the overall teaching time as the student will be recalling knowledge they learnt from their previous experiences, rather than having the basic concepts they have previously learned explained to them again.

As only the most commonly used catheter sizes are available within the clinical area, this will help the student to focus on the most appropriate one to choose and to recall information previously learnt. Therefore, we are already unintentionally facilitating the student's learning and creating a platform from which they can develop their understanding. By not directly answering the question, "Which catheter should I select", the student can select the catheter with support and will move out of the first zone of proximal development described by Vygotsky (Figure 1).

As experience of the technique grows, the student should then be able to start to make decisions on the appropriate catheter size by applying previous knowledge and experiences and evaluating their own choices. Once they are able to select catheters unaided, not only have they then progressed through Vygotsky's zones of proximal development, they have also been able to progress through the levels of the classification system known as Bloom's Taxonomy (Bloom, 1956) (Figure 2).

Bloom depicts the processes that are required to achieve the critical and high-order thinking skills that encourage lifelong learning (Kerr, Mullan & Main, 2013). Anderson and Krathwohl's adaptation (referred to as the Revised Taxonomy in this article), uses more accessible terminology for those not used to educational jargon (Krathwohl, 2002).

In this model, the student's desired learning outcomes are defined as "remembering, understanding, applying, analysing, evaluating and creating" (Krathwohl, 2002). The Revised Taxonomy can be used to structure the learning outcomes for the student – the principle remains that if the student is simply told the answer, they will not need to "remember" and will then struggle to move past this learning stage.

In addition, the five-step method of teaching practical skills is also extremely useful and therefore worth a mention. It requires the students to understand why the skill is necessary before multiple repetitions of a demonstration are conducted (George, 2001): firstly with the facilitator silent; secondly with them talking through the skill; then with the student talking through the skill, before finally the student's practices the skill (George, 2001). Due to the multiple demonstrations of the skill this method may not always suit the clinical environment, but instead lends itself to a simulated setting.

## Controlled error making

While we cannot allow the student a complete trial-and-error experience of catheter placement in live patients, we can allow controlled error-making with regard to the selection process and intervene before the catheter is placed as necessary.

The ward must be made into a safe learning environment where controlled error-making is allowed and the student can take risks in their learning (Glickin, 2004). Safety, the feeling of belonging in your environment and self-esteem are all aspects of Maslow's Hierarchy of Needs, which are required for effective learning, (Freitas & Leonard, 2011). It must be stressed, however, that these controlled mistakes should never be allowed to impact upon the patient's welfare. It is an integral part of our role as a veterinary nurse and learning facilitator to prevent these controlled mistakes affecting the patient.

Students must be able to learn from their mistakes. Poor self-regulated learners (those who rely on the teacher to direct their learning) will often attribute low achievement or failures to factors that are out of their direct control (Sandars, 2013). For example, they may believe that their poor achievement was due to their teacher, the learning environment or resources, or what they perceived as an unfair assessment. The facilitator can use reflection and feedback sessions to highlight this pattern to the student if necessary, and explore ways to overcome

this issue (Sandars, 2013). Controlled error-making will also naturally create a trigger for reflection and feedback, both of which have been proven to have a positive effect on learning (Van de Ridder, Stokking, McGaghie & ten Cate, 2008).

## Feedback and reflection

### Students

Appropriate feedback is essential to learning (Wood, 2014). Feedback needs to be specific, descriptive, non-judgemental, clear and well-timed, in contrast to the commonly used “good” or “well done” (Van de Ridder et al., 2008; Wood, 2014). Good feedback will allow the student to move higher through the Revised Taxonomy (Krathwohl, 2002; Van de Ridder et al., 2008).

Feedback should be part of a conversation between the student and the teacher. If constructive, it can improve student confidence and provide clarity to complex situations (Nicol & Macfarlane-Dick, 2006; Neary, 2000). While there is some debate on the delivery of feedback (Archer, 2010), it is recognised that the student should be helped to evaluate their own learning and encouraged to make a plan of self-development (Wood, 2014), as well as receiving external validation and guidance from their tutor/clinical coach (Gigante, Dell & Sharkey, 2011; Wood, 2014). Feedback can be structured within a framework such as the agenda-led outcomes-based analysis method, or Pendleton's Rules, both of which have their own positive and negative aspects. Both concepts use a format in which the student directs the feedback session; for example, they tell the facilitator what they think went well and what they could improve upon, before the facilitator comments (Wood, 2014). We should use the method we feel most suits our students, the situation and ourselves (Wood, 2014). Pinpointing when feedback is being given is also very important. When working with students, dialogue is continual and therefore feedback is often given in general conversation. It is important that you know your student has heard and understood the feedback being given (Wood, 2014).

Time scheduled for the student to receive more formal feedback is often rushed due to the busy nature of practice. I often hear, “We will *quickly* sit down and go through your clinical tool”. This feedback time is not only mandatory as part of the NPL, it is extremely important to enhance the

learning experience and ensure that the student understands the feedback given; it also allows you to set aside reflection time (Nicol & Macfarlane-Dick, 2006; Wood, 2014).

Reflection allows us to make sense of our learning and formalise day-to-day experiences – it is therefore vital to learning (Kaufman & Mann, 2014). I believe that most people will reflect to a degree on failures; however, in a busy environment, do many of us ever truly reflect on the positives or how to learn from our mistakes? If we trigger and structure reflection time for our students following failed attempts or after successful catheter placements, they will be able to apply, analyse and evaluate their experiences, rather than only superficially recalling a bad or good experience.

### Facilitators

We can encourage student reflection by leading by example and asking our students to reflect and feedback to us on our teaching (Wood, 2014). Leading by example and being a strong role model is an important part of teaching and often is the main driving force behind the development of a hidden curriculum (Hafferty & Franks, 1994).

We can then reflect upon our own thoughts and feelings and our student's feedback. Taking time to stop and reflect on the situation and think of new methods to explain or demonstrate a skill can prevent stress and loss of motivation for all involved, including the patients. Furthermore, the skills we are teaching are repeated each time we work with a new student. Therefore, we have the perfect opportunity to reflect on positive outcomes; for example, if and how it was better than the previous time the skill was taught and how the learning experience could have been improved.

## Conclusion

Everyday skills that are apparently simple for us are learning opportunities for our students and we should aim to facilitate their learning in all aspects of veterinary care. The process may seem somewhat repetitious for us, but it can alter the whole learning experience for students and encourage good life-long learning practice.

Initially, this style of student-centred teaching may take extra time, which is not always easy to find in busy practices. However, as the student becomes increasingly self-regulated, they will become less reliant on you telling them the answer and

more meaningful discussions can then occur, saving time and potentially teaching you new information too (Sandars & Cleary, 2011; Sandars, 2013; Zimmerman, 1989). This will allow the profession to continue to develop and challenge our pre-existing knowledge and methods.

### Box 1. Glossary

**Deep learning** – Deep learning is the ability to engage in learning and apply the newly gained information to past experiences and a wider perspective (Shaari, Mahmud, Wahab, Rahim, Rajab & Panatik, 2012).

**Didactic** – A didactic teaching method is a teacher-centred approach, in which the teacher is the authority figure who passes on the required information (Banning, 2005).

**Discrepant questioning** – Discrepant questioning is a method in which a facilitator questions a student to help overcome previous misconceptions and deepen understanding (Rea-Ramirez, Nunez-Oviedo & Clement, 2009).

**Hidden curriculum** – This is the morals and values found in an institution or profession, often unintentionally taught to the student (Kaufman & Mann, 2014).

**Lifelong learning** – Lifelong learning is the ability to be responsible for and to continue learning once schooling has finished to improve knowledge and skills (Jarvis, 2004).

**Reflection** – A thought process that helps to formalise learning and make sense of experiences (Kaufman & Mann, 2014); can be “in action” (How are things going? How can I improve this now?), or “on action” (How did that go? What went well? What can be improved?).

**Self-regulated** – Self-regulated learners can create relevant goals and ways in which to achieve these goals, assess whether the goals are being met and appreciate if their methods to attain these goals are working (Kaufman & Mann, 2014)

**Student centred** – Compared with a teacher-centred approach, this is a teaching approach that encourages the student to be an active participant in learning; the focus moves away from how much can be taught towards how learning can be improved (Sawant & Rizvi, 2015).

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AQ1

## Multiple Choice Questions

### 1. How would you describe a didactic teaching style as opposed to a student-centred style?

- (a) the teacher directs the learning experience, the student is passive
- (b) the student directs the learning experience, the teacher facilitates
- (c) the student teaches themselves without facilitation
- (d) the learning experience is online

### 2. Vygotsky suggests that:

- (a) students can move through the zones of proximal development with facilitation
- (b) students cannot progress through the zones of proximal development
- (c) the facilitator should tell the students the answers to help move them through the zones of proximal development

- (d) all tasks can be performed immediately without help or facilitation

### 3. Bouncing questions back:

- (a) encourages students to recall knowledge and experiences
- (b) may increase teaching time
- (c) is a student centred teaching method
- (d) all of the above

### 4. The levels of Anderson and Krathwohl's adaptation of Bloom's taxonomy are:

- (a) remembering, understanding, applying, analysing, evaluating and creating
- (b) understanding, realising, considering, reflection and feedback
- (c) learning, remembering, creating, considering, reflecting and evaluating

- (d) learning, reminding, relearning, analysing, understanding

### 5. Feedback and reflection:

- (a) are essential for student learning
- (b) are essential for student and facilitator learning
- (c) feedback alone is essential for learning
- (d) reflection alone is essential for learning

### 6. Students may blame low achievement on external factors:

- (a) If they are reflecting on their learning
- (b) If they have good self-regulation with respect to learning
- (c) If they feel unfairly assessed
- (d) If they want to learn from their mistakes

For the answers to the MCQs, please go to: <http://www.bvna.org.uk/publications/veterinary-nursing-journal>