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In the early 1990s, Allen Burton and Walter Davis published two articles presenting new ways of including children with physical impairments in movement and physical activities, in theory and practice. They called their model *ecological task analysis* (ETA). In 1997, some fifteen years later, Human Kinetics published an anthology, *Ecological Task Analysis and Movement*, an anthology edited by Walter E. Davis and Geoffrey B. Broadhead from School of Exercise, Leisure and Sport, Kent State University. The new book represents an attempt to advance and develop the ideas of Burton and Davis, and to present a model for learning motor skills that will replace traditional forms of authoritarian teaching. The new model promotes student choice and empowerment. The editors see this as a new paradigm, but our reviewer Ingegerd Ericsson is doubtful. She points out that large chunks of the ETA model can be found in existing teaching approaches, as well as in the PE practices of at least Swedish teachers – without putting the ETA label on it.

## New ways of learning motor skills

Ingegerd Ericsson

Dept. of Sport Sciences, Malmö University

Walter E. Davis & Geoffrey D.  
Broadhead (eds.)

### **Ecological Task Analysis and Movement**

322 pages, hardcover.

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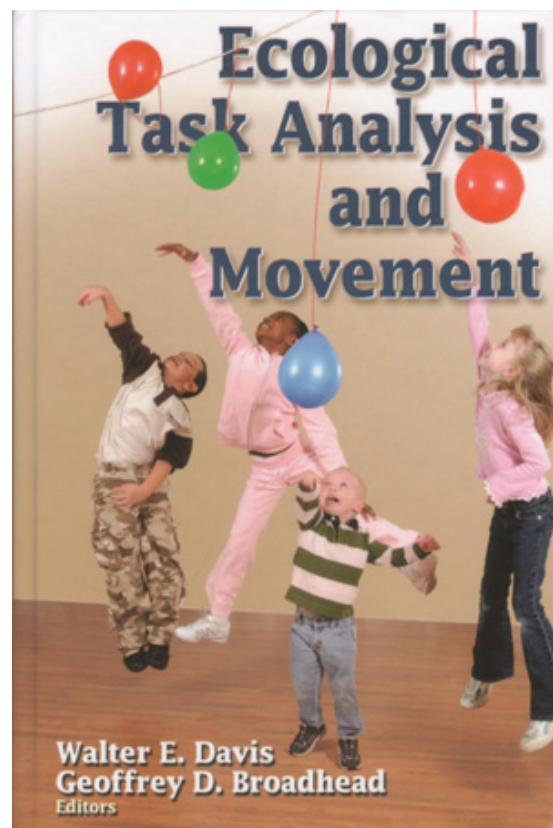
Walter Davis and Geoffrey Broadhead are the editors of a book that describes the Ecological Task Analysis (ETA) model of understanding human movement. The model was originally developed by Allen Burton and Walter Davis (Davis & Burton, 1991; Burton & Davis, 1992). The book promotes the ETA model as a tool for those who observe, study, instruct, or participate in physical activity and it is presented as a window through which the vision of movement can be broadened.

In all 26 authors have contributed with different approaches to the ETA model. The book has 13 chapters, all of which end with a short summary. For the reader it would have been interesting to get a somewhat more detailed presentation of each author, to facilitate the reading and to help choosing focus among the chapters. An index helps the reader

to get explanations of many concepts in the book; although some readers might get the feeling that some are missing. The index might have gained in value if also such concepts as the prominent ABA approach were included.

The book is organized into two parts:

1. Strengthening the Foundation of Ecological Task Analysis



## 2. Enhancing Instruction Using Ecological Task Analysis

An introduction highlights the connections between the parts and the chapters.

In part 1 the authors investigate and discuss the theoretical framework of the model. The movement constraints theory (Newell, 1986) which is one of the bases of the ETA model is described by Karl Newell and Kimberlee Jordan. Important to the development of ETA was also Bernstein's physical and neurophysiological approach, dynamic systems and James Gibson's (1979) ecological psychology. Burton and Davis provided a variation to Newell's view of task by emphasizing the goal aspect of task.

The ETA applied model includes four fundamental procedures or steps, which are described in the prologue and referred to by several of the authors:

1. Establish and clearly specify *task goals* by structuring the physical and social environment.
2. Give *choices* regarding how to solve the movement goals.
3. Manipulate *task variables*, easier (for success) and more difficult (for challenge).
4. Provide *instructions*.

Whithall, Sanghvi, and Getchell make a point that a well-documented characteristic of children with learning disabilities is the lack of competence in motor skills. They examined perception-action judgements, i.e. how children made decisions in a perception-action task, and found that the decision time for correct performance was longer for children with learning disabilities than for others. A pedagogical conclusion is thus that children with learning disabilities should be given a little more time to perform optimally.

The chapters in part 2 give several examples of how the ETA model can be used as an empowerment approach to learning, since participant empowerment and decision making are central in the model. Kidman and Davis write about how teachers in physical education can act as guides rather than directors, e.g. through alternative solutions can invite students to choose how to achieve different task goals. Other authors describe decision-making opportunities for learners with disabilities, compensatory strategies in pediatric physiotherapy, promote the role of the therapist as a team member, and emphasize the cognitive element of ETA.

The final chapter is an important contribution by Wall, Reid, and Harvey who discuss the Knowledge-Based (KB) model and its interface with ETA in assessment and instruction, pointing out some significant differences, but also several areas of agreement between the both approaches. According to the KB model the individual acquire five types of knowledge about physical actions, namely

1. Declarative knowledge
2. Procedural knowledge
3. Affective knowledge
4. Metacognitive knowledge (self-awareness)
5. Metacognitive skills (self-regulation).

Even though the KB and the ETA approaches have different theoretical orientations they are quite similar in practice since the factors *person, task, and environment* are important concepts in both frameworks. Both models focus on the specific needs of each individual and emphasise problem solving in context, since physical activities are considered to be goal directed.

In the prologue it is stated that the ETA applied model is in contrast to the teacher-directed approaches that dominate the current education system and that it is an open ended model that is necessary in the ever-changing context of the dynamical learning process. ETA requires competent, critically thinking practitioners and is believed to be more efficacious than the teacher-directed approach in physical education, the categorical approach in special education and adapted physical activity, and also than the prescriptive approach in therapies, all of which still dominate today. Here some important questions arise: Is this really true? Is it true that ETA is more efficacious than other approaches? Is it true that the categorical approach dominates adapted physical activity and that the teacher-directed approach dominates in physical education?

From my point of view, as a teacher in Physical Education and a lecturer in Sport Sciences, I ask myself: What is new and what is special about the ETA applied model? Is it really a new paradigm for teaching and coaching? I do not think so; talking about it as a new paradigm is going too far. My impression is that many PE teachers, at least in Sweden, already use the ETA model or parts of it, maybe without having knowledge about it or knowing what it is called. I also find that the ETA approach in many ways resembles or relates to other teaching approaches, which can be found for example within the KB model (Wall, Reid & Harvey, 2007), Sport Education, and in the situated learning theory (Lave & Wenger, 1991). Steve Mitchell and Judy Oslin draw parallels with the Teaching Games for Understanding (TGfU) model and with their own work on the Tactical Games Model, where also references to the work of Light and Fawns (2003) and Light (2006) might have been useful.

The most important contribution of the book *Ecological Task Analysis and Movement* is, in my opinion, its good structure and well documented research support within the ETA framework, that bring about relevant arguments for understanding and explaining some of the didactic qualities of not only the well described examples of good teaching in this book, but also of much good teaching and coaching already going on in many Physical Education lessons.

In the best of worlds we may come to a combination of the ETA and the KB models, where all effective teachers and instructors know that they should approach learners who have negative feelings of physical self-efficacy in a more careful and considerate way than with those who already have high confidence due to acquired physical proficiency.

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