

# A Model of Practice in Special Education: Dynamic Ecological Analysis

Barbara Hannant, Dr Eng Leong Lim and Ruth McAllum  
RTLB, Kelston Intervention Team, Auckland

## ABSTRACT

Dynamic Ecological Analysis (DEA) is a model of practice which increases a teams' efficacy by enabling the development of more effective interventions through collaboration and collective reflection. This process has proved to be useful in: a) clarifying thinking and problem-solving, b) transferring knowledge and thinking to significant parties, and c) encouraging critical self-reflective practice and growth within a team of practitioners in the field of special education. Key factors influencing the viability of this process in a team are the diversity of the team, group dynamics and the role of the facilitator/presenter. Through transformative learning, DEA enables practitioners to continually enhance the standard of practice which in turn leads to improved outcomes for learners.

## Practice paper

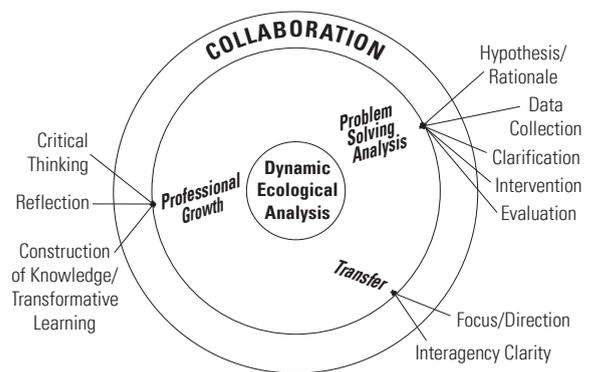
**Keywords:** *Collaboration, dynamic, ecological assessment, special education, transformative learning*

## INTRODUCTION

Practitioners of special education in New Zealand work with children, their teachers and the school communities in an ever-increasingly complex environment. Many students are affected by conditions which are multi-dimensional, interwoven with multiple issues, and influenced by different persons, all of which creates a tangled, multi-layered web. Taking an ecological approach, it can be very difficult to unpack the relevant dimensions and develop an intervention which addresses the underlying issue. In addition to this, introduce the diverse agencies and professionals, all approaching the situation with different sets of service criteria, practices, philosophies of working and professional standards, and it is no wonder we sometimes reach a situation marked by confusion, frustration and despair.

As part of ongoing professional development and training, the Kelston Intervention Team uses a model of practice, which we call Dynamic Ecological Analysis (DEA) to enhance our practice

and increase our effectiveness in working with the referrals we receive. The team has found that by using this model, we are able to develop more effective interventions by a) clarifying thinking and problem solving b) transferring knowledge and thinking to all significant parties and collaboratively construct an inclusive plan and c) encourage critical reflective practice within the team which in turn allows for professional reflection and growth. Diagram 1 illustrates this process.



Lim, Hannant & McAllum, 2010

**Diagram 1: Dynamic Ecological Analysis**

## The DEA Model

The term Dynamic Ecological Analysis may sound esoteric but it is actually quite simple. The process is 'dynamic' because the analysis is not a permanent construct. New information may surface at a later date. Hypothesis testing may identify inaccurate thinking. New, relevant data will obviously impact on the thinking and analysis. Furthermore, the process is dynamic because the analysis itself is generative, leading to possibilities for deeper understandings and fresh perspectives as the complexities are untangled. More importantly, this process does not end upon completion of the team session.

It is 'ecological' because through identifying and unravelling the components of the case, the discussion expands to cover ever-increasing circles of influence (Bronfenbrenner, 1979), until the team

is satisfied that all the bases have been covered. If more information is required to achieve this, this is then added to the data-gathering established at the beginning of each referral. Similarly, new hypotheses may be formed in the discussion, possibly requiring further testing through data collection and analysis.

## THE ANALYSIS

### Problem Solving

At a scheduled meeting, one team member presents a case referral which is currently active. Their role is that of 'presenter' or person with the most information regarding the situation. Another team member facilitates the meeting. Their role is to write notes and plot a visual analysis of the various dimensions of the case as it is being presented. The facilitator and other team members ask relevant questions in order to identify the different components of the referral as well as how these components relate to each other.

The purpose of this process is to break down the complexities of a situation in order to understand and identify key issues individually and in relation to each other. Discussion is centred around identifying underlying issues and hypothesis testing. Team members are encouraged to give a rationale for their contributions or to ask questions which help clarify thinking. It is important that the discussion is focussed on understanding the nature and interactions of the components of the situation (Annan, 2005) rather than coming up with a solution, especially at the initial stage. This is to avoid the session becoming a brain-storm of "what else could be tried?". Possible interventions will emerge once there is clarity about the situation and acknowledgement of what is within our realm of influence.

As the clarification process continues, information is collated and organised into components such as family background, social issues, emotional well-being, learning issues and behaviour etc. But it is not necessarily limited to nor confined by these components. It is a flexible process and no one case will be the same as another. These categories are determined by the nature of the information shared and discussed.

At an unpredictable point in the process, clarity emerges with deeper understanding of the complex interrelationships between the component categories. Recognition of incomplete information and need for further investigation may lead to seeking expertise and support in a particular area. These emerging understandings and the processes of DEA can be better understood through a concept called 'transformative learning theory'

(Kitchenham, 2008; Mezirow, 1991, 2000). This will be discussed in more depth later.

The end result of this process is a visual diagram which is able to link the various components of the case referral. The links do not imply a causal relationship but it does suggest influence and inter-dependence (Annan, 2005). To determine the strength and quality of the links, access to research and theoretical knowledge of the components are essential. To develop this visual diagram, each component is supported by relevant data collected and collated from several sources to triangulate its reliability. The links are then evaluated to consider whether the visual representation, taken as a whole, is able to help clarify and explain why the presenting issues are of concern.

### Transformative Learning Theory

Within transformative learning theory, a framework of describe, inform, confront, and reconstruct breaks the learning process into component phases and creates a moment for learning. During the 'describe phase' the presenter outlines what is currently known. As the 'presenter' describes the situation, they subtly reveal the beliefs, values and pedagogies which inform their practice. The 'inform phase' of transformative learning theory suggests that these are identified and acknowledged. The 'confront' phase is when the presenter identifies their own unconscious assumptions and unspoken voice. Within DEA this phase is most powerful as the diversity of the team brings different perspectives to the process. These different perspectives combine with a wealth of experience and understanding of research and theoretical literature. During this phase, deeper understanding emerges and new directions unfold as team members confront their own thinking using the perspectives and insights of others. The 'reconstruction phase' involves the rebuilding of understanding, including new insights and prepares the presenter for the process of collaborative problem-solving and transfer of understanding to the school and family environments and interagency groups.

Within DEA this transformative learning process is not sequential but dynamic, with each phase merging while thinking evolves. Team members within a DEA cycle feel empowered in terms of their understanding of the case being reviewed and in terms of their own practice. Through the DEA process and reflective practices, team members refine or elaborate on their current understandings, learn new ways of viewing a situation, and open up possibilities for assimilating different ways of approaching a situation and transformation of current practices (Kitchenham, 2008; Mezirow, 1991, 2000). The process is transformative.

## Transfer

The second arm of the DEA model is a process of transference. The thinking is now transferred to significant others involved in the referral. This model of practice needs to be fluid, collaborative and open (Thomson, 2004). By including professionals from other agencies in our team sessions, we aim to be transparent and inclusive.

The need to transfer this thinking into the field is a critical part of the DEA model because in many ways this is where thinking is validated (or not). Presenting the thinking to significant others involved with a student makes the process more robust and empowering. This process is very much collaborative and the practitioner presents the analysis and thinking with the aim to increase understanding. In order to achieve this, critical input and dialogue is encouraged around the presenting framework. This is not the case of an "expert" presenting their "findings" but rather a summary of a collective process of information gathering, which has been collated and sorted for clarity and cohesiveness. During this collaborative process, there is an agreement on what the vital issues are and then the next step is to address these with the range of available agencies and their services.

Centering the discussion with significant others around the analytical framework does two things. Firstly, it focuses everyone's thinking around the vital, underlying issues and facilitates problem-solving. This prevents a particular agency from unnecessarily dominating (or withdrawing from) the intervention plan. Secondly, as in the original team session, discussions are not personal and blame is not attributed. This eliminates defensive, destructive dialogue and encourages participation.

## Professional Growth

The third arm of the DEA model is that of professional growth. Professional growth is a process which necessitates the critical examination and reflection of one's practice. It is generally agreed that someone needs to be willing and prepared to change in order to channel this growth but the difficulty is in how to facilitate this. We often do not know what we do not know.

Reflective, professional growth comes from critically analysing one's own practice and justifying our professional knowledge. The constructive process of identifying where improvement is needed, and learning about what skills are required, is the first step in improving performance.

The DEA model provides a setting whereby professional decisions and actions (pedagogy) are critically examined in a supportive and constructive environment. Because the process is not personalised, it removes the feeling that one is being scrutinised. When we feel professionally safe, it enables us to expose and render ourselves vulnerable. Only in this state of vulnerability can we be truly reflective.

The collaborative nature of DEA allows for the development of distributed and individual knowledge through interaction between members of varying levels of expertise and experience. If the team is to understand each others' perspectives and develop shared goals, it is important that constructive and focused dialogue takes place, through exploring the assumptions participants bring to the table and by clarifying and critically examining the views of others. Annan, Bowler, Mentis & Phillipson (2008) call this creating a balance between commonality and diversity.

DEA allows for a comprehensive understanding of professional action to take place. This develops informed practice and lays the groundwork for reflection which in turn results in self-understanding. Decisions are made with deliberation rather than because 'that's how we've always done it before' or a 'quick fix' reaction. Constructive dialogue (Annan et al., 2008) allows for participants to listen to each other, understand their viewpoints, justify, defend and validate concerns, clarify their own view of the dimensions of the case, discover meanings that might otherwise be missed and develop a new frame of reference. This brings clarity to the situation and provides a framework to enable an integration of newfound information with existing knowledge which promotes an evaluation of different choices and alternatives.

## MAKING IT HAPPEN

The viability and effectiveness of DEA is dependent on a) the team of persons involved, b) the role of facilitator and team member presenting the case referral and c) the group dynamics of the meetings, e.g. group size, frequency of meetings.

The aim of DEA in a team discussion is to develop clarity and problem solve through dialogue among participants with diverse points of view, knowledge and expertise. This requires careful facilitation. Diversity adds value to the process in providing a range of experiences, professional practice, philosophical background, personalities, and cultural perspectives.

DEA works best within a Community of Practice model (Wenger, 1998). The DEA model works as a transformative learning process because of the nature of the team. Four key characteristics contribute to the community of practice environment. Firstly, a disposition of openness has been carefully nurtured within the team so that all members feel safe in contributing ideas, sharing successes and seeking support for difficulties and confusions. Secondly, each team member feels valued and secure in their model of practice. Because members feel respected they are willing to share their unique perspectives and experiences knowing that diverse opinions are encouraged and welcome. Thirdly, the team has purposefully fostered the diverse strengths of the members and an inclusiveness of different cultures, philosophies and approaches to practice. Fourthly, the team shares similar goals for effective practices. There are common values for special education and a shared desire for partnership in professional practice. These four characteristics of the team enable individuals participating in DEA to engage in critical reflective practice to identify and examine their hidden assumptions and reshape their professional practice.

The process of examining each component of the framework necessitates colleagues to question, in order to obtain and clarify the information required. However, it is important to note here that whilst a colleague may question why a decision was made or action taken, once an answer is given, and clarified, it is accepted. The process is not an interrogation or an appraisal of professional practice, it is about understanding. Therefore, it is important that in this particular forum there is no criticism or personal opinion regarding professional practice. This would undermine the constructive process. When things become personal we feel threatened and we either withdraw or become defensive. Either way, we stop listening.

The facilitator takes responsibility to guide the effective use of DEA. The success of the thinking and analysis is determined by the skill and application of the facilitator. This emphasis takes the 'pressure' off the key team member presenting the details of the case and allows them to focus on describing the details and providing information without worrying about sequence, order or priority. Several frameworks are available to unpack the relevant layers e.g. ecological approach (Bronfenbrenner, 1979), Te Wheke (Pere, 2010, cited in New Zealand Government, 2010), Te Whare Tapa Wha (Drurie, 2010, cited in New Zealand Government, 2010). Whatever approach is taken, the framework and analysis must relate to the original presenting issues.

Each component has to be validated by relevant multi-source data. The process continues until a visual diagram covering all the main components is developed by the team. This collaborative effort brings participants together to a common understanding and thinking.

For any team to collaborate effectively there needs to be a clear understanding of what the group is trying to achieve and commonly-understood norms/rules of conduct. Members need to feel they are respected, have a voice and that their input is valued. Acknowledgement of the group dynamics (commonalities and diversity) needs to underpin the framework so that this is possible (Annan et al., 2008).

Another factor for a successful DEA is the number of people in the discussion. Too many people, and members lose their voice; too few and you lose the diversity which is key to the strength. Members need to be chosen for their vested interest in the case or for the knowledge, experience and expertise which they can contribute. There is not really an ideal number of participants as this will vary depending on the complexity of the case and the number of agencies involved. In our team, meetings are regularly held with between five and 11 team members.

The dynamic nature of DEA means that changes in the group can occur at any time in the case and also acknowledges the constantly changing dimensions. It is a living process which changes as new information comes to light. Also, group participants may come and go. New participants bring fresh knowledge and viewpoints, and challenge established practices while established core members of the team protect the integrity of the practice and the most fundamental sets of knowledge (Annan et al, 2008). Inexperienced team members contribute at the periphery and are scaffolded until they are familiar with the process.

With practice, teams will improve in their use of the DEA and this will lead to better outcomes for students, families, teachers and schools.

## CONCLUSION

The Dynamic Ecological Analysis, as outlined in this report, is one model of practice which the Kelston Intervention Team uses to clarify thinking and enhance our effectiveness as practitioners in special education. The benefit of this exercise for practitioners of special education ultimately lies in the identification of more effective interventions through a thorough analysis and understanding of the presenting situation. Intervention plans are designed not only collaboratively with those

working with the student concerned, but are underpinned by dynamic, rigorous, ecological analysis.

Subsequent, but no less valuable, benefits come in the form of the professional growth which ensues as a result of the critical thinking, knowledge transfer and reflection that the process encourages. This allows us as the Kelston Intervention Team to continually improve on the standard and quality of our practice and ultimately effect changed learning outcomes for students with learning and behavioural needs in our schools.

## REFERENCES

- Annan J. (2005). Situational analysis. *School Psychology International*, 26(2), 131-146.
- Annan J., Bowler J., Mentis M., & Phillipson R. (2008). Understanding diversity in educational psychology teams. *School Psychology International*, 29(4), 387-398.
- Bronfenbrenner, U. (1979) *The ecology of human development. Experiments by nature and design*. Cambridge, MA: Harvard University Press.
- Kitchenham, J. (2008). The evolution of John Mezirow's transformative learning theory. *Journal of Transformative Education*, 6(2), 104-123.
- Mezirow, J. (1991). *Transformative dimensions of adult learning*. San Francisco, CA: Jossey-Bass.
- Mezirow, J. (2000). *Learning as transformation: Critical perspectives on a theory in progress*. San Francisco: Jossey Bass.
- New Zealand Government. (2010). *Maori Health. Addressing Maori Health*. Retrieved February 16, 2010, from New Zealand Government Website: <http://www.maorihealth.govt.nz/moh.nsf/0/1c22c439ddc5f5cacc2571bd00682750?OpenDocument>
- Thomson, C. (2004). How to make "what works" work: A role for the resource teacher learning and behaviour. *New Zealand Annual Review of Education*, 13, 249-269.
- Wenger, E. (1998). *Communities of practice: Learning meaning and identity*. Cambridge, UK: Cambridge University Press.

## AUTHORS' PROFILES

**Barbara Hannant**



**Barbara Hannant** works as a Resource Teacher: Learning and Behaviour for the Kelston Intervention Team. Her extensive teaching background includes both mainstream and special education and ranges across primary, intermediate and secondary sectors. Barbara is currently completing her Masters in Education and utilises Dynamic Ecological Analysis as a framework for her practice.

EMAIL  
bhannant@kit.ac.nz

**Dr Eng Leong Lim**



**Dr Eng Leong Lim** is an RTLB and psychologist in the Kelston cluster, Auckland. He has been in the field of education for over twenty years as a teacher and has been with the RTLB service since the beginning of the programme. He has since completed a PhD with research on numeracy. Other areas of interests include systemic work, supervision and culture.

EMAIL  
ellim@kit.ac.nz

**Ruth McAllum**



**Ruth McAllum** specialises in working with Hidden Gifted Learners for the RTLB Kelson Intervention Team. She is currently completing a thesis for her Masters of Teaching and Learning, and exploring change management and negotiated learning opportunities.

EMAIL  
rmcallum@kit.ac.nz