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Dialogical Inquiry

A short guide to teaching using a dialogical inquiry approach

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This publication should be attributed to:
Bound, Helen and Tan Seng Chee (2020). Dialogical inquiry: A short guide to teaching using a dialogical inquiry approach. Singapore: Institute for Adult Learning.

For further information on this publication, please email to ***research@ial.edu.sg***

For the research report on which this Guide is based, see

Dialogical Teaching Learning Report

Dialogical Inquiry

An Innovative Teaching Approach to teaching and learning

This guide provides an introduction to a pedagogical innovation known as dialogical inquiry that actively engages and empowers learners, develops their learning to learn capabilities and their identities as a learner and as a professional. This guide is for:

- Adult educators, be they teaching in institutes of higher learning (IHLs), private training organisations or as an in-house trainer, AND for
- Management / Teaching and Learning Centre staff in educational institutions /organisations

Key aspects of the dialogical inquiry process

The pedagogical approach of dialogical inquiry involves learners in collaboratively constructing meaning through ***dialogues and interaction with multiple artefacts (e.g. sharing of experiences, articles, guides for undertaking particular learning activities).***

- Through interacting with different artefacts, learners are exposed to a range of perspectives that they need to make sense of in order to construct their own meaning and in the process, contribute to constructing knowledge.
- ***Learners have control*** over topics for inquiry and the learning processes, drawing on their rich experiences as resources for learning.
- A key feature of dialogical teaching is the use of ***authentic*** problems or issues which learners select, thus giving them some control over the learning processes and design of the spaces of learning.

Key characteristics of dialogical inquiry are:
(see Figures 1 & 2)

- Learners are frequently involved in collaborative meaning making;
- Learners are exposed to (e.g. sharing of peer experiences, experiences of others (e.g. supervisors, 'experts', customers, clients, etc.) and encouraged to consider a range of perspectives, and ideas to help them understand different theoretical perspectives and approaches, processes, etc.; and
- Learners choose their topic of inquiry. This ensures it is relevant and meaningful to them, and that it is authentic.

For a full explanation of the dialogical inquiry and the research behind it, see:
Bound, H. Tan S.C., Chow, A., Wang, X. & Chuen, K. A. (2017). Dialogical teaching: Investigating awareness of inquiry and knowledge co-construction among adult learners engaged in dialogic inquiry and knowledge (co)construction. Singapore: Institute for Adult Learning.

Figure 1:
Comparing dialogical inquiry with monologic teaching

Dialogical Inquiry

Monologic Teaching

How is the dialogical inquiry approach different from other approaches?

You may well be wondering, OK so exactly how is this approach any different to say constructivist approaches or more traditional approaches?

More on this later, but for now, Figure 1 diagrammatically represents some of the major differences between the dialogical inquiry approach and commonly used approaches (monologic teaching).

What is dialogical inquiry?

Through repeated opportunities to engage (much like Bruner's spiral curriculum) that leads to co- constructing and building of knowledge, learners develop deep understanding of important concepts, of how to put this knowledge to work in real situations. In the process, learners develop their learning to learn (meta-cognitive) capabilities and further develop their professional identities (see Figure 2). In this section we briefly consider each of the elements in the Model of Dialogic Inquiry (MDI), (see Figure 2).

Experience of learning

Experience of learning refers to learners solving authentic problems and/or inquiring into authentic issues.

There is a considerable body of research that highlights the importance and value of designing learning that is authentic .

(Herrington & Oliver, 2000; Bound, Chia & Karmel, 2016).

So this means the materials, questions, issues learners work with come from real world problems. The following needs to be built into the design and facilitation of the learning experience, where learners:

Share appropriate experiences (anecdotes, stories)

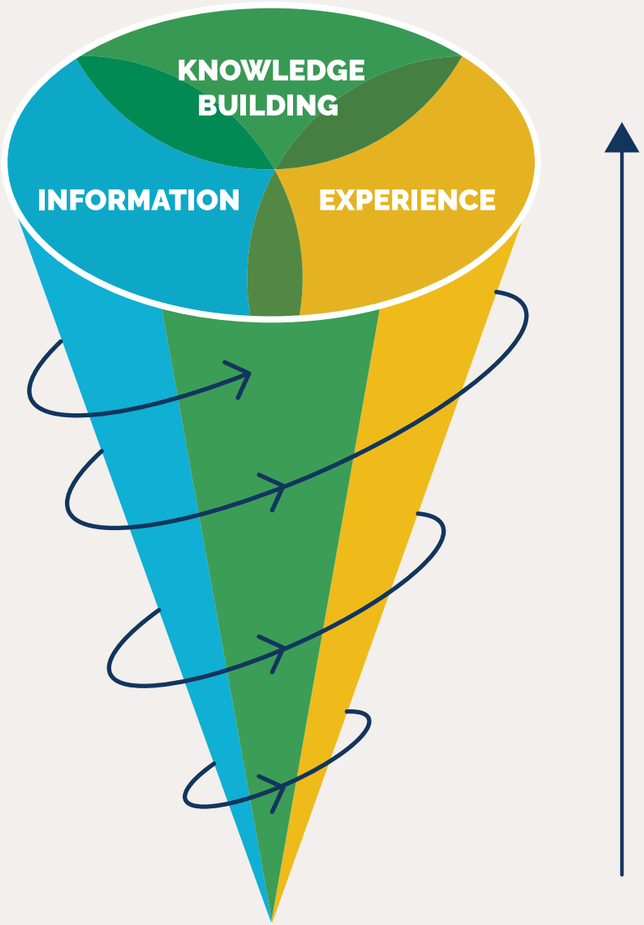
Examine and ask critical questions of the sharing

Explore the implications of these experiences in relation to key ideas

Distil key ideas from trigger materials

Pose questions that offer critique (a form of inquiry)

Figure 2:
Dialogical Inquiry Model



Multiple iterations and opportunities for dialogic inquiry

Deepening of understanding at individual and group level

Metacognition

Changes identities

Information – Multiple Voices and Perspectives

This refers to the 'voices' and perspectives of all learners and of the educators being equally valued.

There is greater sharing of 'power' by the educator. With this sharing of power, responsibility for learning is handed to the learners. For example, learners' personal experience (at workplace or other contexts) are valued as legitimate sources of information; learners are encouraged to introduce other materials they deem relevant to the discussion. Hearing and considering different perspectives is critically important for knowledge building and co-construction. An example of sharing 'the power' is to empower groups to take turns in leading discussion, and highlight interesting and valuable ideas from the learners.

Developing trust in each other to openly share information and resources may start slowly but as learners realise the necessity for and value of such sharing, they become increasingly open and share deeply. Learners also become aware that questioning is important in driving their discussion, and therefore they need to be active in posing their questions. As much as anything it is learners' questions that nudge them towards deeper exploration of the issue or concept being discussed.

Knowledge Building

Shared control and meaning making

Multiple voices and perspectives, and shared responsibilities are essential for knowledge building. Table 1 sets out the key principles of knowledge building and knowledge building practices.

Table 1:
Knowledge Building

Idea-centric Approach

Principles	Examples of Initial Approaches to Guide the Students
Real ideas, authentic problem *Engage students in inquiry related to problems that arise from their effort to understand the world.*	Trigger students' curiosity and interest in a topic and help them to generate inquiry questions.
Improvable ideas *Treat all ideas as improve-able.*	From the students' discourse, show the students a few examples of good ideas and to think of ways to improve the ideas further. Explicitly talk about respecting one another's ideas.
Idea diversity *It is good to identify ideas that are related and to have a variety of ideas that approach the same problem from different perspectives.*	Highlight examples of ideas that are different because of different perspectives or different ways of approaching the same inquiry problem. Identify the values of how these differences enrich the way we think about an issue or approach a problem.
Rise above *The aim is for students to be able to integrate ideas, to synthesize new ideas, or to use higher level principles or theory in explanation.*	Demonstrate to students how different ideas can be integrated to become a better idea; how to go beyond listing discrete facts and pieces of information to understanding a topic or a problem from a higher level principle or theory. Concept maps can be a useful tool to assist this process.

Knowledge Building Practices

Principles	Examples of Initial Approaches to Guide the Students
Authoritative sources of knowledge *Students should make meaning of authoritative sources of knowledge, not just acquiring the knowledge, but also to use them for the inquiry.*	Provide students with selected materials for them to engage in meaning making. Highlight how to assess the information critically for accuracy, how to interpret the meaning of the information, and how to use relevant information towards the goal of the inquiry.
Knowledge-building discourse *Students should engage in productive talks that focus on active listening and building on one another's ideas, rather than competing to win an argument.*	Show examples of good and productive talks and get students to apply them mindfully. Teach students how to negotiate differences. Contrast productive talks with talks that are competitive, disputation in nature, or those that are of simple agreement or disagreement without providing reasons.
Transformative embedded assessment *Assessment is not a separate activity. We can integrate assessment for learning and assessment as learning seamlessly in the process of knowledge building; encourage self-assessment.*	Engage students in discussing the criteria for assessment. Get students to assess their own work. In this way, assessment is part of the learning process.
Symmetric knowledge advancement *Recognize different expertise among students; having them take turns to lead and contribute will eventually benefit everyone.*	Help students to identify different expertise and strengths among themselves and encourage them to take turn to help one another. Increase students' awareness that we benefit and learn in the process of teaching others. Teach the students about collaborative strategies.

Table 1:
Knowledge Building

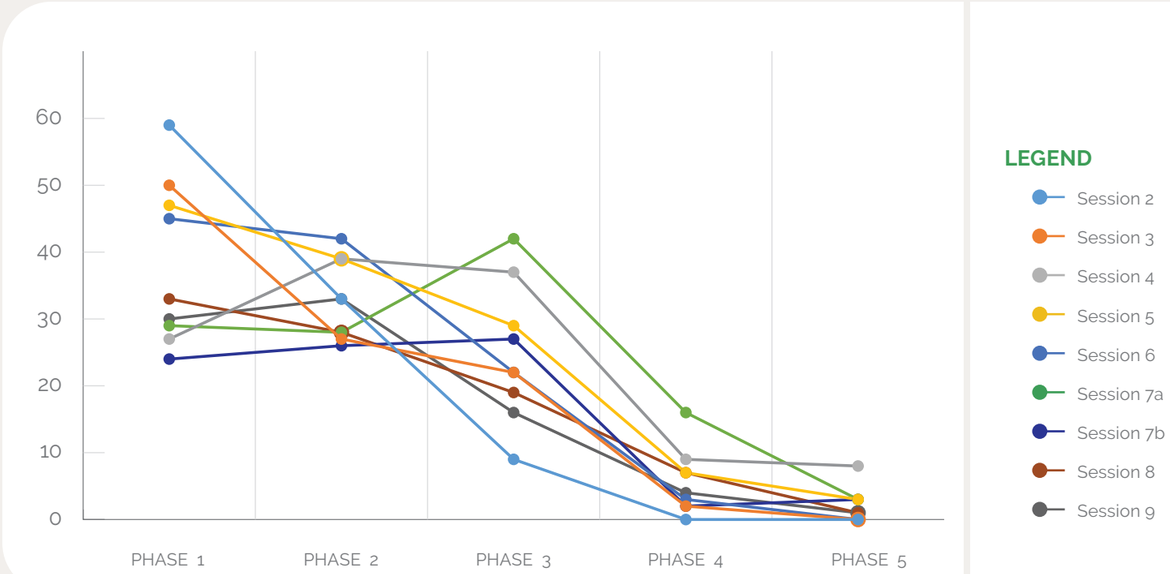
Develop Knowledge-Building Capacity

Principles	Examples of Initial Approaches to Guide the Students
Pervasive knowledge building *Develop knowledge-building practice as a habit of mind to be applied across various learning contexts and subjects, not just an ad hoc application.*	Use knowledge-building approach consistently, regularly and frequently throughout the course.
Democratizing knowledge *All students have the right to contribute in knowledge building.*	Emphasise that every student has the right (and responsibility) to participate and contribute. Set class rules about respecting every participant. Provide opportunities (online and face-to-face) for students who are less confident to contribute.
Collective cognitive responsibility *Develop in students the attitude that everyone has the responsibility in advancing the collective knowledge to the benefit of the community.*	Give recognition for positive group behaviours. Provide opportunities for students to create something as a whole group or class (e.g., group portfolio and group taking turns to lead discussion).
Epistemic agency *Help students develop the ownership of learning and autonomy in doing knowledge building.*	Let the students know that their ideas matter; find opportunities to highlight good ideas contributed by the students. Provide opportunities to show autonomy in their learning. Encourage students to show autonomy by sharing relevant resources or initiating new inquiry.

Experience of learning

The spiral in Figure 2 illustrates the provision of multiple opportunities for learners to share information, experience and build knowledge. When the researchers (Bound, et al, 2017) analysed the discussion of learners using the Model of Dialogical Inquiry, we found that learners spent most time to least time as follows:

Figure 3:
Phases of Knowledge Building (KB)



Phase 1
Sharing or comparing of information

Phase 2
Discovery of dissonance or gaps in understanding the inconsistency among ideas, concepts, or statements

Phase 3
Negotiation of meaning or co-construction of knowledge

Phase 4
Testing and modification of proposed synthesis or co-construction

Phase 5
Agreement or applications of newly constructed knowledge

Without time for sustained experience, the students might not reap the benefits of this approach of learning. In other words, do not be alarmed that so much time seems to be spent sharing anecdotes and stories. However, to move beyond sharing anecdotal experiences, other ideas, and perspectives must be introduced in ways that learners can critique them. If assessment is part of the course, then design of the assessment also plays a critical role; assessment needs to be activity(ies) that in some way addresses an authentic issue/ problem/ questions. This means that the issue each learner addresses will be somewhat different (as everyone comes from different contexts), but what is assessed (e.g. ability to critique, to develop a solution) is the same. Assessing the quality of discussion and idea generation can also be an assessment criteria.

Remember **ALL** learners, whatever their educational background, are more than capable of generating ideas when given the power, time, resources and the expectation.

As educators, our role is to enable learners to thrive in the conditions they find themselves in, which in the current context is constantly changing and dynamic.

As global trends, technology and evolving forms of production and occupational and organisational practices are always changing, educators have to constantly improve on and/or change their own practices to meet changing needs.

How is dialogical inquiry different from other approaches?

The dialogical approach is perhaps one of the most powerful in enabling learners to meet changing needs – which is important to develop future-oriented learners. In fact, learners have reported that this approach enables them to:

Deepen and expand their understanding

Deepen collaborative capabilities through sharing across and within groups

Experience surprising exposure to a diverse range of perspectives

Become more inquisitive and develop an ability to critique

Become aware of their views, why they hold these views and develop an ability to question and critique these views

Develop ideas and innovations to meet learners and /or workplace needs.

See Table 1 for a brief explanation of differences between the dialogical inquiry approach and what the literature, calls monological approaches. Note that the Table broadly compares differnet approaches.

Table 2:
Comparing dialogical inquiry approaches with monologic teaching

	Dialogical inquiry	Monologic Teaching
Exposure to authentic issues/problems, tasks	Learners **actively engage** with **authentic** issues, problems, tasks that reflect the complexities of real work and occupational practices.	Learners are shown skills or how to resolve a "typical" issue or problem Educator focuses on contrived tasks and recall that mostly provide indirect evidence of performance.
Whose voice matters?	Learners' voices matter. Learners are actively engaged in dialogue.	Educator's voice matters. Learners are passive listeners.
Exposure to multiple perspectives	Learners actively engage in contributing their perspective, experiences, questions. They are responsible for seeking out different perspectives. This is important in improving their ideas.	Learners listen to and may discuss in groups, key ideas put forward by the educator.

Table 2:
Comparing dialogical inquiry approaches with monologic teaching

	Dialogical inquiry	Monologic Teaching
Who does the work of making-meaning?	Learners **actively engage** in **meaning-making** and in co-constructing knowledge. Learners are responsible for their own meaning-making and improving their ideas.	The educator does the work involved in making meaning. Learners reproduce the educator's meaning making.
Who decides on content and process?	Learners give **active input** into content and process. Learners select the authentic issues etc. they work on. Group discussion is managed by learners. The educator provides the strcuture within which decisions are made, including ways of thinking about contents. Contents can be driven by both educators and learners.	Decisions about content, what is discussed and how, are decided by the educator.
How are learning to learn capabilities developed? *(includes meta-cognition, critical thinking,meta-thinking, inquiry processes, etc.).*	Learners do the work of meaning-making through learning about and doing critical questioning, collecting and analysing evidence to support or negate ideas, explore different perspectives, critique claims, and offering feedback to peers. Learners also make judgements about the quality of the performance of themselves and their peers.These processes contribute to learning to learn capabilities.	The educator does the work of meaning-making. Learners are expected to reproduce knowledge in tests, exams, or quizzes.

Dialogic Inquiry Tools

A few tools are provided here that you might want to try out to start building capability in using the dialogic inquiry approach. Using the approach is not so easy, but with experimentation and time, we all build our capability in the differnet approaches.

However, important to keep in mind that dialogical teaching requires a holistic approach rather than the use of a series of tools. By holistic approach, we mean that you truly believe that your learners are active sense makers of their world; you believe in them to the extent that you are willing to share your power (or some of it!) as an educator, with them. Try also to work with authentic issues and problems that learners bring to the table. It makes for a powerful approach to integrate theory and practice.

Concept Maps

Getting learners individually and in groups, to draw – either freehand or using the many available online tools – concept maps. This is to help learners:

Link different ideas

Expand on different aspects of an idea

Discuss with peers relationships between ideas, assisting in meaning making which contributes to co-construction of knowledge

Clarify their thinking

A student studying workplace learning – we shall call him Urijah - comments on the value of concept mapping:

When I start to read, I have to think how does this information fit into the whole picture, and so instead of just merely copying sentences after sentences - accumulating notes - I have to then think what is the theme that I'm going to put - how do they link to the other information...

So all these helps me to formulate the ideas better and clearer in my head, so it gives me an overall better picture of the whole...what the whole article is or paper is about. .

(Urijah, in Bound et al., 2019 p. 57)

The concept map drawn by Neil (a pseudonymn), (see Figure 4) in the same class as Urijah, showed many links plus inclusion of maro and micro ideas indicating that Neil has pulled together many of the concepts that relate to different aspects of workplace learning. This contributed to Neil doing particulary well in this unit of study.

Figure 4:
Neil's Concept Map

When learners are asked to share their own concept map and to then create a shared concept map, the process of creating a shared concept map becomes a means to listen to the ideas and perspectives of others, to clarify, to pose questions, to make additional links and to think about other aspects they had not previously thought of. This process contributes to the rethinking of their own ideas to improve on them. Students also enjoy comparing early concept maps with their later concept maps. It reaffirms learner's growth and understanding, and provides a clear indication of how far they have come.

To summarise, concept maps can be drawn individually and then shared for discussion and improvement, contributing to the development of a group concept map. The group concept map requires learners to articulate their understandings and make further connections, and thus improve their ideas and understandings.

Educators' Questioning Techniques

To encourage learner's development and use of posing and addressing critical questions – be it in whole class discussions, small groups discussions, one-on-one discussions with peers, discussion between educator and learner – educators must have an open stance. That is, be open to challenge and debate, to allow for tentativeness in responses, thinking aloud, or posing possibilities. This is very different from taking learners through a set of questions that focus on a particular idea or persepctive.

Questioning is **NOT** about checking what learners know (or do not know); it is about eliciting what learners think, encouraging elaboration and thus requiring higher order thinking (Chan, 2006). Responses to learner's thinking needs to be neutral, not judgmental.

Specific questioning techniques include:

When learners pose questions, throw it back to the class or group (resist answering the question immediately. If an answer is offered too early, the conversation and exploration of deeper meaning and understanding could be closed off). Throwing back the question to the group, positions learners as sources of knowledge, valuing their contributions;

Get comfortable with wait time for responses to your OPEN questions. If there is no response, then move students into pairs or threes, to discuss, then have these small groups share;

If learner responses indicate limited understanding of a concept, idea, or procedure, instead of saying it is wrong, repose the question in a way that challenges learners' current understanding

Encourage learners to build on the responses of others by posing the question, “what do others think?” (of a student response that may be problematic, or demonstrate deep understanding or interesting, different perspectives); encourage learners to come and ‘draw’ their ideas on the white board; and

Get learners moving, for example, by asking them to show their beliefs or perspectives by standing along a continuum or matrix that presents different persepctives, ask learners to talk to those next to them so that they arrange themselves in relation to beliefs or experiences of others.

Ask those standing in particular spaces to share why they stand there – a few such responses generally start a conversation and raise issues that need exploring.

These techniques contribute to a sense of trust between educator and learners, as Olivia, a learner experiencing the dialogical inquiry approach, commented:

What surprises me…she [the course lecturer] trusted all…she, trusted us a lot. Like just give us the reading, and then… because previous lecturer when they do the Week 1 reading, they will test. Yeah, but she didn’t [laugh]. So I was like, eh, how come she didn’t, she trust us so much.

(Olivia, in Bound et al, 2019)

Bessie, a learner from another class where the educator was using the same approach, notes this responsibility for facilitation of discussions where instead of discussion being “facilitated by the professor” (Bessie), students facilitate their own discussions (Bound, et al., 2019).

Developing learners’ critical questioning capabilities

Modeling critical questioning is a good place to begin in developing learners’ ability to pose and use critical questioning so that it becomes inate. The strategies discussed in this section are also important to use; learners will pick up some of these techniques and use them in group and whole class discussions.

An additional strategy is to provide learners with a set of critical questions that can be used universally. Once learners begin to use these regularly, they soon internalise them and cease to need to have the questions in front of them. Examples of two sets are given in Table 2. You can develop your own so that the questions are most appropriate to the content, learners and intended learning outcomes.

Table 3:
Question sets to consider and mix and match

From Tan & Seah (2011)	From Stack (2007)
• Why is XXXX important (or the most important) of all? • Share your evidence for why you think XXX • How do you know XXX? • What do you mean by XXX? • How does XXX solve the problem?	• **Is it intelligible?** *(What further explanations or experiences can help me understand it?)* • **Is it plausible?** *(How is it convincing, logical, relevant, trustworthy, fit into a bigger picture? What might be the flaws or imitations?)* • **Is it useful?** *(How does it have greater explanatory or predictive power over other models? How does it fit into other ways of explaining the world? How is it significant?)* • **Is it believable?** *(What are my underlying beliefs and values about the world and how do these new ideas interact with these?)*

Or, another set of questions might be:

What am I not considering?

What new information do I need?

In what ways am I trying new ways of feeling, thinking or behaving?

How might I integrate these new ways into my life, my practice?

(from Stack & Bound, 2012)

Such questions, can be used in and across different disciplines. Stack (2007) used her questions with physics students, and Bound, et al. (2019) used similar questions from those listed above for developing educators. Learners will also develop their own set of questions – such as was the case in the Stack and Bound (2012) example. Further suggestions are also discussed in the next section on reflection.

Reflection

Asking learners to reflect on their learning is an oft used pedagogical strategy.

When used well, it can be a powerful tool in contributing to challenging long held assumptions, and getting learners to rethink current approaches. However, when used, for example, as a requirement for learners to keep a reflective journal, then they simply complete it at the last minute and the level of reflection is low – what we have called descriptive. Some learners take to reflecting readily and to others it is a foreign land where they do not know how to speak the language and navigate the terrain. So, for reflection to be effective it needs to be taught and to be well designed.

Table 3 provides an explanation of different levels of reflection. It can be used as a tool for the educator to clarify what to look for in reflective accounts and be shared with learners to also provide them with a transparent set of criteria and standard of performance to aim for.

Table 4:
Levels of reflective activity
From Bound et al, (2017)

Level of Reflection	Features
Descriptive	Descriptive rather than reflective piece with little or no explanation / analysis of learner's learning journey or what has been learnt
Partially Reflective	Focus on **two or less** of the following 1. Awareness of own assumptions and/or how one learns 2. Reflecting on own assumptions (whwy it did/did not change) and/or how one learns 3. Including other ways of thinking (i.e. considering peer's perspectives, identifying own limitations) 4. Seeking to reveal and relate to values, paradigms & culture
Holistically Reflective	Focus on **more than two** of the following 1. Awareness of own assumptions and/or how one learns 2. Reflecting on own assumptions (why it did/did not change) and/or how one learns 3. Including other ways of thinking (i.e. taking peer's perspectives, identifying limitations) 4. Seeking to reveal and relate to values, paradigms & culture
Meta-cognitive	Focus on **more than two** of the following plus **must include point 5**: 1. Awareness of own assumptions and/or how one learns 2. Reflecting on own assumptions (why it did/did not change) and/or how one learns 3. Including other ways of thinking (i.e. taking peer's perspectives, identifying limitations) 4. Seeking to reveal and relate to values, paradigms & culture 5. Awareness of metacognitive processes and meta-thinking

A strategy for encouraging learners to identify and question their assumptions is to require learners to collect artefacts over the period of the course or program (e.g. concept maps, photos of activities, observations), and use these as 'data' for analysing what has changed in their thinking, understanding and perhaps perspectives. It is recommended that the educator discuss with the class and/or individuals what these artefacts might be and what is the best fit for the specific purpose.

Some groups will need considerable scaffolding for this activity. Their capabilities in doing this can be built up over several units or courses, where greater depth is required with each iteration. Scaffolding might include modelling the process; asking learners to share their artefacts in groups and discuss what changes others see. These type of activities help provide the language of reflection, which may need to be explictily pointed out.

Educators can start the process quite simply by asking learners, "What are you thinking? How are you thinking about that?"

Avoid being judgmental – just be interested in how they are creating meaning. Encourage learners to notice their thinking patterns and their preferred ways of learning or doing things. A series of questions educators can model and also encourage learners to ask each other might include:

- What are you thinking?
- What do you know, not know, need to know?
- How are you thinking about this?
- What questions are you asking and why are they valuable?

Or, another set of questions might be:

What are we noticing that is going on in this space together?

What do we value in this?

What signals are we picking up?

What are we listening into, tuning into and why?

What are the emerging patterns?

How can we improve our ethical attention to this process and each other?

How can we build on these?

The Map of Dialogical Inquiry

– a tool for deepening meta-cognition

Another strategy for encouraging meta-cogntition is to use specific tools or heuristics that help make visible different kinds of thinking, such as the Map of dialogical inquiry. For further information on the Map see:

Tools for Re-imagining Learning: Dialogical Inquiry Model

The diaogical inquiry map has eight aspects – see Figure 5. Learners typically have well trodden paths, preferring and using a selected few aspects. Using as many aspects of the Map as possible is indicative of a good inquiry.

Figure 6 shows how one student began with limited use of a number of aspects, but over time and beng exposed to pedaogogies such as those shared in this Guide, expanded into using many aspects fully. Note that for this learner, imagining is not a strong aspect at this point in time. Learners can use this as data – as discussed above – to relfect on how they have grown and why this might be so.

Figure 5:
Map of dialogical inquiry

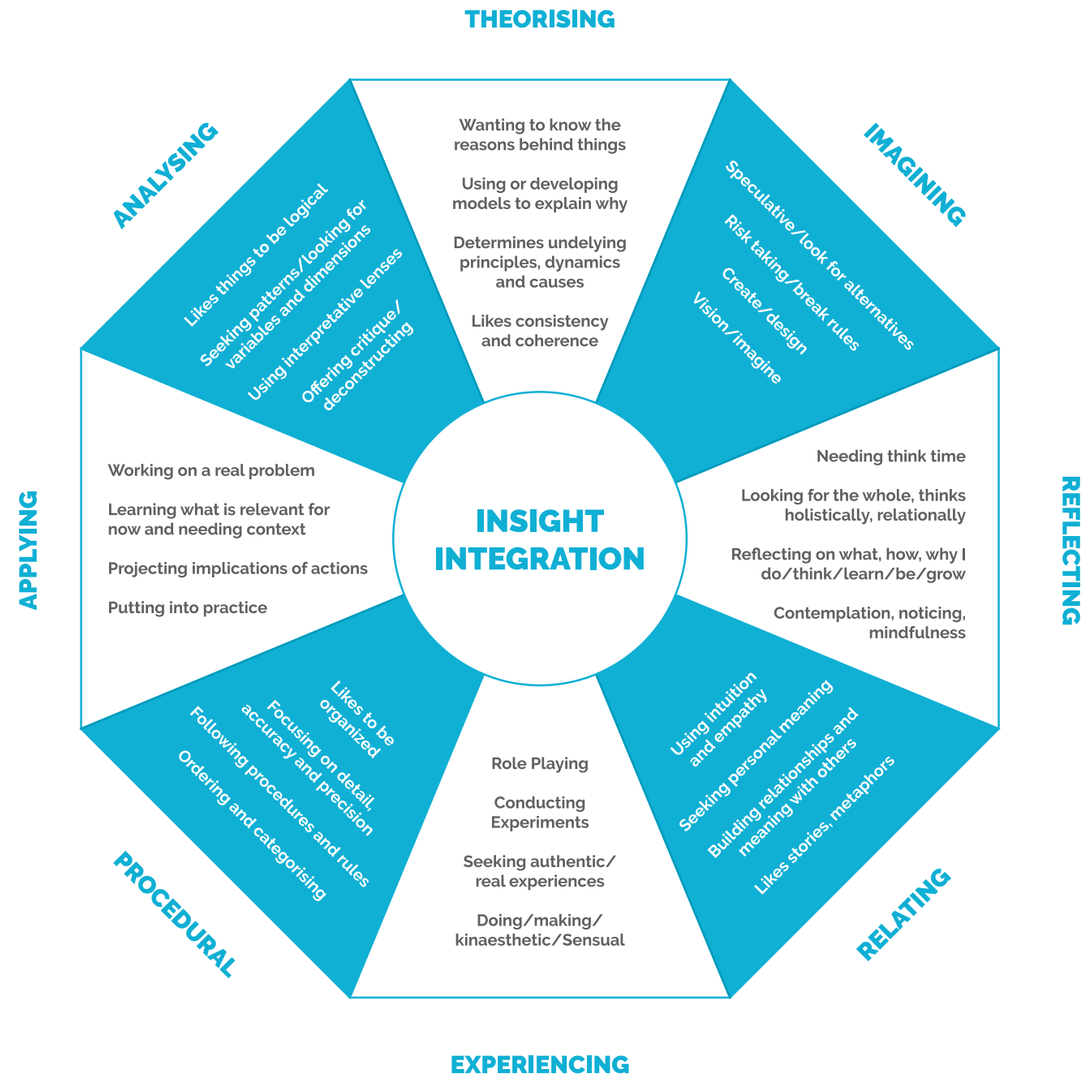


Figure 6:
A learner's spider Map of dialogical inquiry over time

Further explanation of meta-cognition can be found here:

Tools for Re-imagining Learning
Understanding Meta-cognition

How does the dialogic inquiry approach differ from good constructivist teaching approaches?

A simple response to this question is to ask you, the reader, where you would place yourself along the continuum below? Constructivist teaching starts approximately half way along the continuum, moving towards dialogic. Some key differences are that in dialogic teaching, learners:

Are engaged in using inquiry

Pose critical questions

Are exposed to multiple perspectives

A source of knowledge in themselves

Pose questions that offer critique (a form of inquiry)

In collaborative, constructivist approaches, learners are engaged in dialogue, but the control is still very much in the hands of the educator. Issues of control and trust, as discussed earlier are key differences.

Figure 7:
Monologic-dialogic continuum

Monologic

- ***Continuous lecturing at learners***
- ***Lecturing + asking closed questions &/or questions that learners have to reproduce a response***
- ***Lecturing interspersed with open questions. Discussion is between Educator & learner's***
- ***Lecturing interspersed with group work. Report backs discussion mostly between educator & learners***
- ***Short lectures interspersed with group work & exchange between learners & learners & educator in report backs***
- ***Learners work with authentic problems, are posed challenges and as a result , learners engage in inquiry***
- ***Learners work with authentic problems learners choose the authentic problems learners engage in inquiry***
- ***Learners work with authentic problems learners choose the authentic problems learners engage in inquiry learners voice is valued as a source of knowledge building***

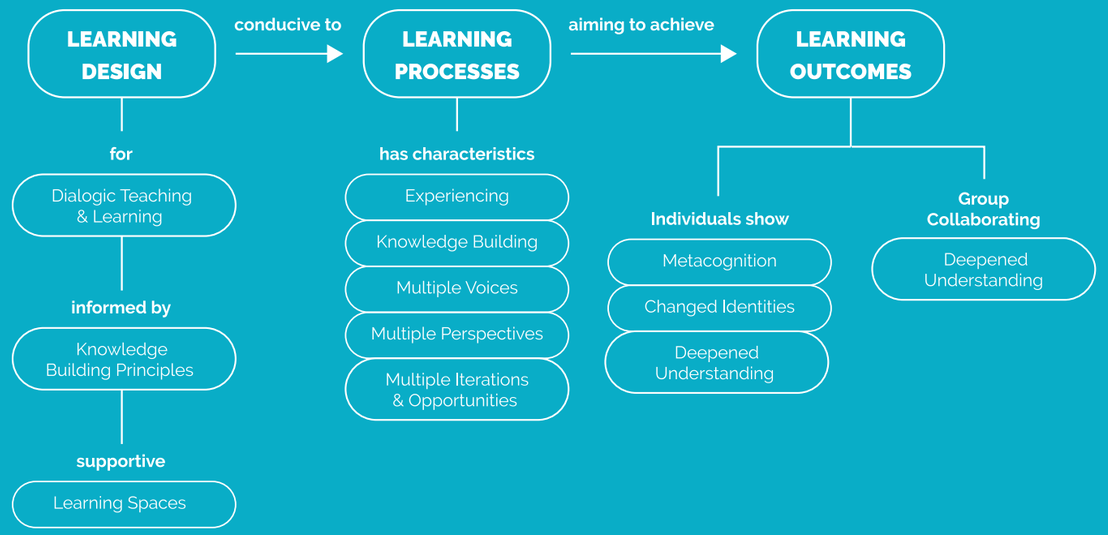
Dialogic

In Summary

This Guide has identified the characterisitcs of the dialogical inquiry approach, explained the dialogical inquiry model, shared some tools that can be used in implementing the dialogical inquiry approach, and finally asked educators to consider their beliefs about teaching and learning and if they are compatable with using the dialogical inquiry approach.

Figure 8 provides a final summary of this approach from design to learning processes to learning outcomes.

Figure 8:
Summarising the processes and outcomes of the dialogical inquiry process



The Researchers

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