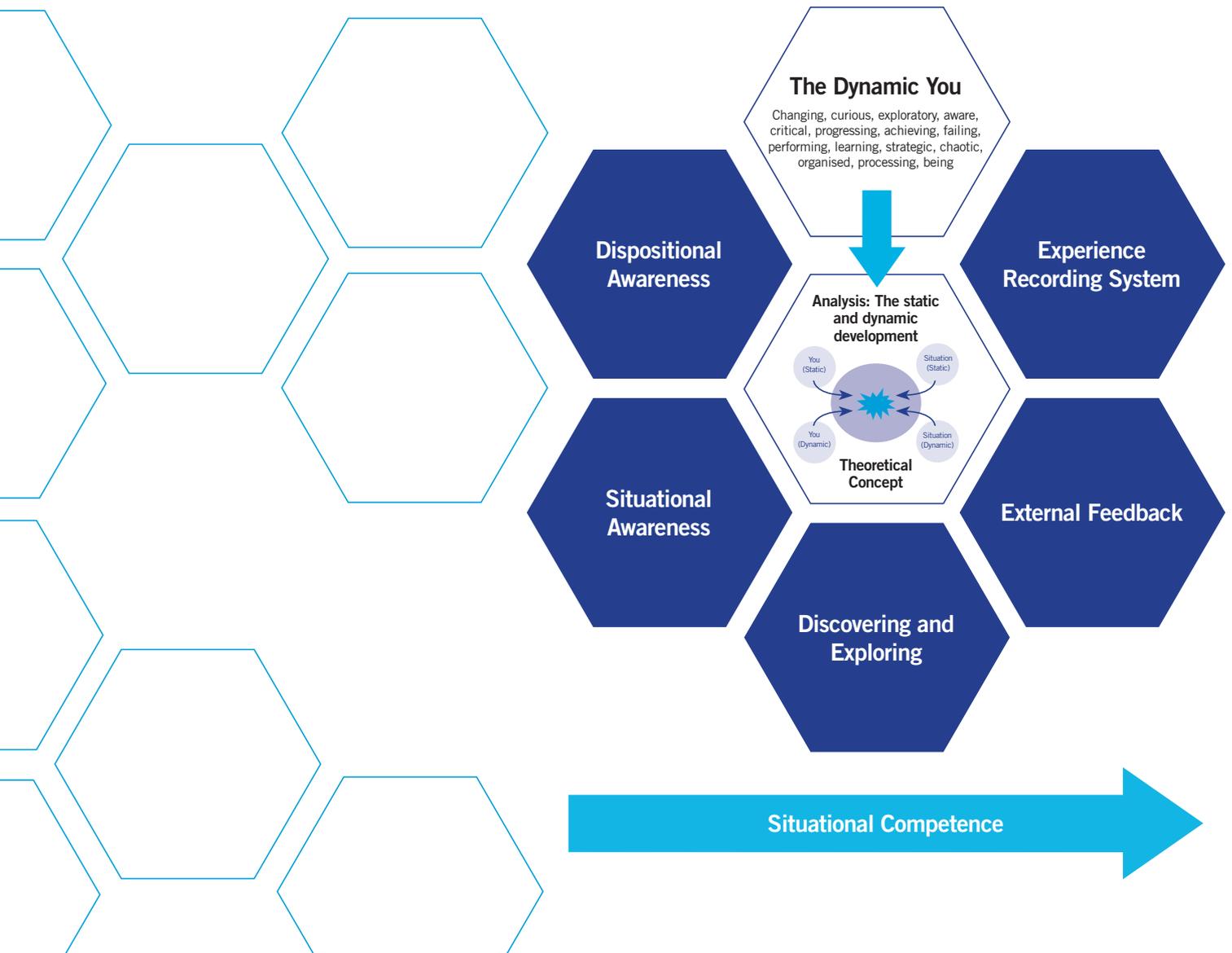




Dynamic Development

A new approach for the personal and professional development of researchers

Practitioner Guide





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Executive Summary

We would like researchers to actively engage with their personal and professional development. We suggest here that the current approach to researcher development inherently fosters passive engagement.

We have developed and present in this guide a new approach that we believe does inherently support active engagement with personal and professional development. We put the researcher at the heart of their own development; a dynamic individual, learning, developing, progressing in their research, their career and as an individual.

Uniquely, we propose the 'teaching' of a personal and professional development model such that researchers can grow their understanding of their own development autonomously and with the aim of life-long sustainability. As practitioners our role is to support and nurture that autonomy.

Our model has 6 key elements; dispositional awareness; situational awareness; external feedback; discovering and exploring; experience recording; and the new static and dynamic (SDD) theoretical conceptualisation of 'skills' as combinations of static and dynamic components. And it is support for developing and managing the dynamic components that we particularly suggest is under developed in passive approaches to development.

The SDD element provides a new tool for the individual to explore their personal and professional development, pulling together their experiences and learning from the full six element model. The tool supports the researcher in observing, analysing, recognising and reflecting upon their personal and professional development and what is right for them.

The model works to build situational competencies for the individual. In building situational competencies we reject the 'deficit' model of common needs analysis professional development approaches taking a more positive and engaging approach. We look for researchers to understand, articulate and be proud of the situational competencies they already have and to look to build on those rather than approaching their development from a perspective of what is missing.

We provide the tools for them to consider the situational competencies they have and those they want to gain, in the context of what they want to achieve, across the wide range of employment opportunities open to them. In 'teaching' a development model we also support researchers in being aware and adaptable to employment change going in to the future. The world is not 'static'. It is increasingly 'dynamic'. What 'employability' means today will be different from tomorrow.

The Dynamic Development model is put forward as a better development model for our increasingly dynamic world compared with current approaches. In addition, in developing and presenting our ideas we challenge the current language of skills as consisting of commonly ill-defined terms, none of which satisfactorily encapsulate meaning or understanding or provide an engaging motivator for participation. And we offer alternatives.

In summary, we present Dynamic Development as an active approach to the personal and professional development of researchers, designed for an increasingly dynamic world, countering what we have characterised as our 'passive' current approaches. In doing so, we also hope this will encourage others to develop and present additional active approaches.

A. Introduction and context

The Dynamic Development Model is a new approach for personal and professional development, widely applicable, but here contextualised to the development of researchers.

This guide is aimed at enabling professional development practitioners in taking a Dynamic Development pedagogical approach in their work. In the following sections the model is presented, firstly explaining the background to the emergence of the new approach and then in detail the pedagogy itself with the Static and Dynamic Development theoretical concept at its heart, supported by the five other aspects that make up the Dynamic Development Model. We discuss what this means for practitioners and also provide useful resources to aid practitioners in understanding how Dynamic Development can be implemented.

Finally, in presenting this new model we also aim to challenge current thought and practice in personal and professional development, encouraging new ideas and innovations.

The 'catalyst' for a new approach¹

The UK has stood out internationally in terms of the investment made by government in the skills development of researchers in what came to be known as the 'Robert's' agenda². Other nations have also had an increasing interest in skills development of researchers notably in Australia³ but also across Europe signified by the European HR Excellence in Research award⁴, for example. However, in a UK post-Roberts era⁵, funding for provision can appear 'challenged' in an environment where demand continues. In addition, increasingly, individualised demands for postgraduate researcher personal and professional development from funders of research are coupled with institutional strategies for ever increasing numbers of postgraduate researchers.

For practitioners in the field of the personal and professional development of researchers it is, of course, no bad thing to be in an area where there is significant, and it appears, increasing demand. However, many of our institutional or pedagogical practices have traditionally been balanced toward face to face models of provision which can be relatively resource intensive. Given the context described above it seems timely to question whether our current models for researcher training and development are realistically scalable and sustainable. Also, the context may have led to

a questioning of current pedagogy but in addition, why not consider whether there is a better approach for personal and professional development anyway?

Returning to delivery models weighted toward 'face to face' provision, is simply moving more online, really the answer? What if we 'flip' things around and place greater emphasis on developing the skills in researchers to develop themselves now and in to the future, rather than offering programmes of activity targeted at developing each of many specific skills such as 'leadership' or 'presentation' etc.? Any current skills list will inevitably become outdated. Does our current approach to development prepare researchers for ever changing alternative futures?

Do our current programmes of activity engender 'passive' development for the individual? If we 'flip' will we encourage active, sustainable, engagement with personal and professional development? Development opportunities are out there for all of us all of the time, beyond a programme of face to face activity, online activity or any other opportunity a programme might offer. So how do we better 'tap-in' to that resource?

Attempting to address the many questions raised in this introduction is from where the concept described in the following arose. In addition, once a particular context, such as that above, has catalysed thought toward new approaches, inevitably further questions arise to also challenge the existing approach:

- **In general as practitioners, how do we support researchers to reach a depth of personal understanding as an individual, in any aspect of provision, particularly in a context of having an increasing volume of researchers to support? Could our work become increasingly superficial?**
- **How do we help people make much more of the development opportunity outside of our scheduled activity?**
- **How do we nurture or promote lifelong sustainable professional development when people leave and there is no longer a free institutional development program open to them?**
- **How do we enhance existing self-awareness in individuals?**
- **How do we enhance observation and situational awareness?**
- **How do we build on the dynamism that exists in an individual already?**

1. This section is based upon: Bromley, T., (2017) "From passive to active development; the Static and Dynamic Development (SDD) model", in Bromley, T. (Ed.), Vitae Occasional Papers Volume 4. A collection of papers from the Vitae Researcher Development International Conference, 12-13 September 2016, Manchester, UK, The Careers Research and Advisory Centre (CRAC) Limited, Cambridge, pp. 15 – 22, available at <https://www.vitae.ac.uk/vitae-publications/guides-briefings-and-information/vitae-occasional-papers-2016.pdf> (accessed 25th July 2018).

2. Funding for postgraduate and postdoctoral researcher personal and professional followed on from the recommendations of the report of Professor Sir Gareth Roberts to UK Government, 'SET for success; the supply of people with science, technology, engineering and mathematical skills', available at http://webarchive.nationalarchives.gov.uk/+http://www.hm-treasury.gov.uk/d/robertsreview_introch1.pdf (accessed 30th March 2017).

3. For example as specified in the, "Australian Qualifications Framework: specification for the doctoral degree", available at http://www.aqf.edu.au/wp-content/uploads/2013/05/14AQF_Doctoral-Degree.pdf (Accessed 30th March 2017)

4. See <https://www.vitae.ac.uk/policy/hr-excellence-in-research> (accessed 18th May 2017).

5. The 'Robert's' UK government skills funding mechanism ceased in 2011.

A. Introduction and context

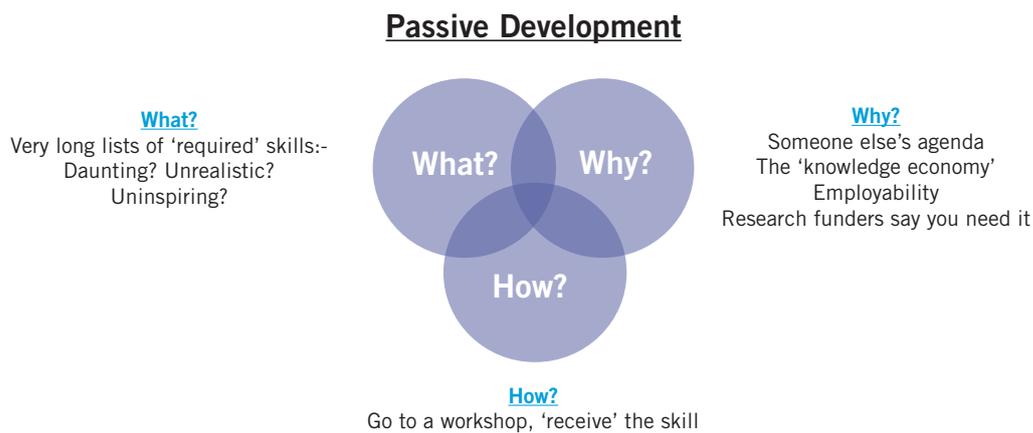


Figure 1: Posited caricaturisation of the current professional development pedagogical model from the individual participant's perspective

A challenge to the current model for researcher development

It is proposed that current and long standing practice in the professional development sector in HE engenders passive engagement from participants. The 'Dynamic Development' approach acts to build active, sustainable, life-long, independence in professional development for the individual. Figure 1, provides a 'caricaturisation' of the current professional development model from an individual's perspective where:

- we tell people, 'You need transferable skills, soft skills, hard skills, employability skills etc...' and many other ill-defined terms for skills, none of which satisfactorily encapsulate meaning or understanding or provide an engaging motivator for participating.
- the skills 'you need' are often presented in long lists usually serving little purpose other than to demoralise in your inadequacy over the superiority of those seemingly with the skills.
- that you actually have skills, doesn't seem to be readily acknowledged
- the reasons as to why you need these skills seem to be anything other than to do with you. 'It's for the knowledge economy', 'It's so you will be globally competitive' (whether you want to be or not), 'It's what employers want'. Etc.. What about what you want!?
- we will prescribe a programme of activity for you. You will attend and receive those skills from us. You will henceforth be cured skilled.

Further, the language of skills does not sit well within the academic research community within which the development of researchers is situated. Although researchers go in to a broad range of careers, academia is still a major stakeholder. For example, in her research on conceptions of researcher development in the post-Roberts period, Soubes (2017)⁶ proposed the use of the sociological concept of acquiring and accumulating "capital" as an alternative to that of skills in supporting researchers to navigate the academic research landscape. We explore 'capital'⁷ further in part C of this guide. We also explore further language alternatives as we progress through this practitioner guide.

Finally, the current development model we caricature as passive, has always had an 'elephant in the corner of the room' associated with it namely, you can choose not to engage with any skills development activity whatsoever and you may well be... absolutely fine.

That's a problem for skills development. Or is it?

As lead author of this practitioner guide I come from a distant time when skills terminology (soft/transferable/employability etc.) may well have been in use. However, I managed to successfully complete a degree and PhD yet I have no recollection of skills ever being mentioned. Even more amazingly, following my PhD, I became employed! And in a good job within the research and development department of a large company. I did this without ever having any employability skills training. I must be a genius! I think not.

So what is the problem here? What I am missing? We seem not to need any form of skills training? Agreed?

6. Soubes, S., (2017), Postdoctoral researcher development in the sciences: a Bourdieusian analysis, EdD thesis, University of Sheffield, available at <http://etheses.whiterose.ac.uk/18296/> (accessed 25th July 2018).

7. The French sociologist Pierre Bourdieu developed a number of key concepts (e.g. capital, habitus, field). Bourdieu, P. (2005). Habitus. In J. Hillier & E. Rooksby (Eds.), Habitus: a sense of place, 2nd ed., Farnham and Burlington: Ashgate pp. 43-53

Using my apparent ‘genius’ employability skills, I managed to get another job and returned to the higher education environment where I started to teach. It seemed to go well. Students learnt stuff and exams were passed (generally). It was suggested that I might register for the Postgraduate Certificate in Learning and Teaching in Higher Education. Not much point since I could clearly already teach, but you got a certificate and that seemed to be the way the profession was going. A bit of work, but nonetheless there was also the off chance I suppose I might learn something.

Now from the outset it was clear I did know something about teaching. I had picked up things along the way. What I knew started to be given names and to be put in to theoretical contexts. However, my ignorance and naivety was somewhat exposed. There are libraries full of books on pedagogical research I simply wasn’t aware of, leaders in education with challenging innovative ideas I never thought of, teaching methods I’d never seen that could inspire the students I’d been working with and allow me to achieve so much more etc...

So, referring back to the ‘elephant in the room’, I could pick up enough to survive and become employed on my own, by my own wit and intelligence. However, I didn’t know that gave me only, I’d say in the teaching example, about 10% of the knowledge, awareness and capability that I could have had. If I multiply all those 90% I was missing across communicating with people, managing people, leadership, mindfulness etc., etc., how much more could I have achieved?

Why did nobody point out there may be much I didn’t know? Why did I not think this way? Why did I view something like physics differently i.e. I had no lack of awareness that I was missing at least 90% of what I could know about physics!

Why did I not think I might be missing 90% when it comes to communicating with people? Where was my awareness? Where was my thinking? Where was my challenging? Why was I not taught any sort of model that would illustrate these things to me, help me be more aware, help me understand and analyse, help me develop?

I was still developing outside of any formalised development provision, but the notion of my personal or professional development wasn’t something I particularly recognised, understood, engaged with or built upon. In contemporary times the existence of what we caricature here as a passive development approach, is at least a step forward for general awareness of personal and professional development, but what about engagement? With an active

model of development (that also recognises and supports development outside of formalised provision) perhaps the elephant leaves the room?

Toward a new model for development: an ethos⁸

The Ethos of the Dynamic Development Model – where it comes from, what it means, why we should have it in the core of our practice.

In the previous sections we have aimed to express the challenges and issues as we see them relating to current practice in personal and professional development. We now begin to propose our model to address what we have raised.

Dynamic development thematically intersects with the adult learning experience described by Malcolm Knowles as ‘andragogy’ the science of adult learning⁹. Intersecting themes are contextualised here for professional development. Knowles initially noted that most adult teaching was based on pedagogy which specifically related to child learning.

This could be a contributory factor to the disconnection and condescension described by some researchers when describing their training experiences. Knowles says: ‘... in my estimation, the main reason why adult education has not achieved the impact on our civilization of which it is capable is that most teachers of adults have only known how to teach adults as if they were children.’¹⁰

Dynamic Development aligns with the stages in Knowles’s model of andragogy. He describes four stages in his concept: (1) adults are ‘self-directing’ and independent; (2) their life experience becomes a ‘resource for learning’; (3) learning is increasingly harnessed ‘for the development of social roles’; and, (4) there is immediacy of application, meaning that learning for problem solving takes over from the learning that in the child was more formally devoted to a subject area. This is evident for self-directing researchers whose work revolves around sorting issues that their research questions are designed to propagate.

For dynamic development we add to the precepts the proviso that learning for researchers is best delivered when it is allowed to evolve through an informal, collaborative facilitated process. The method is perhaps Socratic, with questions jointly formulated and answers shared and established until, through this iterative process, a way forward becomes evident to the participants. The goal can either be a plan of action, content for a presentation, text or practical project. It can be a formula, a philosophical statement or an agreed working method.

8. Lead author of this section: Richard Hinchcliffe

9. Knowles, M., S., Holton III, E. F., Swanson, R (2015), *The Adult Learner: The Definitive Classic in Adult Education and Human Resource Development*, (8th Edition), Routledge, Abingdon, UK.

10. Malcolm S. Knowles (1970), *The Modern Practice of Adult Education: From Pedagogy to Andragogy*, p. 53. Accessed 12/7/18: <https://www.nationalcollege.org.uk/cm-andragogy.pdf>

By sharing the learning task as a problem to be solved the participant's adult experience permits a more ready grasp of the significance of the learning because they can see its application to the problem they have agreed to participate in trying to solve.

Thus, if we are delivering a careers focussed session to researchers it makes sense to pose some research style questions that would help researchers apply themselves to problems relating to their careers. The key to this development is for facilitators to recognise it as 'process' and that it is a given for the participant, who as an adult learner, is assuming the shared responsibility for all outcomes, eventualities and learning experience.

In this involvement in conscious learning, attributes, competencies and behaviours, environmental contexts, constraints and situations are all part of learning discovery. It is, of course, a perpetual process as human beings learn all the time. The key, however, is for the adult learner/researcher to grasp the opportunity in the facilitated environment by becoming a committed partner in a knowledge seeking co-operative.

For the careers related session there would probably have to be a number of barriers – social, political and psychological - to go through before a proper focus can be achieved for researchers in the current HE climate. This is because of the now well-known mismatch between the number of researchers and the number of HE vacancies. This apparent paradox for some colleagues would be likely to create a degree of alienation which would need to be surmounted before any commitment to the learning would be possible.

However, a key difference with Dynamic Development, when compared to andragogy as described by Knowles, is that it does not need a facilitator¹¹ or 'change agent' as Knowles describes the teacher. It differs from andragogy and bypasses the formal authority structures that beset pedagogy by being a tool for individuals to use in the context of their own self-discovery.

In a world of increasing online self-help materials, books, resources and 'TED' style lectures the dynamic development model presents the individual with a second level of autonomy with which to explore their development needs.

Bromley (2017) states: 'an understanding of dynamic and static factors characteristic to the individual, combined with an analysis of the static and dynamic factors in a given situation, will aid an individual in the understanding of their own personal and professional development need.' Thus when an individual has

assessed the dynamic and static issues within the context of their learning needs they are then in a much better position to choose the learning resource, style and situation for them.

In the case of the self-directed careers related learning enquiry for instance, the individual will discover the static factors that may hinder their career ambitions should they wish to work in HE. Their enquiry may well also reveal however, the many situational competencies they possess that will enable a high achieving non-academic career alongside the great variety of employment possibilities.

Dynamic Development – the challenge of a new ethos

Researchers are expected to be independent learners and with the trend toward online convenience for individual learning needs there is a revolutionary growth in the self-educated. These two elements combine to create a greater expectation of educational independence and the need for researcher development to be conducted within the entirely different paradigm of andragogical dynamic development.

This requires us to put the learner at the centre of developmental practice and dispense with the orthodox arrangements where deeply embedded pedagogic practice continue to create assumptions in both participant and tutor. These learned behaviours can result in tutors being directive and participants being passive or of having a fear of the educational setting. As Knowles describes:

But even adults who overcome this barrier typically enter an educational activity expecting to be treated like children, and this expectation is frequently so strong that adult students often put pressure on their teachers to behave toward them in this way. Once a teacher puts adult students into a dependant role, however, (s)he is likely to experience a rising resistance and resentment.¹²

At the heart of the ethos for dynamic development therefore, is the maxim that the participant has autonomy over the means of learning. Given the learned expectations of pedagogical practice however, such autonomy is not easy to achieve or facilitate.

The learner expects to be taught and the teacher expects to teach. The dependency of both need to be broken if dynamic development is to take place and the learner liberated and the teacher turned into facilitator. What this implies and what it should mean in practice, is that facilitator(s) and participant(s) are collaborators who agree on location, duration and subject of the learning.

11. We are not getting rid of professional development practitioners here! When a researcher uses the model and analyses situations and self, the model includes the 'External Feedback' element to make the point that they will need to seek an external voice to 'test' their self-analysis. A researcher development practitioner and their practice may well be that external voice.

12. Malcolm S. Knowles (1970), *The Modern Practice of Adult Education: From Pedagogy to Andragogy*, p. 56. Accessed 12/7/18: <https://www.nationalcollege.org.uk/cm-andragogy.pdf>

When a group assembles through its own free will then these conditions are being met. Alternatively, the single student/researcher/individual may choose a mentor to assist in their enquiry.

This is now more akin to the supervisor/supervisee relationship that researchers will be more used to. Secondly, wherever possible, the participant(s) devise, or at the very least are in agreement with, the method by which the professional development process is undertaken. Thirdly, the tutor is key to ensuring that the participant(s) follow the dynamic development route – the learned behaviours mentioned above can invariably impinge on the process.

Fourthly, It is important that the tutor avoids instruction – guiding is the operative term – and a pathway is achieved through the answers to the tutor's or fellow participant's questions. This is a Socratic method where tutor and participants seek through question and answer a means to discover the subject and sequentially establish a way forward for group activity, output and a satisfying learning experience. This is not tutor asking the questions and the learner answering them it is a combined method of discovery.

Dynamic Development Principles:

- The researcher has autonomy over the means of learning
- Researchers engage of their own free will
- Researchers devise or agree with the tutor, the method and process by which professional development will occur
- The tutor does not direct or instruct but acts as a guide assisting learners to gain the most from the resources at their disposal

In practice, from ethos to new approach

Reflecting on the discussion so far and to summarise, a number of aspects become emergent in thinking of how to move from a passive to an active approach for development and in doing so, to begin to address the many questions we have raised.

An underpinning theoretical concept of development that inherently engenders active engagement in development for the individual is needed, a concept that provides greater understanding of skills than previous attempts and provides a meaningful language alternative to common parlance (the afore critiqued soft skills, employability skills etc.), a concept that provides a framework for self-analysis, self-awareness

and for gaining self-understanding that can be a life-long reference point that can exist and function valuably for the individual independently of a training and development practitioner or the training room, a model that helps the individual to develop their own personalised thinking on professional development and what works for them and hence has a long term sustainability. However, to achieve sustainability, the theoretical concept needs also to be supported by a number of enabling aspects:

1. **A development recording system. Firstly, the system needs to work for the individual. It may well be very simple and does not have to be, for example, an extended reflective log, unless of course that is the individual's preference. Whatever, it must be the individual's choice. In terms of understanding individual development, some way of recording an individual's development, thinking, and analysis is needed, such that they can see progression.**
2. **External feedback is needed: Developing the ability to ask for and listen to critique, to be honest with ourselves, to accept praise, to have reference points for what is a high level of ability in an area and how that compares with us. Without an external reference point an individual may well be over critical or over confident. How do any of us know how good we are?**
3. **People need to go out and discover and explore. If someone is going to actively develop they need to participate, they need to take control, they need drive to get out there and look. Without drive development won't prosper. A workshop is only one small fraction of the opportunities out there to further professional development. There needs to be motivation, to explore all the development opportunities there are.**
4. **People need to develop situational awareness contextualised for themselves. If we can gain understanding of situations particularly before jumping 'head first' in to them, with self-awareness we may be able to be better prepared for how we will respond to a situation and how we can best manage, develop and grow in that situation. We may learn what we are best at and what is best left for others. We may make better choices for ourselves.**
5. **Finally, we need to support people to develop their dispositional awareness. Who am I? What do I value? What motivates me? What do I like? What don't I like? What do I enjoy? What do I find easy? What do I find difficult?**

And most importantly of all, as we have said, the individual needs to be at the centre of their development.

A. Introduction and context



Figure 2: The Dynamic Development Model in diagrammatic form.

Figure 2 encapsulates the bullet points above and presents the 'Dynamic Development Model' in diagrammatic form.

What does this mean for practitioners?

At a basic level, it is proposed that our role as practitioners in professional development, is to 'teach' the Dynamic Development Model and endeavour to 'activate' the six areas in the individual to ultimately be self-sustaining framed by the principles covered in the 'ethos' discussion earlier...

- **The researcher has autonomy over the means of learning**
- **Researchers engage of their own free will**
- **Researchers devise or agree with the tutor, the method and process by which professional development will occur**

- **The tutor does not direct or instruct but acts as a guide assisting learners to gain the most from the resources at their disposal**

As a practitioner we can still present information, but we need to present breadth, to expose ideas to participants such that they find their own route through.

For example, in working with personal awareness we might provide detail about one type-indicator tool, but we make participants aware of the multitude of approaches, and ideas that exist and the differing perspectives on those approaches and ideas.

Facilitation becomes one of knowledge, consultation, challenge, support and guidance. We would of course encourage practitioners to also consider their own personal and professional development using the Dynamic Development Model we describe.

B. The Dynamic Development Model explained

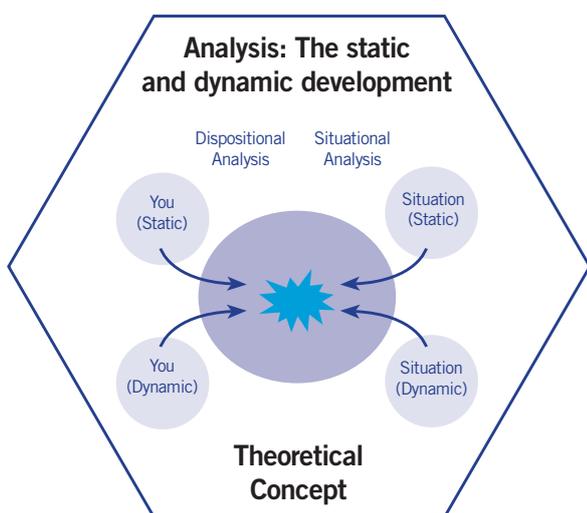
We now consider in some detail each of the six areas (Figure 2) that constitute the Dynamic Development Model:

- **The static and dynamic development theoretical concept. This the theoretical concept which sits at the 'heart' of the model**
- **Experience recording system**
- **External feedback**
- **Discovering and exploring**
- **Situational awareness**
- **Dispositional awareness**

We also propose example activities in each area. However, this is just a start. It is over to you as a practitioner and in the ethos of dynamic development, what do you have in your knowledge and experience that you think will work?

It is hoped that the Dynamic Development Model will prove useful and that practitioners will contribute further ideas and innovations to further editions of this guide.

The static and dynamic development theoretical concept



lifelong learning, knowledge, instrument, tool, device, implement, vehicle, dashboard,

Introducing the 'Static and Dynamic' professional development theoretical model

Introduction

The Static and Dynamic Development (SDD) theoretical concept sits at the heart of the Dynamic Development Model, mutually supported by the five other components of the model detailed in the sections that follow.

Here we intend to provide a concept for professional development that in itself engenders pro-activity. The concept acts as a tool that people can use to help them analyse, understand and support their self-awareness, situational awareness and understanding of self in a given situation. It is hoped that this will act to provide sustainability for professional development in the long term as an individual can refer back to the model at any time and reflect on their development.

It is also a key new pedagogical aspect for personal and professional development. In previous pedagogies an explanatory professional development model has not been 'taught', rather individualised skills are taught without an underpinning, explanatory model to pull things together for the individual. The concept and its theoretical underpinning are outlined below.

Situational competence: an alternative to 'Skill'

Firstly arising from the underpinning, we suggest key points of language as offer of alternative to 'soft', 'hard', 'transferable' etc... We hope this will initiate your thinking as we explain our thinking in this section.

Definitions:

- **Managing the dynamic and static components of a situation and within you, to a successful outcome, demonstrates situational competence.**
- **A dynamic component has a sense of momentum in a situation or in you.**
- **A static component has a sense of no change, stability and consistency in a situation or in you.**

Theoretical underpinning: The Static and Dynamic theoretical concept¹³

The theoretical thinking behind the SDD concept emerged from previous work evaluating the impact of researcher training and development activity¹⁴. In deriving the evaluation methodology, the work of Pawson and Tilley on realistic evaluation¹⁵ and the work of Kirkpatrick and Kirkpatrick¹⁶ on evaluating training and development, was drawn upon and developed in to the UK sector evaluation methodology for researcher development¹⁷.

A theoretical perspective was also presented by the author at the 2015 Researcher Education and Development Scholarship (REDS) Conference, *'In theory – A realist approach to the development of researchers'*¹⁸. In hindsight, the REDS paper was a pre-cursor paper to the SDD concept.

Realist evaluation considers what are termed C-M-O relationships; namely the consideration of and relationship between a 'Context', a 'Mechanism' that acts, and the related 'Outcome' emergent from the action of that 'Mechanism' in that particular 'Context'.

Kirkpatrick provides, what might be termed, a 'logic diagram' for the learning and development of an individual suggesting steps in an individual's response to a training and development activity as; reaction; learning; behavioural change; outcome.

Bringing the idea of realist evaluation together with the proposal of Kirkpatrick might suggest that, there is a learning 'context' in which Kirkpatrick's learning 'logic diagram' acts within the individual as a learning and development 'mechanism' that leads to an 'outcome'. This combining of the ideas of Realist Evaluation and Kirkpatrick has been published in more detail elsewhere [Bromley 2009]¹⁹.

If the Kirkpatrick logic diagram is considered as a learning and development mechanism, then it is proposed that, inherently, 'mechanism' has a sense of dynamism as does learning and development in the individual. Mechanism is not static, it has a sense of self momentum. Mechanism is dynamic. Secondly, it is proposed that context has a sense of being static.

There may well be different contexts and there may be change in the context but the context is inherently more predictable. For the training and development professional a training room 'context' will likely have common static features such as a data projector, white boards, chairs and tables etc. However, more dynamic, is the unknown of how any group of people will progress in their learning within that particular training room context.

An outcome of the above thinking is that there might be value, in respect of the development of people, in considering what might be 'static' and 'dynamic' characteristics of the individual, what might be 'static' and 'dynamic' characteristics of a situation and how those individual (dispositional²⁰) and situational 'dynamic' and 'static' components might interplay. This is the theoretical underpinning of the SDD model.

13. This section is an adapted extract from: Bromley, T., (2017) "From passive to active development; the Static and Dynamic Development (SDD) model", in Bromley, T. (Ed.), Vitae Occasional Papers Volume 4. A collection of papers from the Vitae Researcher Development International Conference, 12-13 September 2016, Manchester, UK The Careers Research and Advisory Centre (CRAC) Limited, Cambridge, pp. 15 – 22. <https://www.vitae.ac.uk/vitae-publications/guides-briefings-and-information/vitae-occasional-papers-2016.pdf> (Accessed 25th July 2018)
14. Bromley, T. (2012), "Impact Framework 2012: Revisiting the Rugby Team Impact Framework," available at <https://www.vitae.ac.uk/vitae-publications/reports/ieg-report-2012.pdf/view> (accessed 30th March 2017).
15. Pawson, R., and Tilley, N. (1997), *Realistic Evaluation*, SAGE Publications, London.
16. Kirkpatrick, D. L., and Kirkpatrick, J. D. (2006), *Evaluating Training Programmes*, Third Edition, Berrett-Koehler Publishers Inc., San Francisco.
17. Bromley, T., Metcalfe, J and Park, C. (2008), "The Rugby Team Impact Framework" available at <http://www.sddu.leeds.ac.uk/wp-content/uploads/2016/02/Rugby-Impact-Framework2008.pdf> (Accessed 30th March 2017).
18. The presentation is downloadable from the conference website <https://www.sheffield.ac.uk/ris/ect/events/reds2015> (accessed 28th March 2017).
19. Bromley, T. (2009), *Evaluating Training and Development Programmes for Postgraduate and Newer Researchers Society for Research into Higher Education series Issues in Postgraduate Education: Management, Teaching and Supervision*. London, available at http://www.srhe.ac.uk/publications/guides_on_postgraduate_issues.asp (accessed 25th July 2018).
20. The word 'disposition' is commonly used in psychology fields whereas 'personal' is commonly used in professional development fields. We use the word 'disposition' as we believe it is better defined and as such more accurately describes our conception than the word 'personal' in this context.

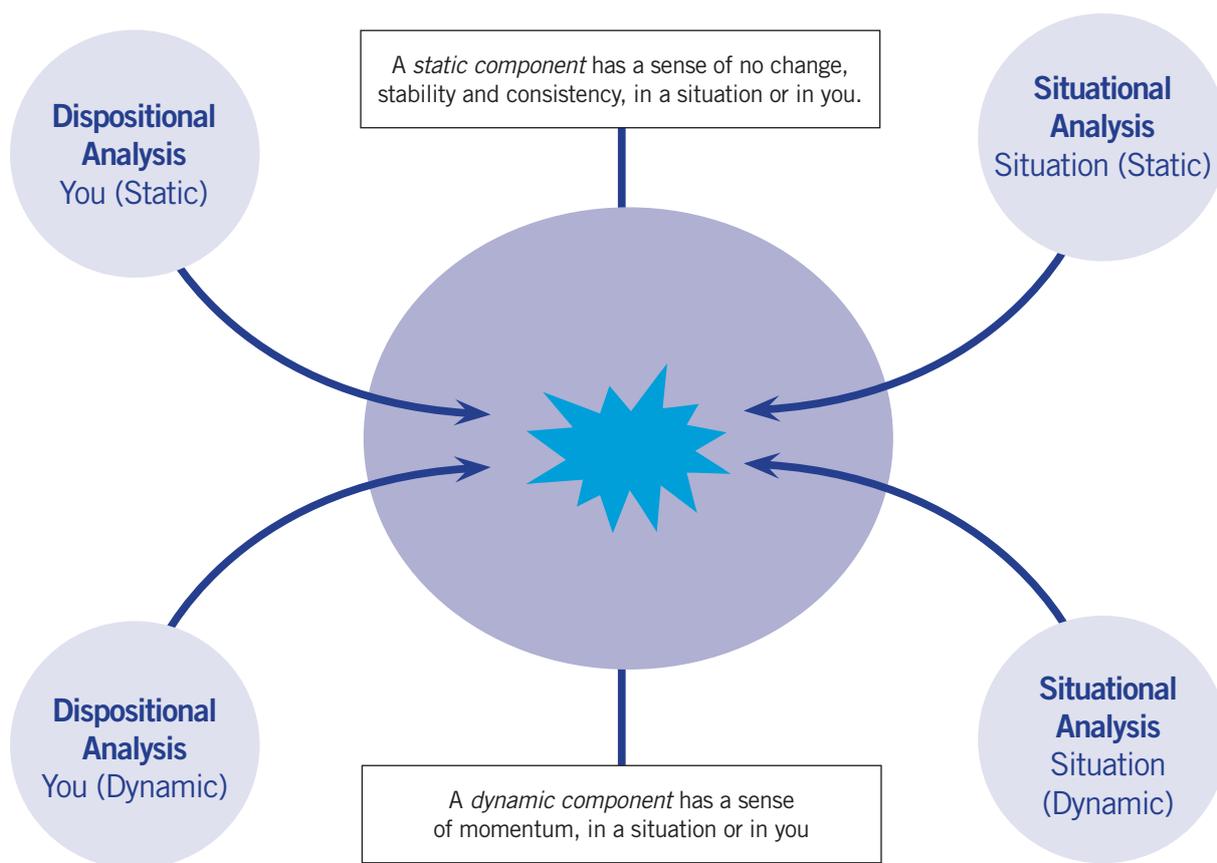


Figure 3: The Game Board: A diagrammatic representation of the SDD model.

Figure 3 provides a diagrammatic representation of the SDD Model which we have come to describe as the ‘Game Board’. The Game Board acts as a tool to provide a visualisation of an individual’s dispositional and situational analysis of a given situation.

Firstly considering the individual and to begin a dispositional analysis, a number of approaches could be considered.

For illustrative simplicity, Table 1 lists the outcome of a Myers Briggs Type Indicator^{21, 22} and Strengths Finder²³ analysis of the author.

Myers Briggs Type Indicator	Strengthfinder
Introvert; Intuitive; Feeling; Judging	Futuristic; Learner; Developer; Strategic; Learner

Table 1: The MBTI and Strengths Finder attributes of the author.

Regardless of any situation, any of the attributes listed in table 1 might, in general, be static or, in general, be dynamic. It is a static factor that ‘I like to learn’ however on a particular day for a specific situation, ‘I need to learn’ might become a driver (dynamic) of behaviour.

There might well also be, for example, personal values that generally act as drivers. For more simple terms ‘I like a plan’ may be a static, but when the individual is placed in a perceived chaotic situation ‘I like a plan’ may become the driver (dynamic) ‘I need a plan’.

What we have described in this paragraph is dispositional awareness for the individual. We now need to build on dispositional awareness toward dispositional analysis for a given situation.

21. See <http://www.myersbriggs.org> (accessed 25th July 2018).

22. We have used MBTI here for illustration as it is a widely used technique across the personal and professional development area with reference to disposition and will, as such, be recognisable to practitioners. However we do acknowledge the critique of such techniques. Which is something for practitioners to consider. MBTI is not part of the Dynamic Development Model and need not be used.

23. See <https://www.gallupstrengthscenter.com/home/en-us> (accessed 25th July 2018).

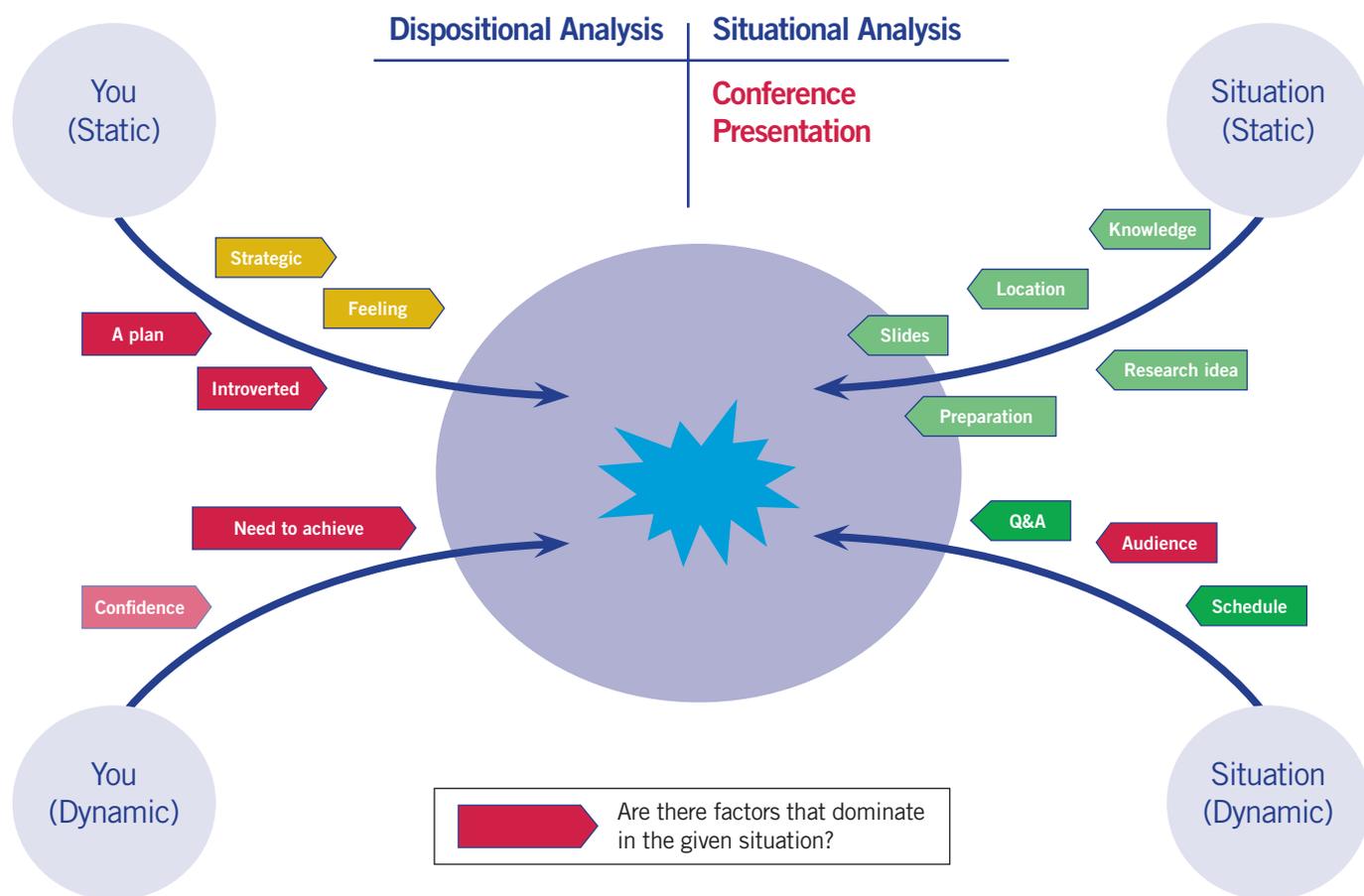


Figure 4: A dispositional and situational analysis diagrammatic representation using the Game Board for the situation of: conference presentation.

In Figure 4, we introduce a situation and start using the Game Board to analyse the situation for the individual.

The right hand side of Figure 4 proposes a situational analysis of a conference presentation considering what might be important static and dynamic factors. The left hand side considers which dispositional factors (from Table 1) may be most relevant for the conference presentation situation. Remember this is an illustration from the individuals perspective (i.e. in this example, the author). Were you to do your own analysis, you may well construct Figure 4 differently. That is important as it is you that is at the centre of the dynamic development approach.

By way of analysis, dispositional factors ‘Strategic’, ‘Feeling’ and ‘Introverted’ were selected as important statics for presenting. And in addition the preference for there being a plan. ‘Achieving’ was seen here as a dynamic driver and expressed as a ‘need to achieve’. Also newly introduced was ‘confidence’, recognising that confidence varied and was dynamic for the author in the situation ‘conference presentation’.

In the situational analysis, aspects of conference presentation seen as consistent and non-changing during presentation (static) were: PowerPoint slides, the location, preparation and practice of the presentation done beforehand, the research ideas expressed in the slides, the subject knowledge inherent in the individual. Seen as situationally dynamic were: the audience, the question and answer session, and the schedule of the presentation (e.g. overruns of other presenters).

Finally, highlighted in red in Figure 4, is part of the analysis of the conference situation for the individual proposing factors that might dominate for that individual in the particular situation. That there is an audience plays against the introverted disposition and also that the audience is dynamic and hence changing, potentially unpredictably, also challenges the ‘need a plan’. The audience aren’t ‘planned’ and adhering to a script. However, the ‘need to achieve’ driver can help overcome both the static dispositional aspects. There is a drive to do a successful presentation to get new ideas across.

So to re-cap, an hypothesis of the Static and Dynamic Development model is that an understanding of dynamic and static factors characteristic to the individual (disposition), combined with an analysis of the static and dynamic factors in a given situation, will aid an individual in understanding themselves in the given situation. The understanding will support them in recognising what they may need to do in terms of their own personal and professional development with reference to the situation.

The potential of the Static and Dynamic development concept

It becomes apparent that in considering the idea of ‘static’ and ‘dynamic’ components with reference to development, an alternative language to skills emerges as defined earlier in the section, ‘situational competence’.

In analysing the situation of presenting in Figure 4, the SDD approach in effect dissects and therefore expresses in more depth the presenting situation from the perspective of a specific individual (the author). The application of static and dynamic concept provides a much more ‘live’, ‘three dimensional’ and individually relevant expression of presenting than is achievable in comparison to presenting simply appearing on a listing of skills you need to have and more easily supports an individual to place themselves in the situation of presenting.

This SDD concept should support better, and more practical, understanding of a situation and self-analysis of development. It may well also be supportive in development terms in that it is unlikely that any individual lacks ability in all the different static and dynamic components of presenting identified. The expression of other situations in static and dynamic terms by those expert in the situation may also provide a valuable resource for learning. As individuals dissect situations for themselves in these terms they will, additionally, build a personal resource of various situational perspectives, presented in their own terms, to reflect upon.

Expressing situations in static and dynamic terms suggests situations are a composite of many components. There may well be commonality between static and dynamic components in different situations. For example, an accomplished presenter can manage an audience (dynamic) as can an accomplished teacher; ‘managing an audience’ being common to both situations. Rather than the notion that skills are transferable it might be better to understand that mastery of a static or a dynamic component of one situation may have commonality with another situation.

The following extract comes from a paper by McAlpine²⁴ who studied early career researchers transitioning in their roles, ‘Becoming a PI²⁵: From doing to managing research’.

‘Thus, though getting the grant was a positive experience, individuals found themselves dealing with new challenges (not doing ‘what I thought I would be doing’ (Juliet)) which many characterized as a shift in perspective from ‘doing’ to ‘managing’ research – ‘become a manager’ (Sam).

All but Romeo and Will described a range of responsibilities they had to take on that they were not prepared for: managing the grant (Jerry), dealing with people (e.g. Frances, Fiona), managing the team (e.g. Pedro, Fabien, Jerry), line managing individuals (e.g. Laura, Cathy) as well as setting priorities amongst tasks (e.g. Mike), negotiating the ‘political’ environment (e.g. Fabien), developing a management style (e.g. Greg, Geoff, Victor), getting people to do things they don’t want to do (e.g. Dan).’

[Source: McAlpine 2016]

If the McAlpine quote is considered from a ‘static’ and ‘dynamic’ personal and professional development framing then it appears that the transition is one of working with and familiarity of ‘static components’ (paragraph 1) to having to successfully learn how to work with dynamic components (paragraph 2).

Table 2: expresses this notion of ‘Static’ and ‘Dynamic’ further.

Static components	Dynamic components
Preparing presentation slides	Managing an audience
Project planning	Managing a project
Writing a business plan	Running a business start up
Writing a funding application	Managing a funded project
Writing interview questions	Interviewing
Writing a review of management theories	Managing people
Being able to understand	Being able to teach

Table 2: An illustration of ‘static’ or ‘dynamic’ framing.

24. McAlpine, L. (2016), “Becoming a PI: From ‘doing’ to ‘managing’ research”, Teaching in Higher Education, Vol. 21 No. 1, pp. 49-63.

25. PI – The ‘Principal Investigator’ on a research project.

So two questions to ponder in respect of 'static' and 'dynamic' might be:-

1. Do higher education institutions traditionally engender development of 'Static components'? Hence they don't engender development of the full set of components (static and dynamic) of a situation.
2. Do employers actually want understanding *and* competence in managing the 'static' and 'dynamic components' i.e. situational competence?

Activities

Activity 1 Getting participants to trial the model: - self

The later section in this guide provides more depth on development of dispositional awareness. A greater depth of awareness will make the model more useful. However in trialling the model and how it might work for a participant, as a starting point, provide a blank copy of the Game Board (Figure 3) and, with the 'static' and 'dynamic' definitions in mind, ask what participants see as being characteristic of themselves. The example of Table 1 and Figure 4 can be used to illustrate, but allowing participants to simply discuss their ideas without being initially exposed to an example can be better.

Activity 2 Getting participants to trial the model: - situation

Get participants to unpick situations in terms of statics and dynamics. The examples in part D of this guide can be used to illustrate the concept. It's important that it is made clear that there are no wrong answers. Dynamic development puts you at the centre of your development. How you see a situation is important for how you develop in that situation. If one participant sees something as dynamic for them but another feels it is static that is fine, as we are all different. Discussion of why the two participants see things differently can also help them understand both themselves and each other better in the given situation.

Activity 3 Analysis

With activity 1 and 2 completed the opportunity is there for participants to start an analysis of what they have explored. Given how they have characterised themselves and how they have unpicked the static and dynamic components of a situation how do they see themselves in the situation? Does their analysis lead to developmental ideas?

Experience recording system²⁶



Online tools, LinkedIn, Personal Portfolio, HEAR, memory, trauma, diary, PDR, recollection, personal journal, blog.

In this section, we raise key points for the practitioner to consider in respect of designing support related to recording systems in the Dynamic Development context.

The biggest challenge is to find a suite of recording systems which will work for your participants, for their consideration on a case by case basis. The system they use is their choice. You may also need to consider support for researchers in overcoming the inertia of starting something new where technology is concerned!

Some may feel that pen and paper is quick, simple, works adequately well, and will not break down. So, they may wish to focus on trailing pen and paper approaches.

Some may feel that the best experiential recording system is their own memory because they are tuned into a learning model which develops muscle memory: a critical incident can reveal a weakness making an individual feel 'consciously incompetent', they learn by going through a 'consciously competent' stage to arrive at an 'unconsciously competence' stage. Then, something may create another critical incident during their practice and initiate another learning cycle. The classic examples here are learning to drive a car or possibly reacting to classroom dynamics to learn by doing. So, they may wish to focus on critical questions.

If researchers focus on electronic systems, these systems need to be decided on a case by case basis because they need to be personalised as Beetham et al²⁷ describe so the user can own and manage their learning. Also, researchers may wish to tailor their learning further to involve their community of practice which Lave and Wenger²⁸ generally promote. So, your researchers may need your support to collectively trial, adapt to, and embed a whole range of 'new' electronic systems.

26. Lead author of this section Mark Proctor

27. Beetham, H., McGill, L. and Littlejohn, A. (2009), "Thriving in the 21st century: Learning literacies for the digital age (LLiDA project): Executive Summary, Conclusions and recommendations", available at <http://oro.open.ac.uk/52237/1/llidaexecsumjune2009.pdf> (accessed 25th July 2018).

28. Lave, J. & Wenger, E. (1991), *Situated learning: Legitimate peripheral participation*, Cambridge University Press, Cambridge, UK.

29. Paas, F., Renkl, A. and Sweller, J. (2003), "Cognitive Load Theory and Instructional Design: Recent Developments", *Educational Psychologist*, Vol. 38 No. 1, pp. 1-4.

These 'new' electronic systems can require a great deal of effort to learn. Paas et al.²⁹ suggest this can lead to feelings of being overwhelmed if a researcher's cognitive load is overwhelmed by trying to learn too much at once. So, researchers may benefit from small and separate activities on these electronic systems.

Furthermore, there is a need to include support for different recording systems for reflective and reflexive evaluations because, as Bleakley³⁰ described, they are different: Reflective evaluations are for examining why something happened whilst reflexive evaluations are for developing self-awareness. So, researchers may also benefit from separate activities for each type of evaluation.

Thus:

- **to consider why something happened and the consequences, we advise the use of easy to understand critical reflective analysis frameworks with pen and paper first. Then substitute or augment these approaches using electronic systems.**
- **to consider how core values, beliefs and culture impact on decision making and behaviours, we advise the use of more immersive critically reflexive approaches with pen and paper first. Then, modify and redefine these approaches using more creative electronic systems.**

Activities

For further details with respect to these two activities refer to the 'Facilitation of Experience Recording: using different E-systems' section of this guide.

Activity 1: utilising e-systems researchers currently use:

Consider how researchers can 'hijack' the electronic systems they currently use to apply to experience recording. The SAMR model (Ruben Puentedura)³¹ is a simple to understand framework which has been used to evaluate mobile learning technologies in other teaching contexts and is useful for this context³² as well.

Activity 2: utilising additional e-systems, the Padagogy Wheel:

This second activity will cement what the researchers have learnt from the first activity, in exploring the use of their current e-systems for experience recording, and offer them further options for using different electronic experience recording systems. The idea here is to explore the Padagogy Wheel³³ with your researchers, Figure 10.

External feedback



External voices: Sources of wisdom, coaching, supervision, friendship, collegiality, feedback, 360° appraisal, assessment, motivation, peer pressure, antipathy, admiration

'How might you gain feedback that you value and trust in a safe way?'

For Dynamic Development to be a self-sustaining developmental model, it has to be applicable and effective for researchers without the need for a structured professional development programme or access to researcher development practitioners.

In a researcher's future employment they may not have access to a development programme. Therefore, the model needs to be able to stand alone to support researchers in their development across all their potential experiences and not just those contained within, for example, a designated three hour development activity.

To support their development potential across all experiences, researchers need to become comfortable in soliciting feedback, listening to it, reflecting upon it and using it. Feedback might come from a friend, colleague, mentor, etc.. As practitioners think about how you can support researchers in seeking and being comfortable in receiving feedback.

The ideas of coaching and mentoring can be introduced. Where there are structured programmes of coaching and mentoring these can be highlighted but, even where they don't exist, understanding coaching and mentoring concepts can help researchers seek aspects of these concepts in informal relationships.

30. Bleakley, A. (1999), "From Reflective Practice to Holistic Reflexivity", *Studies in Higher Education*, Vol. 24 No. 3, pp. 315-330.

31. Common Sense Education (2014) Ruben Puentedura on Applying the SAMR Model, available at: <https://www.youtube.com/watch?v=W6j8soDYoaw> (accessed 21 June 2018)

32. Romrell, D., Kidder, L. C. and Wood, E. (2014), "The SAMR model as a framework for evaluating mLearning", *Journal of Asynchronous Learning Networks*, Vol. 18 No. 2, pp. 1-15.

33. Carrington, A. (2016), "The Padagogy Wheel English V5", available at <https://designingoutcomes.com/english-speaking-world-v5-0/>. (accessed 21 June 2018)

Activities

There are a wide range of activities that could be introduced here. As a starting point:

Activity 1:

Developing interpersonal awareness: key aspects would be activity relating to developing listening skills, observing skills, questioning skills, body language, reflection and the giving and receiving of feedback.

Activity 2:

Development relating to giving effective presentations can introduce the giving and receiving of feedback. Encouraging researchers to video themselves presenting, and then working through objective, self-assessment can develop capability in giving feedback.

A next stage can be for participants in a workshop setting to offer feedback to one another in respect of presenting, in a safe environment. In this way 'presentation' is used as a vehicle for developing ideas in the giving and receiving of feedback, with a view to the same developmental approach being applied to other situations.

Activity 3:

Introduce researchers to concepts of mentoring and coaching.

Discovering and exploring



Seeking, resource investigating, checking out, stumbling upon, curiosity interest, inquisitiveness, adventure, monitoring, debating

We believe that development will occur anyway, even where an individual is not consciously engaged or active in their development. However, we propose that the pace of development will vary.

To understand what you could do, what you could achieve, you need exposure to possibility. An active individual will seek opportunity. We can't force people to be active or motivated in their development. But we can give them opportunity (although we concede they may choose not to take it).

The style of a programme of professional development activity in a dynamic development framing should shift its balance toward providing opportunity for development rather than a balance toward traditional formal workshop activity. This is covered further in part D of this guide in the section 'A dynamic development programme framing'.

As a practitioner what opportunities are there within your programmes of activity for researchers to 'discover and explore'? Outside of the activity you offer, how do you support researchers to 'discover and explore' the range of opportunities they will all have around them in their own contexts and related contexts?

Activities

Activity 1:

Ask participants to speak with somebody they know well, about a situational competence that the participant believes the person is better at than they are. 'Interview' the person about what they do, why they do it, what their perspective is, what they think are key parts of being successful in the situation. Get participants to reflect on what they find out in respect of how it might help them improve.

Activity 2:

Look at the 'opportunities' outside of workshops that are in your programmes of activity and see if you can build them further. Perhaps the opportunity for public engagement, the opportunity to organise or apply for funding etc. However, you do not have to lay out all these opportunities for people, you need to encourage them to seek them out in their own contexts and learn and develop.

Activity 3:

Ask researchers to explore employment opportunities and to consider the situational competencies they have in relation to those asked for in a respective job description. Ask researchers how their capital fits with the job description. Ask how they might develop further situational competencies to increase their capital. (For a discussion of 'capital' see part C 'Understanding and building potential futures'.)

Situational awareness



Seeing, understanding, analysing, interpreting, checking, experimenting, reflecting

Alongside dispositional awareness, developing an increasing understanding of situations from the individual's perspective is crucial to the success of the dynamic development model. This is in two parts; how does the researcher 'characterise' or 'perceive' a given situation and how do they see themselves in that situation?

Use of the SDD model supports development of situational awareness. The activities described in the SDD section earlier can be used alongside the example situations expressed in static and dynamic terms provided in part D of this guide. Make available the section B explanation 'The static and dynamic development theoretical concept' such that the theoretical basis of the idea can be understood and discussed. There is also opportunity to draw from the wealth of methodological experience particularly from the social sciences in the observation of situations.

More simply, common forms that we use as practitioners to help our participants, for example, to give feedback on presentations can support analysis of situations. Encourage participants to think about observing situations in dynamic and static terms. So a key question to think about as a practitioner, is 'how do I support researchers in building an increasing understanding of situations from their perspective?'

Activities

As we said above, we would encourage the use of the activities discussed in 'The static and dynamic development theoretical concept' section of part B in conjunction with the 'Examples of situations expressed in static and dynamic components' section of part D of this guide. Use group exercises to observe a set of situations using video. What is happening?; What are people thinking?; analyse; debate. Get researchers to work independently in characterising

situations and then to discuss their characterisation with others. The views are likely to differ; this can support further understanding of both the situation characterised by the respective individual and develop understanding as to how people see things differently. Look to social science research colleagues to introduce observation ideas.

Dispositional awareness



Internal voices: goals, feelings, ambitions, needs, desires, self-discipline, responsibility, beliefs, motivations, confidence, insecurity, behaviours, attributes

Looking outside: Needs of others, employers, teams, colleagues, economy, institutions, governments, community, empathising, fearing, politics, philosophy, belief systems, interpreting, evaluating

Alongside situational awareness, developing an increasing understanding of your disposition is crucial to the success of the dynamic development model. There are many ways that this can be done. Utilising the Static and Dynamic concept and the associated activities discussed earlier in this guide will in themselves support development of dispositional awareness.

As well as using the activities with a group the SDD Game Board blank (Figure 3) can be an effective coaching tool used on a one-to-one basis. The tool helps the coachee consider situations in more depth, which can lead to better conversations about respective situations and how the coachee sees themselves in those situations. We would also encourage a broad exposure to the range of techniques and ideas commonly used to support learning about disposition.

Specific techniques might be introduced in dedicated sessions for that one technique, but participants should be aware of the range of ideas and have opportunity to find what works for them. They should also be made aware of any qualifiers and critique of the various ideas to support them in making their own judgements about what will work for them.

As practitioners we usually have familiarity with numerous ideas. Common ideas include Myers-Briggs Type Indicators (MBTI), Belbin team roles, Neuro-Linguistic Programming (NLP), strengths-finder, 360 degree analysis, etc. However, we would caution that practitioners should ensure that they are providing the most current ideas and perspectives. The professional development community can long hold on to ideas that have moved on within the communities (only sometimes academic) from which they developed.

MBTI and NLP for example, in particular, are often critiqued ideas. Participants should be made aware of the critique. We should also seek to maintain our own

professional development and familiarity with new, appropriate ideas, emergent from such areas as the psychology academic community. And we should seek out evidence based ideas and practice.

Activities

As we said in the previous situational awareness section, we would encourage the use of the activities discussed in the SDD section. We would also encourage exposure to one or more of the common ideas used to explore disposition in detail, with that qualifier of exposure to breadth of ideas and the critique of the ideas.

C. Understanding and building potential futures: from situational competence to capital³⁴

As we said from the beginning, the dynamic development model aims to support autonomous, sustainable development. Through the use of the model, researchers aim to build situational competence. But how does the researcher understand the full potential of the set of situational competencies that they continue to grow? How can they understand the careers that can open up for them?

Here we consider how to look at an individual's situational competencies as a portfolio, and how that can support the individual in understanding their potential future employment opportunities. We do this by introducing the concept of 'capital'. In her research on conceptions of researcher development in the post-Roberts period, Soubes (2017)³⁵ proposed the use of the sociological concept of 'capital' in supporting researchers to navigate the academic research landscape. The French sociologist Pierre Bourdieu developed a number of key concepts (e.g. capital, habitus, field) which have been used by higher education scholars (Soubes, 2017) and have shown to be extremely useful in understanding mechanisms of academic reproduction. Academic reproduction represents the mechanisms by which researchers come to know how to behave, how to act, how to be academics.

This relates to the concept of habitus: "a system of dispositions, that is of permanent manners of being, seeing, acting and thinking, or a system of long-lasting (rather than permanent) schemes or schemata or structures of perception, conception and action." (Bourdieu, 2005)³⁶. Learning to inhabit academia is linked to educational and family background as well as research socialization. Researchers are socialized to academic life through their undergraduate studies and the influence of their PhD supervisors and

research environment. The transition of researchers in the fields of doctoral and postdoctoral research can be understood as a process whereby different types of capital are acquired and accumulated. Capital represents what is valued in the social space in question.

In the field of research, 3 types of capital can be identified:

- **Scientific or research capital**
- **Academic capital**
- **Social capital**

Scientific or research capital:

relates to research and its forms of recognition, such as papers and grants, but also approaches to developing scientific knowledge and expertise. While it may be considered as the most valued form of capital in the research environment, practices that mediate its accumulation may vary.

Academic capital:

relates to knowledge about how to do things in academia, such as knowing about funders, writing applications, or engagement in activities beyond the restricted focus of the principal investigator/ research supervisor's research project. It includes activities considered peripheral, such as teaching or public engagement.

Social capital:

relates to connection to a broad network that brings substantial symbolic capital.

Now we apply this concept more broadly, reflecting the range of careers open to researchers. Regardless of the career move, even be it within academia from postgraduate

research through to academic³⁷, there are transitions along the way. Similarly in accessing the full choice of careers open to researchers, there are transitions to negotiate. We can restate our earlier sentence more broadly, 'The transition of researchers can be understood as a process whereby different types of capital are acquired and accumulated. Capital represents what is valued in the social space in question.' And we can reframe and add to our previous expression of capital as follows:

Expertise capital:

relates to research and other approaches to developing knowledge and expertise. And also to the knowledge and expertise that is developed.

Operational capital:

relates to knowledge about how to do things in a particular field which we sub divide into:

- **Academic field: such as knowing about funders, writing applications, or engagement in activities beyond the restricted focus of the principal investigator/ research supervisor's research project. It includes activities considered peripheral, such as teaching or public engagement.**
- **Non-academic field: As we are all starting here from the academic field we create this rather large category of 'non-academic' as the alternative, for illustration. As an individual, if there is a specific field you would like to transition in to you can do a more focused analysis of that specific field. The field might be (as examples) the charity sector; financial sector; industrial sector, healthcare, etc.**

Social capital:

relates to connection to a broad network that brings substantial symbolic capital, which, as above, we sub divide into:

- **Academic field**
- **Non-academic field**

These different forms of capital can be gained during doctoral and postdoctoral periods through building situational competencies in each of the three areas of capital (Table 3). However, the volumes and overall configuration of capital researchers gain play a role in how researchers are able to navigate both their current field of research and beyond. The shape of researchers' capital represents a form of power; it contributes to positioning them in different transition zones in their professional environment. Volumes and configurations of capital will contribute to the types of transitions researchers feel able to undertake in their professional lives. The logic (the type of capital valued) of different professional fields varies greatly.

A certain volume/ configuration is likely to make transition towards fellowships/ lectureship more likely than others; while other volume/ configurations of capital may facilitate easier transition towards particular non- academic professional environments. Researcher developers can support doctoral students and research staff navigate their professional development needs by highlighting the critical role a balanced capital configuration may play in the ability to navigate assertively their field of research and potential future careers. The challenge for researchers is to develop a balanced volume/ configuration of capital that not only allows them to be well positioned in the field of research (if they wish to undertake an academic career), yet at the same time does not undermine their positioning within other professional fields. The notion of balanced configuration is critical to facilitate ease in transition. A researcher with an unbalanced configuration may find their career transitions more challenging.

Table 3 (on page 22) proposes a range of situational competencies that be might developed as a researcher, mapped into one of the three categories of capital we presented earlier: expertise, operational and social. In considering this list, also look at the balance for academic and non-academic fields. Thinking of situational competencies in a capital context provides another perspective in which to consider the static and dynamic components of respective situational competencies; which components are only relevant to a specific academic field?; which components are broadly non-field specific i.e. they would be relevant in a range of fields inside or outside of academia? You may also find that an entire situational competency is non-field specific rather than just respective individual components.

Job descriptions are commonly expressed in competencies. How does a given job description map against the capital categories? For the researcher, through building their situational competencies, how much capital have they developed in each of the areas? What career options does their current capital offer them? Be clear that Table 3 is only one illustration and a researcher's personal table may well be different. Indeed, a researcher may not preference the construction of any table at all! After all - we did critique long lists in our opening challenge to current professional development practice in this guide, (although in this case the list would be the researcher's).

Regardless of a list, we would encourage researchers to at least think about their range of situational competencies, what capital that provides, and what employment opportunities their capital opens up. Particularly consider capital in terms of non-academic fields. For a researcher, if provided with a blank table 3, what could they put in each column? Equally, as a practitioner, what development opportunities (capital) does your programme offer mapped against each column?

34. Lead author of this section: Sandrine Soubes

35. Soubes, S., (2017), Postdoctoral researcher development in the sciences: a Bourdieusian analysis, EdD thesis, University of Sheffield, available at <http://etheses.whiterose.ac.uk/18296/> (accessed 25th July 2018).

36. Bourdieu, P. (2005). Habitus. In J. Hillier & E. Rooksby (Eds.), *Habitus: a sense of place*, 2nd ed., Farnham and Burlington: Ashgate pp. 43-53.

37. Statistically speaking the majority of researchers do not follow this career pathway. See <https://www.vitae.ac.uk/impact-and-evaluation/what-do-researchers-do> (accessed 17_05_2018)

Expertise Capital	Operational Capital	Social Capital
Developing expertise in new techniques/ methodology	Developing projects: different from research contract project	Working with known/reowned PI or PhD supervisor (pedigree)
Applying techniques to new system (e.g. to new model organism) or bringing new techniques to own research system Connecting different areas of research	Accessing independent funding (e.g. Research funding, travel funds, outreach funding) <ul style="list-style-type: none"> - Experience of applying for funding - Experience of being successful in accessing funding - Understanding of the expectation of funders and how to write a funding application - Awareness of the funders and areas with availability of funding 	Institutional location of UG/PhD degrees
Gaining broader knowledge by changing field, topic or area of research	Participating in non-research activities: <ul style="list-style-type: none"> - Being a Postdoc representative on a departmental, faculty or university committee - Establishing a research network - Delivering outreach and public engagement activities contributing to the impact agenda 	Rank of the institution where research projects have taken place and/or renowned research group
Developing a good publication record	Teaching: <ul style="list-style-type: none"> - Formal or informal - Sought or imposed 	Size of the research group
Publishing in high impact factor journals	Supervision of UG/ Masters students on project developed by Postdoc	Possession of own collaborators, independently from PI
Receiving prizes	Being a reviewer for journals or funders	Being known by others in the research field as having a specific, particular expertise
Developing instruments, techniques, methodologies usable by others	Reflection: on previous experiences and considering other options	Experience of interactions with senior academics
Developing new research ideas or focusing on a research aspect that no one else is looking at.	Negotiating with PI that side projects and fellowship applications are as important objectives as research project objectives.	Convincing experts to help you
Continuing to engage in project after funding has run out	Changing lab when having learnt enough techniques or realising it may not be a good enough research environment anymore	Socialising with other researchers
Adaptability in research approach (changing approach if something else better appears even if different from written funded application).	Organising research conference, choosing topics, keynote speakers, introducing and chairing sessions.	Negotiating job location with family needs (not capital in itself but element mediating other forms of capital)

Table 3: Examples of situational competencies mediating acquisition of capital (Adapted from Soubes, 2017)

An alternative to training needs analysis

The concept of capital can also offer an alternative to traditional training needs analysis approaches. It would not be unusual for a new postgraduate researcher to carry out a training needs analysis in the early stages of their research, compared against a list of 'required' skills, identifying the gaps for which they 'need' training. This is commonly critiqued³⁸ as a 'deficit' approach, looking at self and considering what is missing.

Alternatively, taking a Dynamic Development approach, at the start of a research degree we could explain the ideas of situational competence and capital before asking researchers to think about the situational competencies they already have and how that translates to the capital they already have.

We could also present all the potential opportunities to researchers that their research degree offers to gain situational competencies, and let them consider the capital they'd like to add to whatever they already have.



38. For example as expressed by my colleague Dr Helen Morley who I thank for inspiring this section of text.

D. Dynamic Development resources

A dynamic development programme framing

Taking a Dynamic Development approach to a researcher development programme does not mean completely re-writing what has gone before. As a transitional step, much can be achieved by initially framing existing activity within the Dynamic Development approach.

In Figure 7 a programme of development opportunities are mapped against the relevant hexagon in the dynamic development model, rather than being presented as a more traditional simple programme listing. However, to fully realise the ethos of the model any programme of activity should be participant defined, so here we can only project

how a programme might look and feel. We suggest the overall balance of activity is likely to be far more weighted toward providing opportunities for development (Figure 8), outside of a traditional face to face workshop approach (e.g. DE 3 in figure 7). And that the balance in facilitation will move away from information giving toward interaction (Figure 9).

There will be a need to explain the Dynamic Development model (SD1, in figure 7), and support its implementation; for example in making the most of the opportunities for development outside of a formal programme (SD2 in figure 7). Framing a programme this way with just a few additional sessions should be a good first, transitional step in supporting the understanding and implementation of the Dynamic Development approach.

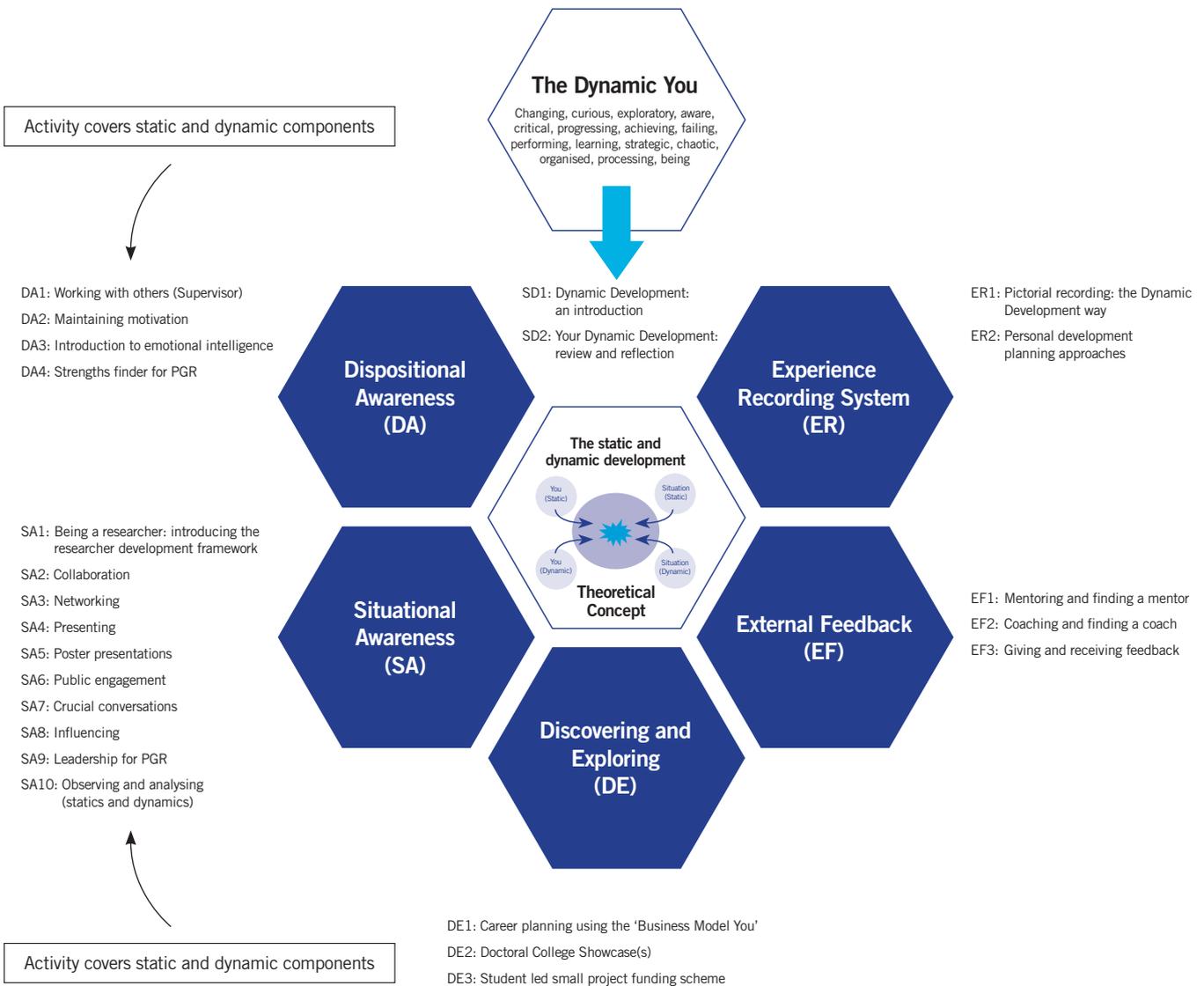


Figure 7: An example Dynamic Development programme of activity.

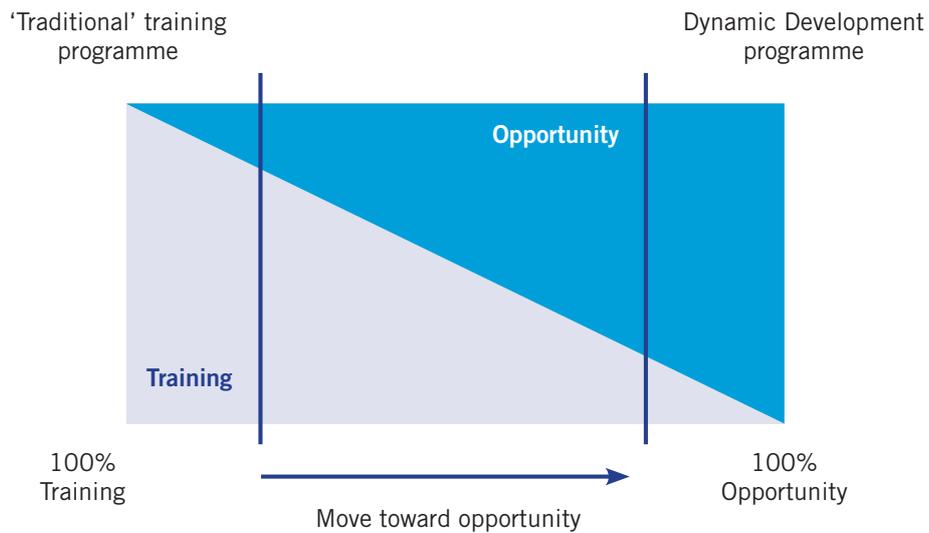


Figure 8 Move toward opportunity³⁹

A Dynamic Development programme would be set up with activity weighted toward the opportunity to actively experience something. This will then allow an individual to analyse that experience before, during and after using the static and dynamic development concept with a view to the same developmental analysis becoming self-sustaining in the wider experiences of the individual outside of a provided development programme.

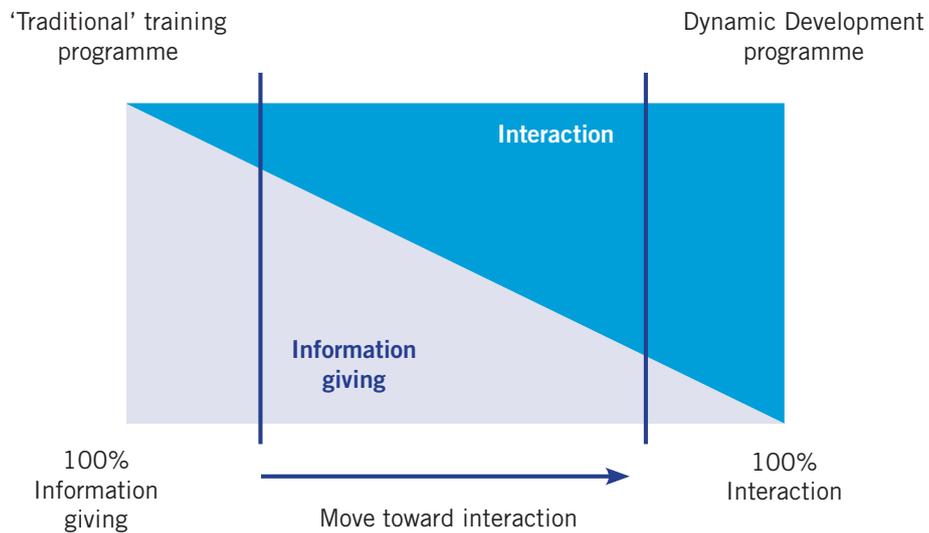


Figure 9 Move toward interaction

A final point is pedagogical in that any face to face sessions should be weighted toward the facilitator interacting with people rather than information giving. Information should be made readily available e.g. online such that time in face to face sessions can be maximised for participants and facilitators to interact and gain greater benefit from that interaction.

39. This figure is adapted from: Whitnall, D (2016), "Realising researcher potential: Introducing the Confidence Need Analysis (CNA)", in Bromley, T (ed.), Vitae occasional papers volume 2: A collection of papers based on workshops at the Vitae Researcher Development International Conference, 9-10 September 2014, Manchester, UK, The Careers Research and Advisory Centre (CRAC) Limited, Cambridge, pp. 3-10. Available at <https://www.vitae.ac.uk/vitae-publications/reports/vitae-occasional-papers-volume-2-2015.pdf/view> (accessed 26th July 2018)

Facilitation examples using the SDD concept

The following sections provide examples of how the SDD concept of Dynamic Development can be implemented in workshop scenarios and also provides a number of examples of dispositions and situations expressed in static and dynamic components.

As practitioners in authoring this guide, we are still exploring the possibilities, potential and implications for practice of the ideas presented in this guide. This section is designed only to illustrate some of the possibilities and where our thinking has currently reached. We would encourage you to explore further, as we will, the potential of:

'... there might be value, in respect of the development of people, in considering what might be 'static' and 'dynamic' characteristics of the individual, what might be 'static' and 'dynamic' characteristics of a situation and how those individual (dispositional) and situational 'dynamic' and 'static' components might interplay'

[from Page 12 of this guide]

There will be differences in how we each consider the above quotation and that is no bad thing. In the examples that follow, you will see our nuanced interpretations expressed.

Example 1 focuses straightforwardly on basic uses of the Game Board. The Game Board could be used in any number of sessions on wide ranging topics as it is a technique to support development of understanding.

In example 2 we build on the 'basic' usage described in example 1 to show in more depth how the SDD concept can be used to support reflective practice.

Then in example 3 we look at using the SDD concept in supporting reflective practice applied to a specific topic area, taking 'interdisciplinary working' as our 'situation' to be explored.

Finally, in example 4, we examine further potential of the SDD concept in exploring a broader interpretation of the meaning of the word 'situation'. In this example we consider a topic which might not immediately be seen as something that could be considered as a 'situation'; 'confidence development'. In this example we also add a further nuance to the way the notion of 'static' and 'dynamic' can be interpreted and used.

Example 1: Using the Game Board.

As we've said the Game Board can be used in many different ways. However we did think it was important to provide some straight forward observation on basic uses in facilitation as follows:

1. Use by the individual for self-reflection:

As with the examples provided later in this guide, the individual can use the Game Board to reflect upon a situation and on how they perceive that situation in static and dynamic terms. They can also reflect on how the static and dynamic components of their disposition impact within the situation they have chosen to analyse. The self-reflection can be used in preparing to move in to a new situation for the first time or in reflecting after a situation in thinking about what took place (or both).

2. One to one coaching:

1a above can also be done with the support of a coach helping the individual to analyse, interpret and generally reflect upon a situation and their engagement within that situation.

3. Group work:

People see things differently and will construct different static and dynamic interpretations of situations. Giving a group a situation to consider will raise these differences and, through discussion, will help the group understand each other's perspectives and may also add to their own understanding of their perspective. An example exercise is:

Box it up⁴⁰

A theme is chosen for the session and explored in detail. Four boxes are used, each one representing a different component: You (Static), Situation (Static), You (Dynamic) and Situation (Dynamic). In small groups, participants work on a box each and consider what could be put into the box? This could be skills, feelings, training and development needs, ideas or suggestions. 20 minutes is allocated to do this with a further 20 minutes at the end (5 minutes each) for each group to feedback what's in their box. The activity can be made more engaging by asking the groups to decorate the box and 'sell' the box as a product pitch (Dragons' Den Style) as part of the feedback at the end.

40. Lead author of *Box it up* Davina Whitnall

Example 2: Introducing the SDD concept for reflective practice⁴¹

This approach for introducing the SDD concept in to the processes of reflective practice is underpinned by three pedagogic principles.

Firstly, 'Biggs constructive alignment' which involves the alignment of teaching and learning with assessment⁴². Learning activities are built which demonstrate, evaluate, and validate the use of the SDD concept. As a consequence, these activities serve as opportunities for learning about the SDD concept as well as being able to assess how well people can use it.

Secondly, social learning in a 'Community of Practice' which involves communities co-constructing their knowledge to build a collective understanding on useful ways of working⁴³. Paired or small group discussions are incorporated at the end of activities for each person to evaluate, validate and build on their ideas in a research community. An end of workshop discussion across all groups is also included to offer the opportunity to build further knowledge in areas which others have considered, as well as enabling everyone to validate what they have learnt.

Thirdly, sequentially scaffolding learning using a 'Bloom's Taxonomy' approach which involves supporting learning at increasingly higher levels⁴⁴. The workshop is ordered into four learning phases which offers four sequential 'levels of learning'. These levels are descriptive, then explanatory, then applying, and then evaluative in nature. Here is an outline for a short (1hour) face-to-face workshop, described in these four phases:

Phase 1.

(In the introduction) Briefly **DESCRIBE** the importance, purpose, and principles of models and frameworks as tools for reflection and reflexivity – to quickly gain 'buy in' for using it and offer a basic level of understanding of the underpinning theory very quickly. Make the point that different tools can be useful for exploring different situations.

Phase 2.

Briefly **EXPLAIN** how these tools can be used to generate information for populating the SDD model. Model their use in a reflective process with a case study using a completed example to speed up this phase (See the examples in the later section in this guide 'Dispositions and situations expressed in static and dynamic components').

Phase 3.

Facilitate an activity for researchers to **APPLY** a reflective framework and the SDD model to describe, analyse and evaluate a situation. Initially ask researchers to describe an experience using a generic reflective framework, then analyse and evaluate their actions in the situation using the SDD model. In this way, the researchers can go through a descriptive phase in reflection quickly using the reflective framework. Then, they can focus on using the SDD model to evaluate themselves and their situation together. Also include time for them to pair-up and share their experiences of using the reflective framework and model.

Phase 4.

Facilitate a group discussion to jointly **EVALUATE** and **VALIDATE** the use of the model. Ask researchers to discuss the effectiveness of the model – including how good it is for understanding why they acted in the way they did, as well as how they can learn to improve their practices. This phase enables the researchers to build on their own ideas with the support of the community. This phase also enables the facilitator to assess the learning achieved and assess how motivated everyone is to use the SDD model.

Although learning is 'messy' - not generally ordered or formatted in this way - outside of a classroom, this approach has important, positive qualities which are worth noting. By focusing most of the time on applying reflective practice - rather than understanding the principles of reflection - researchers can conserve their energy for learning how to use reflection instead of wrestling with the theoretical concepts too much.

By focusing on trialling the model with personal experiences, the researcher will have developed and demonstrated the ability to use the model in their own context before even leaving the room, making the process real for them.

By incorporating group evaluations on the usefulness of the model, each researcher will have: had time to consider their motivations for using it; had time to reach a conclusion on how likely they are to use the model; and had time to consider the benefits of using it - and all this before they even leave the room!

41. Lead author of this section Mark Proctor

42. Biggs, J. (1996), "Enhancing teaching through constructive alignment", Higher education, Vol 32 No. 3, pp. 347–364.

43. Lave, J. & Wenger, E. (1991), Situated learning: Legitimate peripheral participation, Cambridge University Press, Cambridge, UK.

44. Bloom, B. S., Engelhart, M. D., Furst, E. J., Hill, W. H., Krathwohl, D. R. (1956), Taxonomy of Educational Objectives: The Cognitive domain. Longmans.

Example 3: Interdisciplinary working workshop⁴⁵

Aim: to develop a student designed programme to achieve an understanding of working in an interdisciplinary way.

Room set up cabaret style

Activity 1:

- **Take a couple of minutes to re-introduce yourselves**
 - Name
 - Nationality
 - Research field
 - School
 - Staff or Student
 - Faculty
- **Think about how you chose your table**
 - You knew some people already
 - People from your School you know by sight
 - They seemed friendly
 - You were last in the session

Activity 2:

Introduce the Static and Dynamic Development (SDD) concept – Can they apply it to where they sat?

e.g. Static situation – tables

Dynamic Situation – When people arrive

Static You – Your preferences – introvert/ extrovert

Dynamic You – Feeling on the day

Present brief slides on what Interdisciplinary means

Activity 3:

Take a few moments to consider:

- **What is an academic discipline?**
- **What characterises it?**
- **Can you envisage an academic/research structure without disciplines?**
- **What would it look like?**
- **How would it affect wider things such as teaching?**
- **How crucial is your ‘discipline’ to your identity as a researcher?**

- **Do you feel you belong to a research community with a shared understanding and goals and a different culture from other disciplines?**

Discuss on your table

- **What are the benefits and opportunities for YOU of collaborating on a research project in an interdisciplinary way?**
- **Feedback 3 benefits and 3 pit-falls of this approach**
- **Discuss Risks/Benefits**

Present brief slides on skills normally described as needed

- **Openness to change**
- **Belief in the value of Interdisciplinary work**
- **Willingness to work together**
- **Respect for differing perspectives**
- **Trust in people’s intentions**
- **Desire to contribute for the betterment of the [institution]**
- **Secure knowledge of their disciplines**
- **Mutual respect**
- **Space and time for sharing ideas and information**
- **A good sense of humour!**
- **Flexibility, adaptability, creativity**
- **Curiosity about, and willingness to learn from, other disciplines**
- **An open mind to ideas coming from other disciplines and experiences**
- **Good communication and listening skills**
- **An ability to bridge the gap between theory and practice**
- **A good team worker**

Activity 4: Done individually

Think of your own skills in this respect. Which are static/ dynamic? Which are within their control? How will you go about developing them? Use Example 3 Interdisciplinary working from the ‘Dispositions and situations expressed in static and dynamic components’ section of this guide.

45. Lead author of this section Gail de Blaquiere

Activity 5: Done as a group

Design and agree Training Programme to help them achieve identified development goals.

Feedback on how group activity went – again identify static and dynamic components

Presentation of each groups planned training Programmes
Whole group to decide on best plan.

Facilitator to arrange activities if at all possible – outcome might be no workshops so can also reflect on that.

Prior to session plan 6 month review of what students achieved and how.

Example 4: Developing confidence facilitation models.^{46, 47}

*Talk the talk and walk the walk –
Considering 'confidence' conceptually as a 'situation'.*

Participants in a small group take turns to outline the area in which they would most like to develop confidence. They should summarise this in a single sentence and share this with the group. They should then think about if this is something dispositional and static, dispositional and dynamic, situational and static or situational and dynamic.

A sign for each option has been put up in the room, participants should walk and stand by the sign they believe best describes their situation.

Once at the sign, participants are encouraged to discuss their choice and why (additional facilitators may be needed so that there is someone at each sign). After the discussion, participants are asked if they want to move based on the discussions and are free to move to another sign.

Strategies are presented to the group as a whole for each of the four areas that include considering what can be changed, the preparation that can be undertaken and identifying opportunities that exist to develop confidence moving forward.

Dispositional mapping – step 1

Individuals take time to reflect on their skills that they would like to develop by considering their confidence. They use a template as shown and one template per item. They deconstruct the skills into the four different areas, separating what is within their control and changeable and what is outside of their control and non-changeable.

You (Static)	Situation (Static)
You (Dynamic)	Situation (Dynamic)

The Dispositional Mapping Template

Dispositional mapping – Step 2

Participants are asked to highlight with a highlighter the items that can be changed and add a confidence rating to each item on a scale of 1-10 e.g. if they feel very confident about an item – mark it as 10, if they feel least confident about an item – mark it as 1 for example.

Any items marked 7 + are high and participants should write actions on how to take these forward?

Any items marked 3-6, participants are asked to identify what will increase their confidence in these areas and make a note of these.

Items that are 2-0, participants are asked to break these down further and explore what it is that makes them low. What can they then do to increase this?

Dispositions and situations expressed in static and dynamic components

By way of further illustration and to support understanding, this section provides a number of examples of skills that have been 'unpicked' using the Static and Dynamic Development theoretical concept.

Remember that this an analysis of a situation and reflection by the individual, of that situation, for them. You may well see things differently, but the analysis will still support understanding.

Example 1: Conference presentation (Tony Bromley)

Example 2: Confidence development (Davina Whitnall)

Example 3: Interdisciplinary working (Gail de-Blaquiere)

Example 4: Leadership (Tony Bromley)

Example 5: Project management (Tony Bromley)

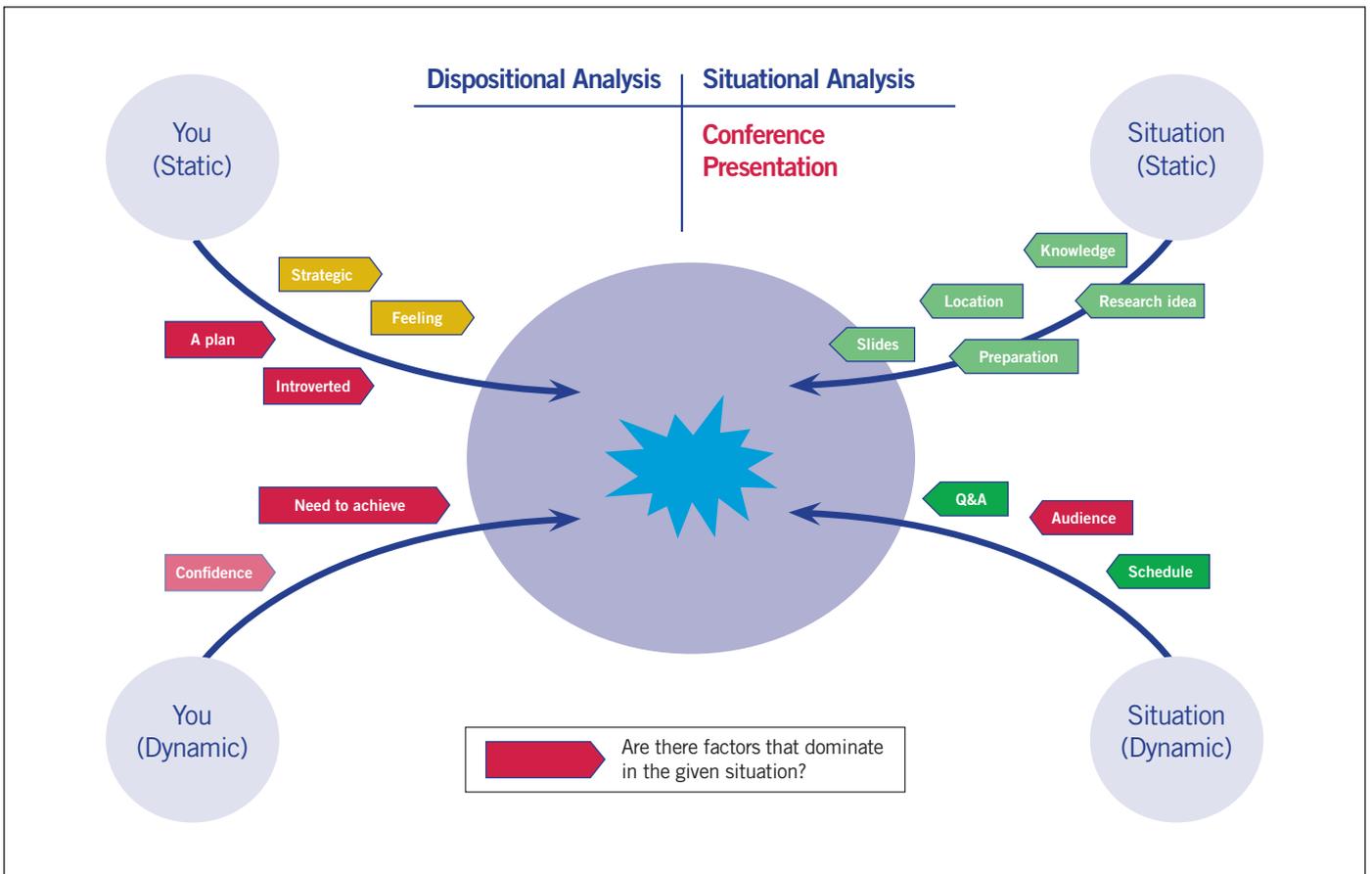
Example 6: Strategic reading (Mark Proctor)

Example 7: Working with integrity (Gail de-Blaquiere)

46. Lead author of this section Davina Whitnall

47. The focus of this example is 'developing confidence', however the session approach could be used for other topics

Example 1: Conference presentation



Explanation (Tony Bromley perspective)

I looked at this in the first instance, from the perspective of my identified dispositional factors characterised as per the table below:

Myers Briggs Type Indicator	Strengthfinder
Introvert; Intuitive; Feeling; Judging	Futuristic; Learner; Developer; Strategic; Learner

The right hand side of the diagram proposes my situational analysis of a conference presentation considering what I see as important static and dynamic factors. The left hand side includes the dispositional factors from my table above which I think are, for me, the most relevant to the conference presentation situation.

By way of analysis, dispositional factors 'Strategic', 'Feeling' and 'Introverted' were selected as important statics for presenting. And in addition the preference for there being a plan.

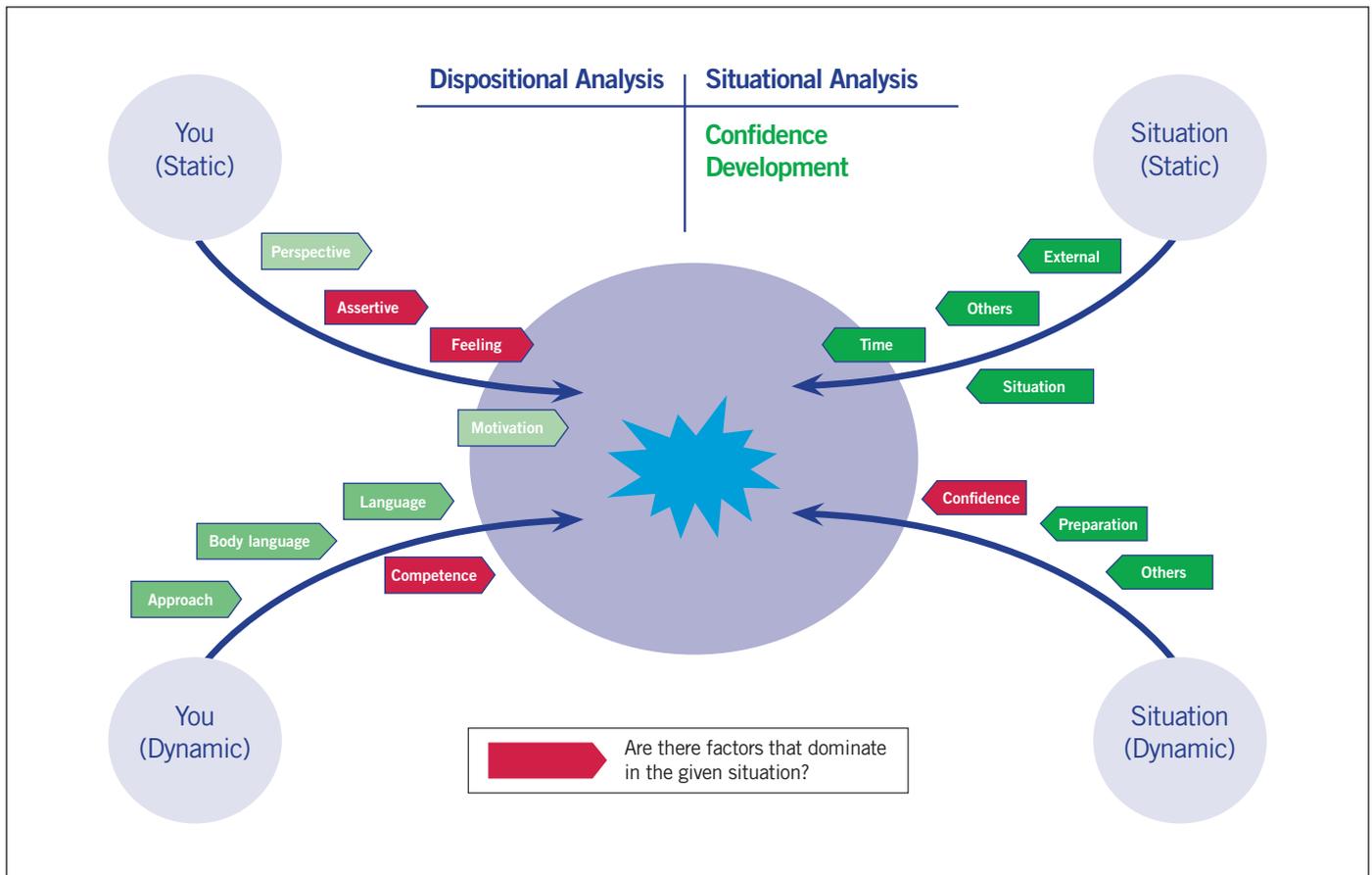
'Achieving' was seen here as a dynamic driver and expressed as a 'need to achieve'. Also newly introduced was 'confidence', recognising that confidence varied and was dynamic for the author in the situation 'conference presentation'.

In situational analysis, aspects of conference presentation seen as consistent and non-changing during the presentation (static) were, PowerPoint slides, the location, preparation (e.g. practice of the presentation done beforehand), the research ideas expressed in the slides and the subject knowledge inherent in the individual. Seen as situationally dynamic were, the audience, the question and answer session and the schedule of the presentation (e.g. overruns of other presenters).

Finally, highlighted in red are factors that might be dominant for me in the particular situation. That there is an audience plays against the introverted disposition and also that the audience is dynamic and hence changing, potentially unpredictably, also challenges the 'plan'.

The audience aren't 'planned' and adhering to a script. However, the 'need to achieve' driver can help overcome both the static dispositional aspects. There is a drive to do a successful presentation to get new ideas across.

Example 2: Confidence development



Explanation (Davina Whitnall perspective)

Situation (static):

The situational static represents the fixed environment that fosters confidence. These are the elements that promote or hinder confidence development such as time, others or the situation itself. These elements are often perceived as fixed and immovable with limits to how they can be changed or developed.

Situation (Dynamic):

The Dynamic position considers what can actually be done to improve confidence within these fixed boundaries. The individual is encouraged to consider confidence more deeply and how this could be improved. A good exercise is to consider a situation when you felt most confident.

You (Static):

The static situation for confidence identifies all of the attributes that you would associate with having confidence such as assertiveness, finding your voice, feeling capable and having the motivation to do this.

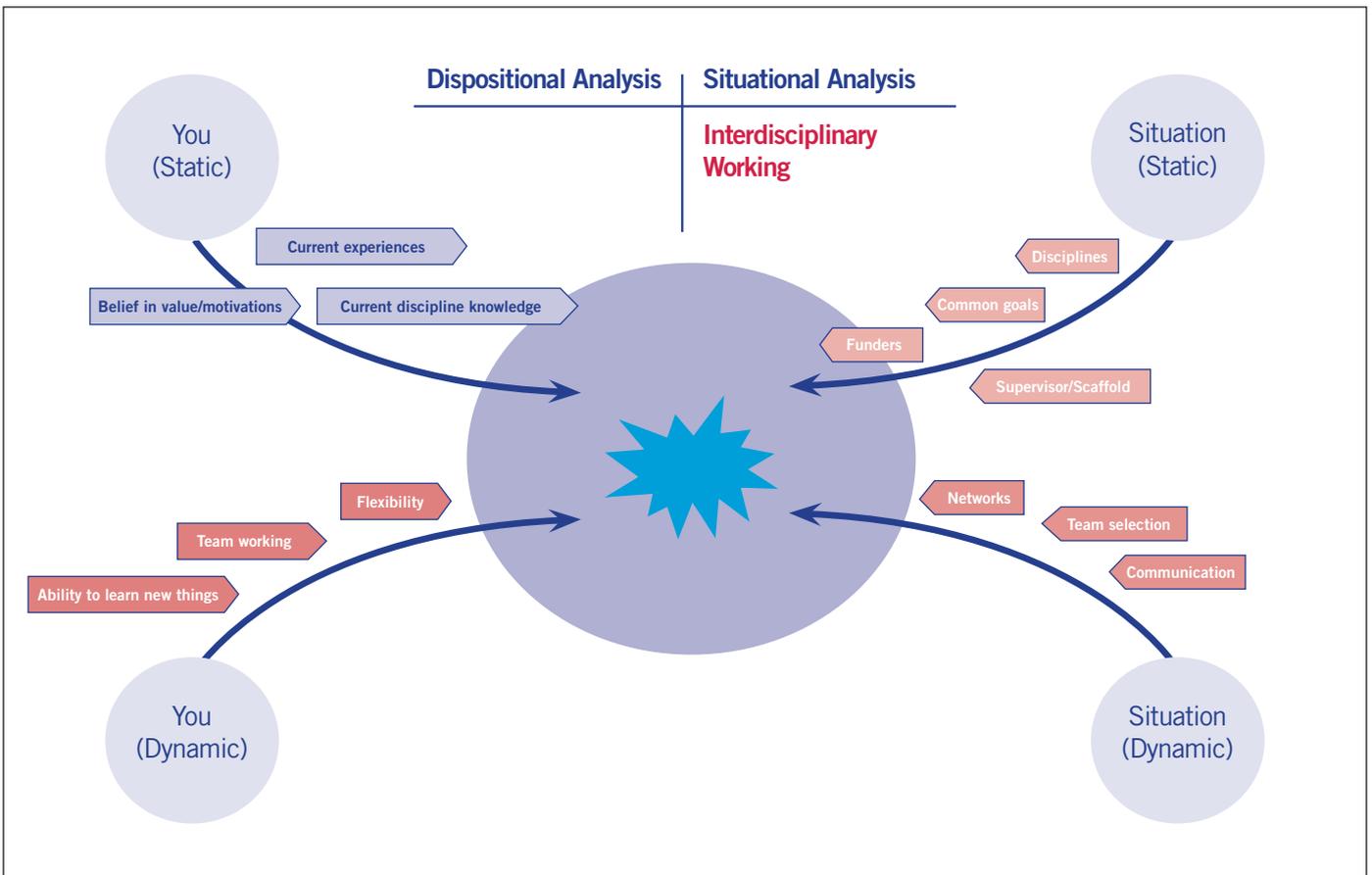
The static position reflects on what you think is needed and the sort of behaviour that would be considered confident behaviour. This is best used in the broadest sense as everyone perceives confidence differently as well as having varying confidence development needs.

You (Dynamic):

The Dynamic position focuses on the detail of developing confidence and what this means in tangible terms. Once output of this is that considering this detail, generates a 'to do' list of development opportunity such as developing competence, positive body language etc.

Developing Competence also begins to move toward the situational analysis as this may be more fixed in terms of time or opportunity and may not just be subjective to the individual.

Example 3: Interdisciplinary working



Explanation (Gail de Blaquiére perspective)

Situation (Static):

Static elements in this situation relate to the current research landscape which, though changing, is based in traditional academic disciplines. Most Supervisors/PIs will be experts in a particular area, and aiming for the student/project to achieve successful results and be completed on time. Funders may have clear aims for the research outcomes and its impact.

Situation (Dynamic):

Dynamic elements could include the disciplines and expertise in interdisciplinary working of the supervisory team the size and breadth of networks available to the project and the level of communication between the parties on the focus and outcomes of the research.

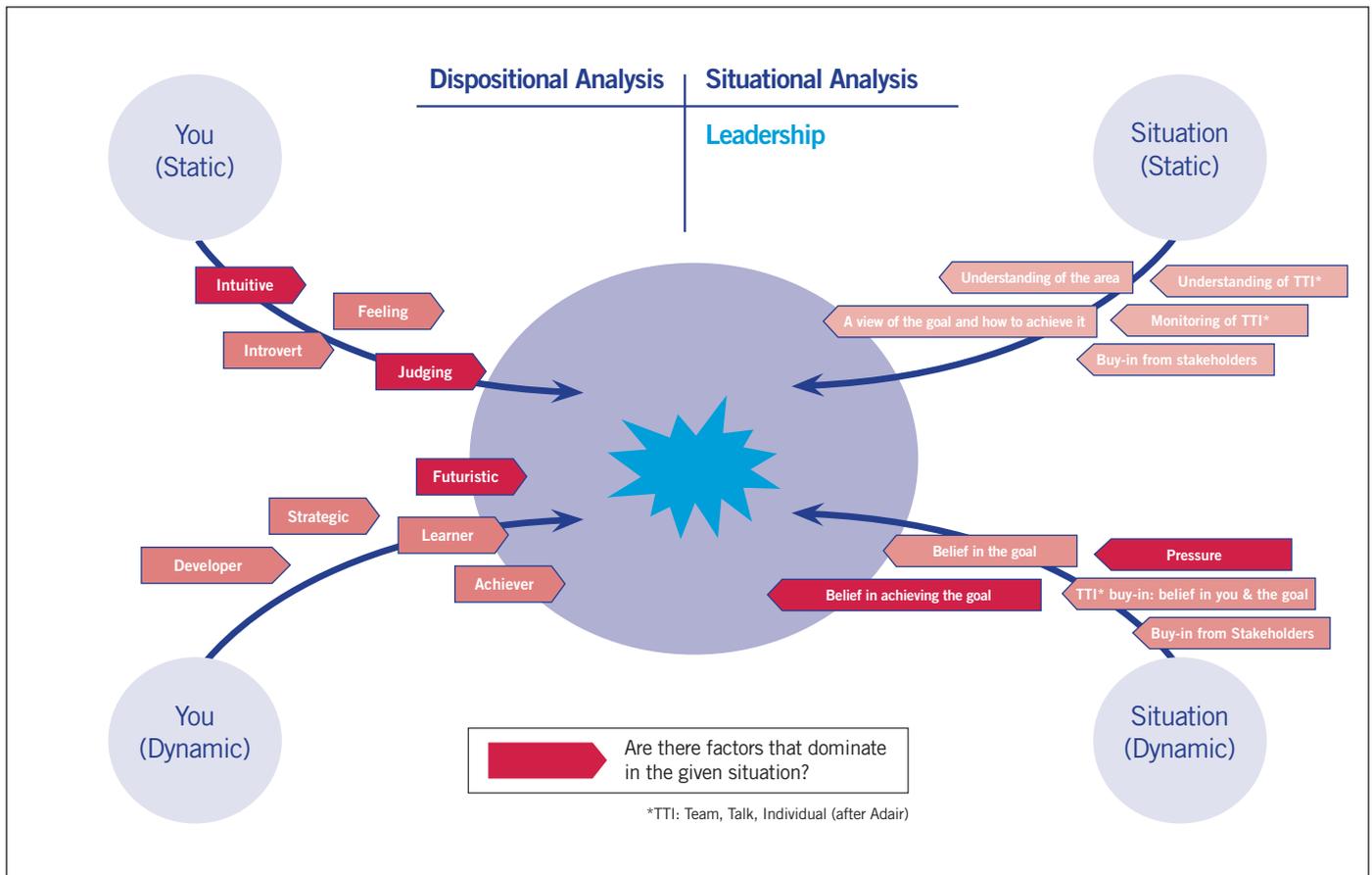
You (Static):

Static elements will be based on your knowledge and current experience in your discipline together with the amount of belief and motivation you bring to the project.

You (Dynamic):

Dynamic elements will come into play with your level of ability to learn new knowledge, methods or understanding different disciplinary norms, your capacity to work successfully with evolving teams and your flexibility during the project.

Example 4: Leadership



Explanation (Tony Bromley perspective)

Situation (static):

In terms of situation static I have listed things I see as foundations that need to be in place in respect of leadership. I think you need an understanding of the area and some basic understanding of leadership principles, which could be your personally developed ideas, rather than taught models. I think you need some goal/vision of what you are trying to achieve and also at least some initial buy-in to the vision by someone other than yourself. I think if you have no idea of where you want to head (vision) it is difficult (but not impossible) to lead.

Situation (Dynamic):

I think that if you are leading a group of people, either directly or indirectly, that their (and your) belief in the vision/ goal can be variable, it is dynamic and not necessarily predictable. As you and they invest more, and with that understand more, belief can grow but can alternatively dissipate. I think the same is true of belief in whether the goal/vision is practically achievable. This is true of any stakeholders in the vision. Finally there will be varying pressure to succeed from self and stakeholders.

You (Static):

There are many ways of looking at this. I have listed all the outcomes of my Myers-Briggs Type Indicator analysis as static factors to see if it tells me anything about how I experience leadership.

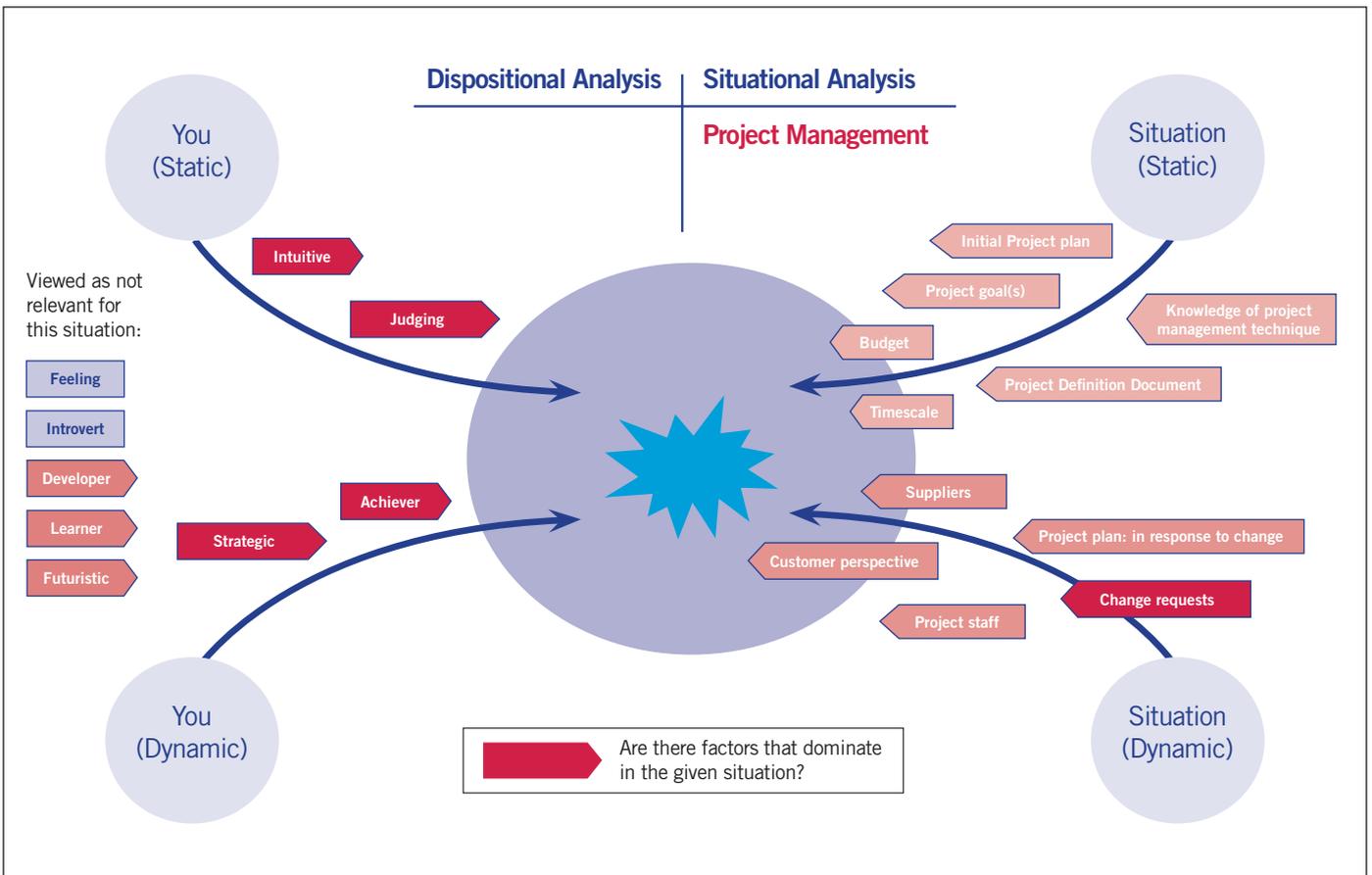
You (Dynamic):

For dynamic factors for this analysis, I have considered my top 5 strengths as determined by a 'Strengths finder' analysis. I've chosen these as dynamic because, to me, they have a sense of movement and are driving me. I am driven to achieve, to learn, to develop things, etc.

Analysis:

Me in this Situation: For me personally the dominant factor here is my drive for future thinking and to change that future (futuristic dynamic in red). I always want to change futures, improve, innovate and create something better (or at least what I perceive as better!). However, this in itself will create an additional personal pressure on top of the leadership situational pressure that exist to achieve a goal/vision. The intuitive aspect in me should help in seeing the 'big picture' and managing the ups and downs of belief in a group in respect of the goal/vision. The judging aspect should support keeping to task and staying organised.

Example 5: Project management



Explanation (Tony Bromley perspective)

Situation (static):

I would see project planning as a static. It is relatively easy to work out a plan. You need a plan that is, time-bound and expressed diagrammatically with a Gantt chart(s). You need a project definition and a clear outcome target for the project and you need a budget. However any project manager will tell you that the plan is great until people (dynamic) get involved!

Situation (Dynamic):

The dynamics all relate to the people involved in the project, and managing changes to plans that they create. The aspects I've listed as dynamic can all be categorised as change either by request or by default. The project management situational competence is in managing all this change to still deliver the project. Customer views change, suppliers don't deliver to time and project staff come in and out of the project etc. All dynamic!

You (Static):

There are many ways of looking at this. I have listed the outcome of my Myers-Briggs Type Indicator analysis as static factors to see if it tells me anything about how I experience project management. Although potentially things might change, I do recognise myself consistently (static) as for example an 'introverted thinker' as described by MBTI.

I've also put 'Feeling' and 'Introvert' to one side here, as I don't think they are particularly relevant for me to this situation. The plan sets the rules so that is that! This gives me some sense of detachment in that if there is disagreement, I'm just working to the plan.

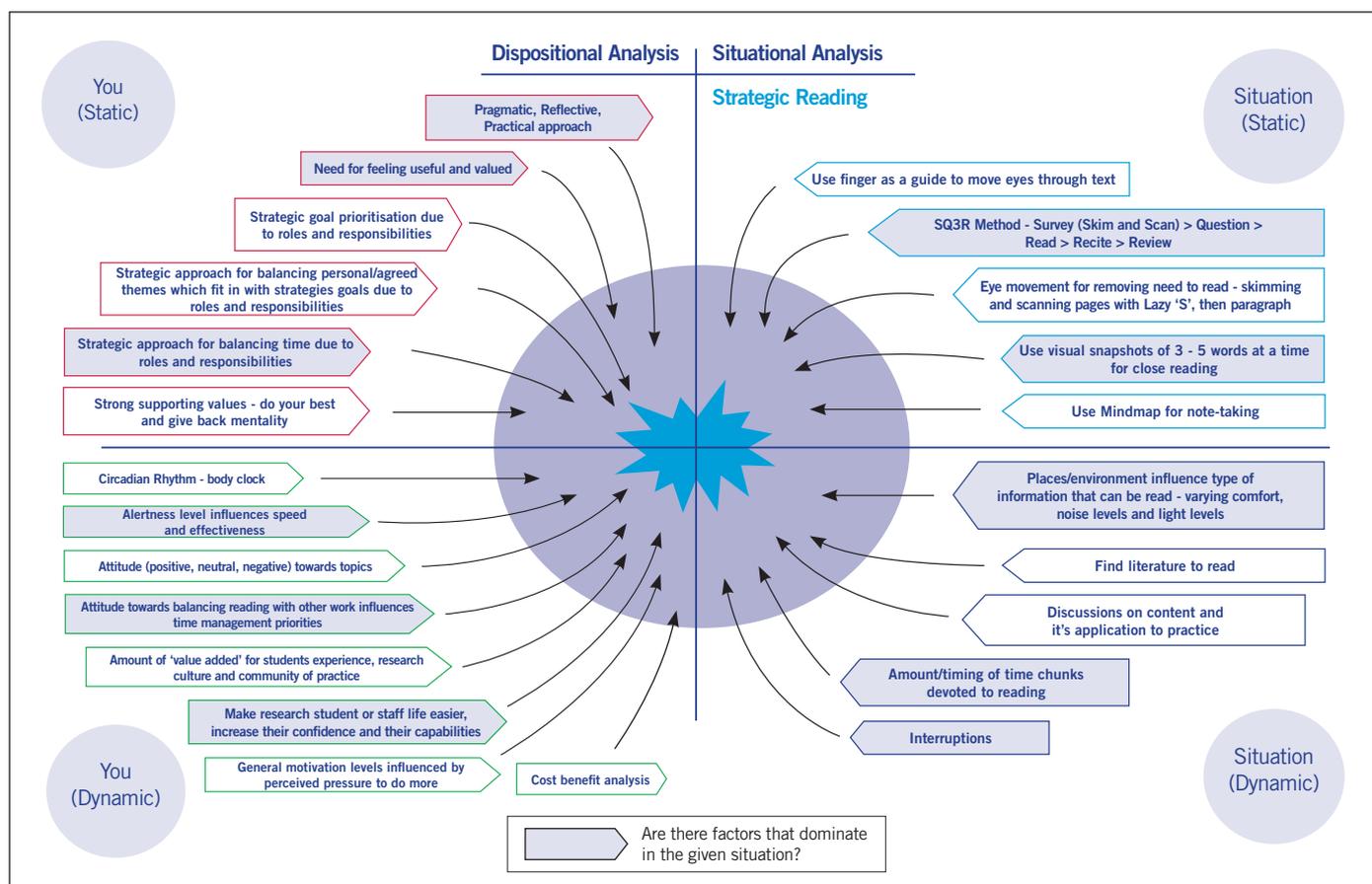
You (Dynamic):

For dynamic factors for this analysis, I have considered my top 5 strengths as determined by a 'Strengths finder' analysis. I've chosen these as dynamic because they to me have a sense of movement and of driving me. I am driven to achieve, to learn and to develop things. I have also put 'Developer', 'Learner' and 'Futuristic' to one side as I don't think they are relevant to this situation.

Analysis:

Me in this Situation: I have strategic drivers and achiever drivers (dynamics) which should support delivery of a project. I need to finish the project. But it is handling the situational dynamics that is the issue. Those aspects weren't part of my plan! However, project management technique has an approach for how to handle change requests. My intuitive static contributes the preference for thinking problems through which is useful here and should help thought in changing plans. My judging preference leads me to want an orderly life. And this fits well with the themes of project management.

Example 6: Strategic reading



Explanation (Mark Proctor perspective)

What influences my strategic reading practice and how can I do better?

In this example, I used the SDD model to analyse the complex relationship I have with strategic reading.

Why focus on strategic reading?

I have been using strategic reading approaches for 10 years since I attended a reading workshop. However, I think that my effectiveness in doing this varies because I do my reading in bursts - sometimes I'm happy with my approach and other times I'm not so happy with it - which makes me question the way I priorities my time and manage it. So, I wished to identify rapid reading processes to consider how I use them. I wished to identify why I approach reading in the ways I do. I also wished to uncover related strategies that I have adopted and embedded in my decision-making processes as tacit knowledge. By doing this, I wanted to decide if I was happy with my approaches or evaluate new ways of working.

My approach for the 'Situational Analysis' side of SDD model.

By reflecting on what I learnt in a strategic reading workshop 10 years ago using the STARL-P framework, I was able to identify strategic reading processes to include in the model.

Almost all of these were placed on the 'Situational Analysis' side of SDD model. The exception was the statement 'Alertness level influences speed and effectiveness' which was dispositional, so this was placed on the 'Person profiling' side of the model in the 'You (Dynamic)' section.

My approach for the 'Person Profiling' side of the SDD model.

I believed that I needed to use a 'deeper' reflexive approach to understanding why I do things. To be able to uncover this type of information fully, I needed to draw on knowledge that I had gained by completing several styles questionnaires: for learning styles; for personality styles; for leadership styles; and for management styles. I also needed to draw on my personal and professional life-stories to uncover my values, my beliefs and my life-positions; all in a focused and useful way. Some information I wanted would be about 'You (Static)', which included: core values; beliefs; life-positions; and dominant personality traits. Other information I wanted would be about 'You (Dynamic)', because they were affected by the environment, such as: my feelings, my attitudes, and my motivation levels.

So I interviewed myself using a number of critical questions. I created the questions to help me reveal this type of information in relation to prioritising my time, managing my time, and reading in the way I do.

I tailored these questions to be in the context of work. Questions included: Consider times when you have, as well as have not, used strategic reading at work. Answer the following questions, then consider their impact on your strategic reading using the SDD model:

In one sentence, as a mission statement, describe a personal reason for doing your job? What is it that makes reading so important? What are your core beliefs which you use to prioritise reading the way you do? What are your core beliefs which you use to balance time? What are your dominant approaches to reading? How would you describe your dominant strategic reading style? What needs to happen for you to be able to do your job and use reading in an effective useful way? What other needs do you have generally?

Make a list of things which interrupt you whilst reading. Make a list of reasons why you value reading. What distracts you from your plan? What is it about you which drives you to succeed at work? What demotivates you? What motivates you? How do these affect your feelings towards reading at work? What do you do to decide whether or not to read strategically? What else affects reading? How do they affect reading?

N.B. In the model, I recorded detailed strategic statements and actions to enabling me to make sense of what I had learnt here - without needing to apply the full evaluation again, and in a way which could inform my practices.

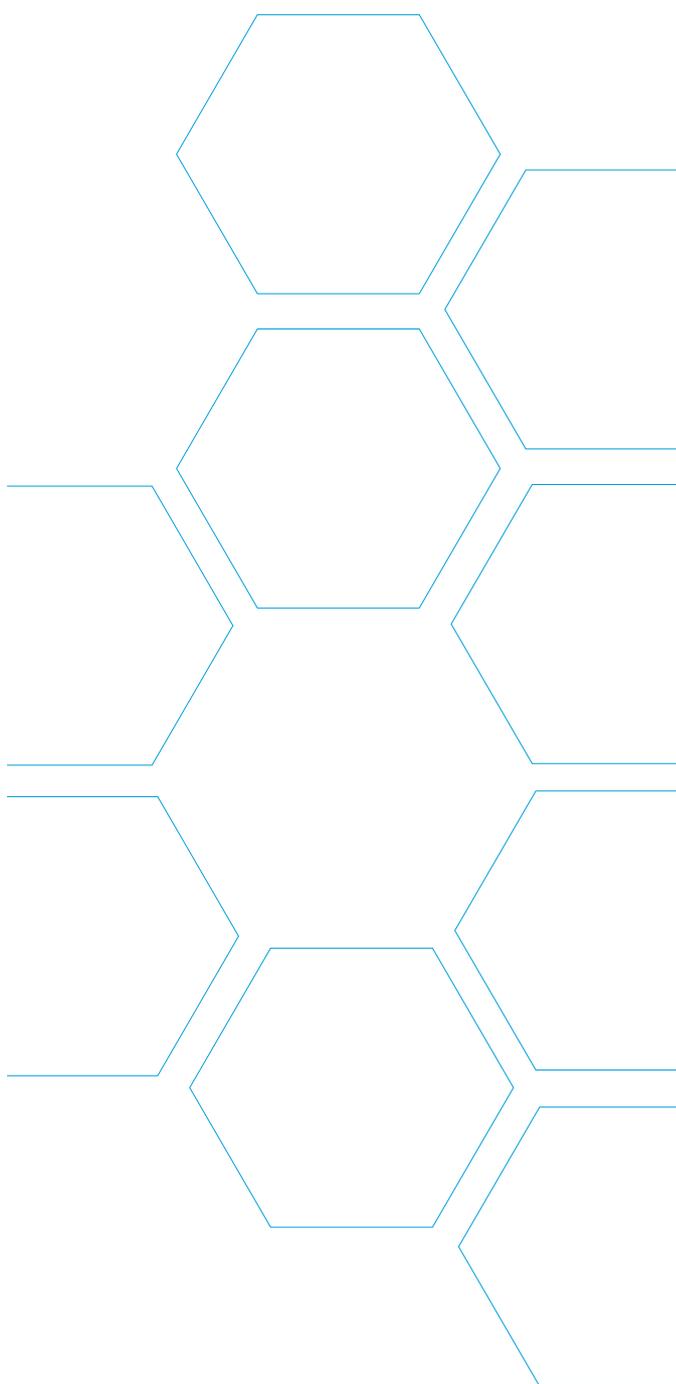
Was this useful for me?

I wished to identify strategic reading processes to consider how I use them. I use strategic reading to gather useful information quickly so I can spend more time making use of the information as I tailor it to developing workshops, etc. This has remained constant.

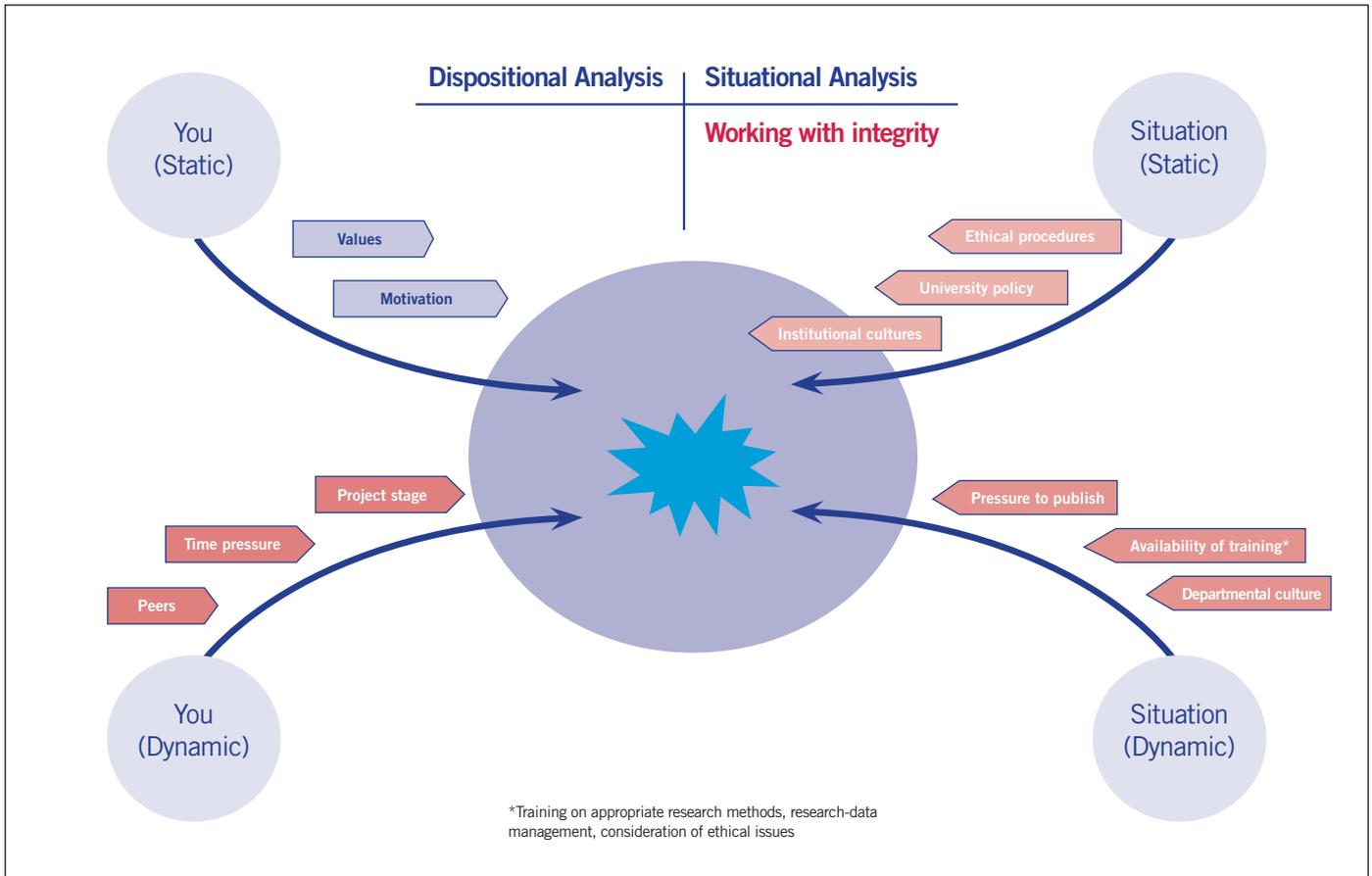
I wished to identify why I approach reading in the ways I do. I recognise that I am motivated by my core beliefs and values (from the 'you static' area). The perceived level of benefit to others truly drives me, but I need to divert my attentions at times when other activities become of greater benefit or more of a priority (from the 'you dynamic' area) - which is why my reading time occurs in bursts of time.

I also wished to uncover related strategies that I have adopted and embedded in my decision-making processes as tacit knowledge: I use a pragmatic approach (from the 'you static' area) so I just try something and evaluate it for the next time, and the reading in bursts seems to work relatively well for me and my job. So, I have continued to work in this way for a long time without thinking about it very much. Also, the dominant cost-benefit analysis to me and others also seems to be a generally useful strategy.

By doing this, I wanted to decide if I was happy with my approaches or evaluate new ways of working: I generally do the best I can with the time I have and I'm relatively happy with the way I appear to be working from the SDD model as well as what I finish up with. Ok, so dynamic factors influence this, but the approach seems to be working in the long term. So, yes I am generally happy for now. For that reason, I will probably not change my long term strategies.



Example 7: Working with integrity



Explanation (Gail de Blaquiére)

Situation (Static):

Static elements in this situation would be the prevailing research culture including policies, procedures and training outlining a requirement for and level of research integrity required by all at the institution.

Situation (Dynamic):

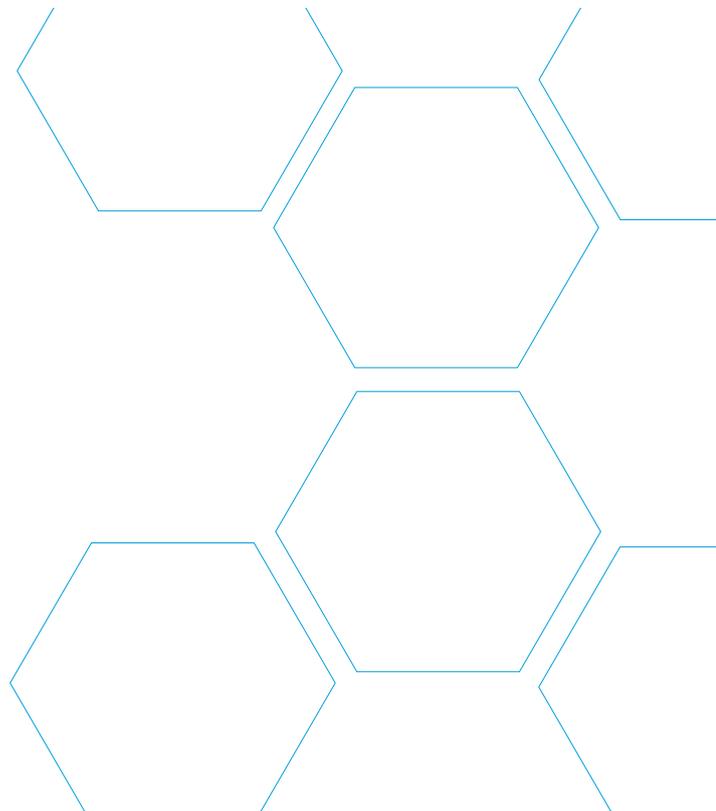
External dynamics could affect an individual e.g. the pressure to publish. Research culture in individual groups may influence decisions. Availability of training and support may vary.

You (Static):

Static elements in this situation would be provided by your own values and personal motivation based on prior experience and training. This would provide a specific and individual level of moral integrity.

You (Dynamic):

Dynamic elements which may affect the situation could include your level of experience, time available for your project and the effect on your behaviour of fellow peers.



Facilitation of Experience Recording: using different E-systems⁴⁸

In the 'Experience Recording System' section earlier in this guide, two activities are briefly described that relate to using e-systems in experience recording. This section provides additional information regarding the two activities described.

Experience recording: utilising e-systems researchers currently use

Consider how researchers can 'hijack' the electronic systems they currently use to apply to experience recording. The SAMR model (Ruben Puentedura)⁴⁹. SAMR is a simple to understand framework which has been used to evaluate mobile learning technologies in other teaching contexts⁵⁰ and is useful for this context as well. The example below explains and illustrates the SAMR acronym by considering a starting point of using a 'pen and paper' approach to experience recording and then asking what might be Substitution, Augmentation, Modification and Redefinition of 'pen and paper' in e-terms and of what additional opportunity that might provide.

The SAMR acronym stands for:

- **Substitution** of pen and paper approaches
 - e.g. word processing or note-taking applications. This may be more convenient to, but offers no added value over traditional pen and paper approaches.
- **Augmentation** of pen and paper approaches
 - e.g. reflections can be shared using social networking or collaborative tools. You could use google docs, email, a blog, or e-portfolio to gather feedback from others. This offers the chance to validate your thoughts after the main reflective process, but little else if the purpose is to use these technologies to share reflections and gain feedback.
- **Modification** of pen and paper approaches
 - e.g. reflections can be co-constructed in real time or asynchronously with a wiki based approach using collaborative tools such as a google docs. The other people support you in gaining a better understanding as you conduct your reflections. Possibly by taking on the role of a virtual coach to provide you with ongoing critical questions to direct deeper evaluations. Possibly to offer their own reflective commentaries on a situation if they were there so you can discuss and compare stories to co-construct your understanding. And this partnership approach, as part of a community of practice, promises to offer a very critical approach.

- **Redefinition** of pen and paper approaches
 - e.g. reflections can be built into story based approaches using alternative multi-media/social-media technologies; possibly in combination with making an object, or generating a collection of objects. This could be directly compared to the creation of exhibits for an art exhibition and is a form of self-expression. The idea is to create something as a metaphor for a critical incident, or a series of incidents in a life-changing story. So, this will enable you to tell your story. It is worth stressing that you could use text to describe your story; however, you could equally well capture your story in any format, such as in: audio; video; photographic; cartoon; and storyboarding formats.

And once you have described the SAMR model, your researchers should be able to map any electronic systems to different areas of the model easily. This will enable them to quickly start using these systems as recording devices.

Experience recording: utilising additional e-systems, the Padagogy Wheel

The following activity will cement what the researchers have learnt from the first exercise, in exploring the use of their current e-systems for experience recording and offer them further options for using different electronic experience recording systems. The idea here is to explore the Padagogy Wheel⁵¹ with your researchers (Figure 10).

The beauty of the Padagogy Wheel is that electronic systems are grouped together in categories and mapped to Bloom's learning taxonomy. So, researchers are able to examine a whole suite of electronic systems to decide if they would like to try alternative 'new similar' ones in a category and explore more creative approaches using electronic systems in the Evaluate and Create categories.

48. Lead author of this section Mark Proctor

49. Common Sense Education (2014) Ruben Puentedura on Applying the SAMR Model, available at: <https://www.youtube.com/watch?v=W6j8soDYoaw> (accessed 21 June 2018)

50. Romrell, D., Kidder, L. C. and Wood, E. (2014), "The SAMR model as a framework for evaluating mLearning", Journal of Asynchronous Learning Networks, Vol. 18 No. 2, pp. 1-15.

The Padagogy Wheel V4.1

<http://tinyurl.com/posterV4>



Use it as a series of prompts or interconnected gears to check your teaching from planning to implementation

The Attributes Gear: This is the core of learning design. You must constantly revisit things like ethics, responsibility and citizenship. Ask yourself the question what will a graduate from this learning experience 'look like', i.e. what is it that makes others want to work with you? What are the skills they need to support these attributes and capabilities?

The Motivation Gear: Ask yourself "How does everything I build and teach give the learner autonomy, mastery and purpose?"

The Blooms Gear: Helps you design learning objectives that achieve higher order thinking. Try to get at least one learning objective from each category. Only after this are you ready for technology enhancement.

The Technology Gear: Ask "How can this serve your pedagogy?" Apps are only suggestions, look for better ones & combine more than one in a learning sequence.

The SAMR Model Gear: This is "How are you going to use the technologies you have chosen?"

I would like to thank Tobias Froschmidt for the idea of the gears. Tobias is a teacher & works for the State of North Rhine Westphalia, School Development Baden-Württemberg (LS), Germany

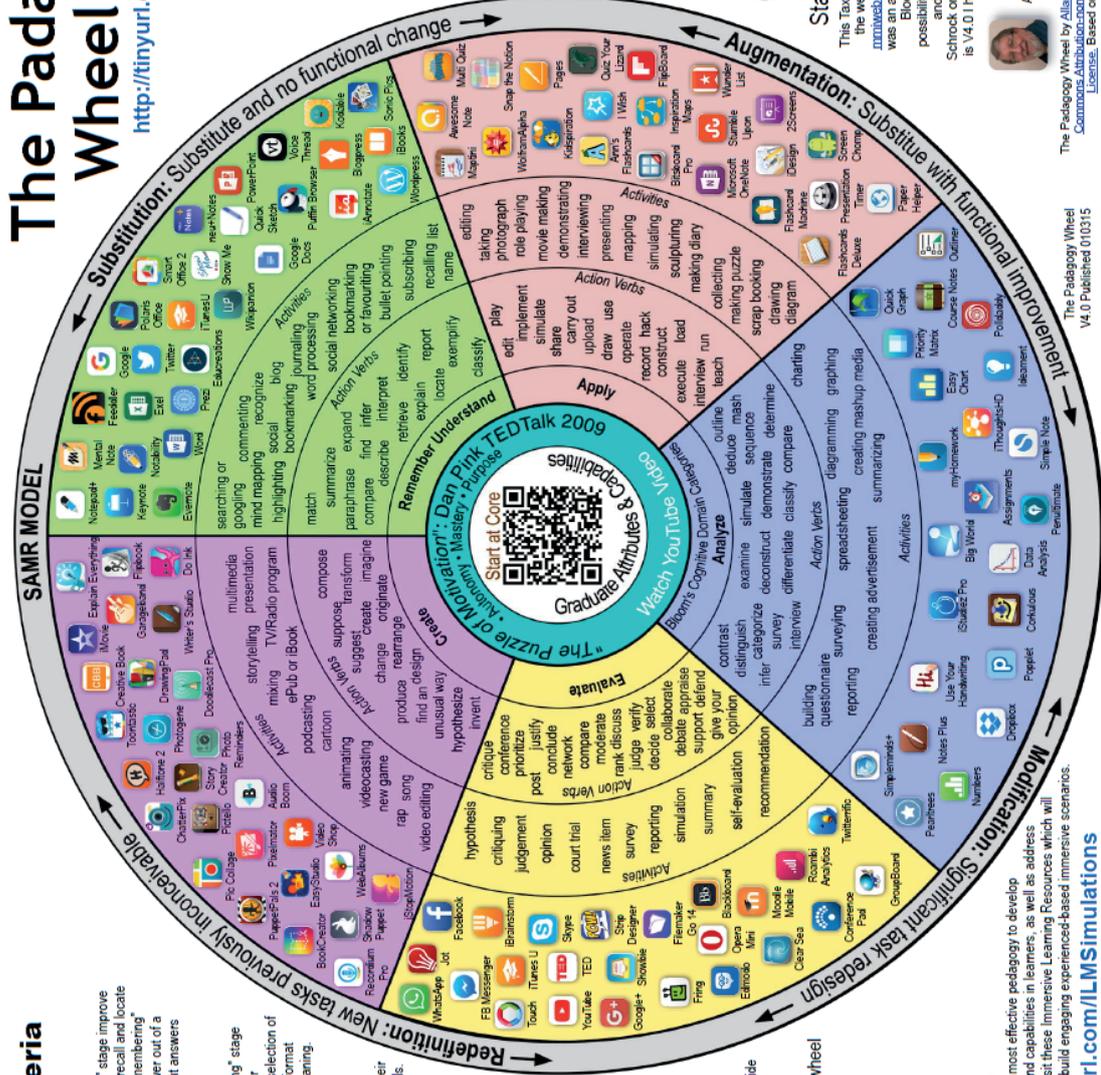
Allan Carrington

The Padagogy Wheel First Language Project: 21 languages are planned for 2016. For the latest languages see <http://languageproject.com>

Standing on the Shoulders of Giants

This Taxonomy wheel, without the apps, was first discovered on the website of Paul Hopkins's educational consultancy website www.webzoo.uk. That wheel was produced by Sharon Arley and was an adaptation of Kathiwhi and Anderson's (2001) adaptation of Bloom (1956). The idea to further adapt it for the pedagogy possibilities with mobile devices, in particular the iPad. For V2.0 and V3.0 I have to acknowledge the creative work of Kathy Schrock on her website [Bloomint.com](http://www.bloomint.com). For the major revision that is V4.0 I have to thank the team of ADECS who created AP-PIC the App Lists for Education Project which has now closed

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App Selection Criteria

- Remembering Criteria**
Remembering: Apps that fit into the "remembering" stage improve the user's ability to define terms, identify facts, and recall and locate information. Many educational apps fall into the "remembering" phase of learning. They ask users to select an answer out of a line-up, find matches, and sequence content or input answers
- Understanding Criteria**
Understanding: Apps that fit into this "understanding" stage provide opportunities for students to explain ideas or concepts. Understanding apps step away from the selection of a "right" answer and introduce a more open-ended format for students to summarize content and translate meaning.
- Applying Criteria**
Applying: Apps that fit into the applying stage provide opportunities for students to demonstrate their ability to implement learned procedures and methods. They also highlight the ability to apply concepts in unfamiliar circumstances.
- Analyzing Criteria**
Analysing: Apps that fit into the "analysing" stage improve the user's ability to differentiate between the relevant and irrelevant, determine relationships, and recognise the organisation of content.
- Evaluating Criteria**
Evaluating: Apps that fit into the "evaluating" stage improve the user's ability to judge material or methods based on criteria set by themselves or external sources. They help students judge content reliability, accuracy, quality, effectiveness, and reach informed decisions.
- Creating Criteria**
Creating: Apps that fit into the "creating" stage provide opportunities for students generate ideas, design plans, and produce products.

Immersive Learning at the core of the wheel is the New Instructional Design

Simulations are the most effective pedagogy to develop graduate attributes and capabilities in learners, as well as address motivation. Please visit these Immersive Learning Resources which will help you design and build engaging experienced-based immersive scenarios.

<http://tinyurl.com/ILMSimulations>

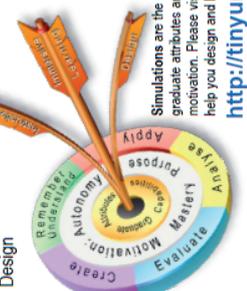


Figure 10: The Padagogy Wheel

51. Carrington, A. (2016), "The Padagogy Wheel English V5", available at <https://designingoutcomes.com/english-speaking-world-v5-0/>. (accessed 21 June 2018)

Acknowledgments

This guide is based upon the development of initial ideas first presented by Dr Tony Bromley at the Vitae International Researcher Development Conference 2016 in the workshop:

Bromley, T., [2016] *'Flipped Development: From passive to active development'* Vitae Researcher Development International Conference 2016, Manchester, 12th -13th September.

The presentation at the Researcher Education and Development Scholarship 2018 conference:

Bromley, T., [2017] *"Rethinking Skills: the Dynamic Development Model"* Researcher Education and Development Conference, October 12th 2017, University of Leeds.

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<https://www.sdduonline.leeds.ac.uk/dynamic-development/>

