# The HIT model of TVET knowledge:

# Knowing-how, knowing-it and knowing-that.

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This brief paper is about three kinds of knowledge that are important in TVET:

* **H** ‘Knowing-how’, or procedural knowledge.
* **I** ‘Knowing-it’, or recognition (also called knowledge by acquaintance).
* **T**  ‘Knowing-that’, or propositional knowledge (also called declarative knowledge).

See the video that accompanies this discussion on YouTube (Hugo, 2019).

**What is knowing-how’?**

Knowing how to do something is being able actually to do the activity. When we are skilled at a particular job, we know the procedures we need to go through in order to do it. This know-how is usually understood to be ‘in our bodies’, in our muscle-memory and our central nervous system: it is embodied knowledge. If you know how to do something, then you should be able to do it at different times, in different ways, depending on the context and the demands of the procedure. Common examples of this are knowing how to ride a bicycle or how to drive a car. If you know how to ride a bicycle, then you can get on the bicycle, turn the pedals, use the brakes, ride it in the morning, afternoon, or evening, up a hill, down a hill, on a path and on a road. Knowing how to do something means the person can do it! Just because a person knows how to ride a bike, does not necessarily mean that they can explain to someone else how to ride a bike, or even explain how it is that they can ride the bike. Note that there is also knowing-how in academic study. You know how to read a book, take notes, argue, etc.

This is called tacit knowledge - when a person knows how to do something but cannot really explain it in words. A major aim for TVET lecturers is to enable their students to know how to “do” the skills and procedures of the occupation for which they are training. A lecturer should know how to do the skilled procedures needed for the occupational tasks they are teaching, and should be able to demonstrate to students how to do it - often by showing them - with the students gathering round, watching, and imitating. It takes a long time to develop know-how fully, with lots of practice in different situations, so lecturers should aim to develop basic know-how in their students. It is not really possible for students to develop deep forms of know-how whilst at the TVET college, but it is vital for students to have extended opportunities to practise the practical dimensions of their occupation. The lecturer, however, SHOULD have deeper levels of know-how, where the skills of the occupation are already fully embedded in his or her body.

**What is knowing-it?**

When a person knows what something is, then it means they are familiar with it, have been around it, have experience of it. It is also called recognition - the person recognises the object or action when it occurs. When a person knows what something is then they are able to work out what counts as a good example or a bad example of it. This is the kind of knowledge that has basic and expert forms of it. A basic form of recognition needs to be developed in students, where they start to become familiar with what the various parts of the occupation are that they are studying. This is mostly done through authentic work experience where they get to be surrounded by the actual context, products, and equipment of the occupation. This basic knowledge is built over time by a skilled practitioner who is continually acquainted with the products of particular craft practices (his/her own and those of others). Examples of this are the ability of a veteran cabinet maker to recognise an excellent table, or the ability of an experienced hairdresser to recognise fine braiding. Being familiar with something does not necessarily mean the person knows how to do the actions or the skill. It is possible to be familiar with what the thing is without necessarily being able to skillfully use or do that thing. Just because a person can recognise a fine braid, does not necessarily mean that the person can actually DO a fine braid. Recognition of a good teaching practice does not mean a person can actually do that good teaching practice in reality. A teacher can know what a good practice is, without knowing how to do it.



Figure 1 - Knowing-it

(Taken from Moll et al., 2005)

**What is knowing-that?**

When a person knows a lot about something and can say it clearly then we call this type of knowledge 'knowing that'. It is the knowledge of what something is, and how and why it works the way it does. This kind of knowledge can be clearly written down and put into textbooks. If someone knows about something then you would expect that they can tell you what its parts are, how it works, how to use it, and what its strengths and weaknesses are. It is book knowledge about something. 'Knowing that' is also called propositional knowledge. A proposition is a statement that contains information about things; a proposition says something about the world. If a person has propositional knowledge then they can make statements about what the thing is and how it works. They can clearly declare to the world what the thing is about. These propositions can be put into clear sequences that describe the steps and processes of using the thing. It can be learnt from a textbook because it describes what is known about the thing, rather than directly experiencing the thing or using the thing. This is cognitive knowledge because we mainly use our minds and understanding to develop this kind of knowledge.

*If you would like to pursue these ideas about knowing-how, knowing-that, and knowing-it in the TVET context in much more depth, read Christopher Winch (2010; 2017).*

**What happens if 'knowing-how' and 'knowing-it' are combined together?**

A very important part of being a good TVET lecturer is getting your students to combine knowing how to do a task with actual experience of the task. Often, because of lack of time or resources, students are shown how to do a skill and get a chance to practice the skill, but in situations that are far removed from the real situation they will be working in. It is not a bad thing, to firstly show a student how to do something in a more simplified context that does not have all the complexities of a workplace or the actual equipment used in the occupation. This helps the student focus simply on what the task is and how to do it, without all the other complications and stresses. It is both possible, and often good practice, to show a student how to do something, without trying to get them to experience what the whole activity is in real life. In this way the student gets a sense of how to do the actual practice without getting confused by all the real life complications. In a similar way, it is not a bad thing to initially get the student acquainted with what the thing or process is, by spending time touching, feeling, and being around it. This can be done separately from showing the students how it works and what skills are needed to work with it. But when a student has a chance to combine both Knowing How and Knowing It together, then a very powerful form of learning happens, because the student can both recognise what the thing is and use it in different circumstances in skillful ways. We can use the example of students in hospitality who learn to become Baristas, or makers of Coffee. A good cup of (expensive) coffee, made using one of those expensive coffee machines involves both knowing what a good cup of coffee actually tastes like, and being able to use the machine in the proper way. If a hospitality student learns how to use the coffee machine properly but has no real experience of what a good cup of coffee tastes like, then she might be able use the machine properly, but not actually know if she has made a really good cup of coffee, because she cannot recognise its taste clearly. Combining both knowing how to make a good cup of coffee and actually knowing what a good cup of coffee tastes like will make the student a far better 'barista' and help her move forward within the hospitality trade.

**What happens if ‘knowing-it’ is combined with ‘knowing-that’?**

Many students go through TVET colleges learning from textbooks and being able to write down all the information needed on the demands of their occupation. But if it is just learnt from the textbook without having any real experience of what the actual occupation demands, then there is a real danger that employers will refuse to employ them, even if they got high marks in their tests. This is because employers often need the newly graduated student to be able to recognise what is needed to be done in what circumstance. If the student just has theoretical knowledge from the textbook but does not know when this knowledge actually applies to the situation at hand, then the student can look very 'stupid' and unemployable, because she does not know when theoretical knowledge actually applies in real life. This does not mean that all the student must do is become familiar with the workplace and its demands, because this will not help the student actually do tasks and solve problems. But if the student knows the theoretical principles of the process, but also knows what actual things theory applies to, then it helps the student in two ways. Firstly the theory starts to make sense, because there is an actual situation and things to apply it to and make it concrete and practical. Secondly, the actual experience of what the thing is starts to make more sense, because the theory provides the principles behind why it works the way it does, and how it works in different situations, and what its strengths and weaknesses are.

**What happens if ‘knowing-how’ is combined with ‘knowing-that’?**

A very powerful form of learning happens when a student both learns how to use something and also understands the reasons why it works the way it does. Combining textbook learning with a practical demonstration means that the student is able to apply the theory to the task and understand why the theory makes sense. It is a basic combination of theory and practice that every TVET lecturer needs to master and strive to achieve. A TVET student both needs to understand the principles behind why something works the way it does, plus have opportunity to practice how it works. Experience with ‘the hand’ must be combined with understanding of the ‘head’. Many TVET lecturers have landed up only teaching from the textbook and given up on trying to enable practicals where students actually try out the task in reality. There are many reasons for this (lack of time, need to prepare for tests, lack of equipment etc), but the most basic teaching requirement of a TVET lecturer is to combine Knowing-That with Knowing-How. No matter what the reasons or forces against practical lessons, every TVET lecturer has to make a personal commitment to providing students with the opportunity to know how the various skills and tasks of their occupation work, rather than just teaching how it works from a textbook. Demonstrations where students get a chance to see, copy and imitate what the actual skills are is the lifeblood of TVET learning. If it is not happening on a regular basis then the name TVET should not be applied - how can a student learn something technical, something vocational, in a trained way, without practical demonstration that develops 'know how' in the student?

**HIT – Combining ‘know-that’, ‘know-how’ and ‘know-it’**

The highest goal for a TVET lecturer is to enable their students to combine three types of learning together: understanding the theoretical principles and knowledge needed behind the occupation; knowing how to do the skills and tasks demanded by the occupation; and being able to go into the workplace and actually recognise what the real demands are of the occupation, because the student has developed some familiarity with what the occupation actually is. If TVET lecturers enable this for their students, then they can consider themselves to be 'good' lecturers.

TVET colleges have structured their qualifications around these types of learning. All TVET's are supposed to combine a technical education where students learn about the occupation of their choice in the lecture rooms; some form of simulated practical training where students go to workshops or do some kind of practical activity that shows how things work; and some form of authentic work experience where students experience what is actually demanded by the workplace. The effects of all three types of learning working together are very positive. A student who only learns one way to do a skill (basic know how) without understanding why it works that way (knowing that) and how the skill works in a real workplace (knowing it), is stuck with a basic skill and no idea how it fits into the bigger picture. A student who only learns from a textbook has minimal skills and no idea what to do in the workplace. A student who goes to a workplace and becomes familiar with its machinery and demands, but does not have a background in what the skills are, and what knowledge is needed to understand the occupation, is stuck at a very low level in the workplace. A student who emerges from a TVET with an understanding of the knowledge and theory needed for the occupation, basic skills to actually do the tasks of the occupation, and some recognition of what the workplace demands within the occupation, is employable and useful to the workplace, the occupation, and to the country. The student can see the bigger picture. The student is able to do the tasks required in an intelligent and flexible way, because the student understands the reasons behind why the skills work the way they do. By the end of their studies, the students should develop early levels of situational wisdom, where they are competent in the basic requirements of the occupation, but also have a theoretical grounding in what the occupation is, enabling the student to see what the situation demands rather than blindly trying to do a basic skill or, worse, parroting off what the textbook says without really knowing what it means - that is if the student can even remember what was learnt. If students are able to combine all three types of knowledge needed for their occupation, then they have 'working competence' - they have the basics in place to work in the occupation in an intelligent and engaged way.

**References**

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