APPLICATION OF THE PERSON-ENVIRONMENT-OCCUPATION (PEO) MODEL IN SCHOOL-BASED OCCUPATIONAL THERAPY

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INTRODUCTION
Over the last two decades, a renaissance of occupation as the core of occupational therapy has contributed to the development of a number of occupational therapy models (Law & Barker Dunbar, 2007; Polatajko et al., 2007). Occupational therapy models are a way of structuring and understanding the often complex and 'messy' realities of practice (Turpin & Iwama, 2011). Within practice, it is a way of making sense of the person as an occupational being which then informs our occupational therapy involvement. These models share common key elements, usually consisting of the person, environment and occupation (Polatajko et al., 2007). However, how these individual elements are conceptualised in detail and their interactive relationship with each other differ considerably between models (Polatajko et al., 2007). During the same timeframe, the schooling of children with disabilities underwent considerable changes as children with a range of different disabilities and needs started attending regular mainstream school. This has lead to an increasing number of occupational therapists providing support and services within the less familiar educational setting. Senior school-based occupational therapists emphasise the importance of considering the child, environmental factors within the school context and key elements of typical school occupations in their assessment as well as intervention (Hasselbusch 2007, Hasselbusch & Penman 2008); however, this could be conceptualised slightly or considerably differently, depending on the occupational therapy model chosen by a practitioner.

The focus of this article will be on the application of the Person-Environment-Occupation (PEO) model (Law et al., 1996) in occupational therapy services for children with varying abilities and disabilities, who are attending a regular, mainstream primary school. The PEO model was developed by a group of Canadian practitioners and researchers and has been used in a range of different settings with a wide variety of client groups (Law et al., 1996; Law & Barker Dunbar, 2007; Strong et al., 1999).

APPLICATION OF CORE CONCEPTS OF THE PEO MODEL IN SCHOOL-BASED OCCUPATIONAL THERAPY
In the first part of this publication, key concepts such as the person, environment, occupation and occupational performance will be individually outlined and applied to school-based practice. The focus of the PEO model is occupational performance and how variations in occupational performance can be attributed to changes in the person, environment and/or occupation.

![Figure 1: Basic application of the Person-Occupation-Environment (PEO) model to school-based occupational therapy](image)

OCCUPATIONAL PERFORMANCE IN SCHOOL OCCUPATIONS
Occupational performance is the ability to carry out the school tasks relevant to the child's role as a student (Townsend, 1997; Townsend & Polatajko, 2007). Occupational performance in school occupations is the result of the dynamic and reciprocal interaction between the individual child, the specific school environment and the respective school occupation in question. Occupational performance is not static, but highly dynamic and changeable as the three elements interact continually across time as the student moves from one year level to the next, from nursery to primary and secondary school (Law et al., 1996; Strong et al., 1999). Greater compatibility between the child, school environment and school occupation leads to a more optimal occupational performance; while incompatibility between these three elements leads to occupational performance issues.

For example, a child may be able to follow the classroom routine if the teacher uses a visual timetable, the classroom environment is structured with a set place for tools and equipment and the peers he is sitting with provide cues as to what he should do next. This illustrates a situation where the child's abilities (person) are being accommodated by a supportive classroom set up (environment) and the familiarity of the classroom tasks (occupation) which then allows the child to perform the school work tasks (occupational performance) expected of him.

However, when this child moves into the next year level, his occupational performance may shift due to the changes in the Person-Environment-Occupation fit. He may struggle if the teacher has a more free-flowing approach to teaching where tasks change without warning, children work at different paces and...
on different tasks and the classroom does not have clear spaces for tasks or objects. In this situation, the child's ability to perform his occupations may be challenged due to the less structured classroom set-up (environment), the increasingly demanding academic tasks (occupation), and the child's slower acquisition of the understanding of the routines and expectations required by the new teacher (person).

Using the PEO model lens, occupational therapists are concerned with identifying, assessing and addressing issues with a child's occupational performance. Therefore, occupational therapy involvement is not defined by a medical diagnosis but by occupational performance issues. For example, a child with a mild hemiplegia who is able to participate fully in school life would not require occupational therapy involvement; however, a child from a disadvantaged background, but no medical diagnosis, who is struggling with playing with others during lunch break or who struggles with school work, could be appropriate for occupational therapy involvement.

**THE CHILD (P): THE PRIMARY SCHOOL STUDENT**

Each child holds specific physical, emotional, cognitive and spiritual characteristics (Law et al., 1996; Law & Barker Dunbar, 2007; Strong et al., 1999). Every student has a unique temperament and self-concept, health, skills and personality (Law & Barker Dunbar, 2007). These different attributes of the person interact with each other in a complex manner. For example, while a child may experience some challenges in terms of his or her physical skills due to cerebral palsy, a shy and withdrawn personality may more significantly influence this child's ability to assume the roles which are part of day-to-day school life, such as a learner, player and friend. Every child's occupational performance is influenced not only by their own personal characteristics, but also the classroom and wider school environment.

**THE SCHOOL ENVIRONMENT (E): THE CLASSROOM & WIDER SCHOOL ENVIRONMENT**

Once a child starts school, their school setting becomes an important, even critical, environment in which they live, learn and play. School occupations take place and are carried out within the school environment (Polatajko et al., 2007). The environment consists of contexts and situations, elements outside the person, which elicit responses from the person (Law 1991, Law & Barker Dunbar 2007). The school environment has the potential to considerably shape and influence a child's behaviour, actions and overall development. This environment can either support or inhibit the child's occupational performance in school tasks.

Schools as an institution have a distinct culture, from the educational culture which permeates every school to a specific school culture, which may focus in varying levels on academic excellence to nurturing community (Hasselbusch, 2007; Hasselbusch & Penman, 2008). Additionally, each classroom has its own culture, which is shaped by the unique values, attitudes and beliefs of the school staff, determining 'how a classroom is run' or 'how things are done around here' (Hasselbusch, 2007; Hasselbusch & Penman, 2008). For example, a school may use an approach where children do not put their hands up to talk, but just speak out when they have something to add to the classroom discussion. This could support some children who are more outgoing but may hinder a shy child from contributing to class discussions.
Figures 4 to 6: Each child/young person has a unique personality and individual temperament, as well as a range of physical skills, sensory abilities and cognitive capabilities. The child’s characteristics and interaction with the distinctive make up of the school environment and chosen school occupations, shape his or her level of occupational performance.

The physical set up and conditions of the classroom and wider school are also an important component (Law et al, 1996), including property features such as overall classroom size, classroom access and classroom furniture. Despite children growing at a different rate, classrooms often have the same size chairs and tables. While this may suit some children, they may not be comfortable or appropriate for taller or shorter children.

The social environment will also influence a child’s occupation performance. This social environment consists mainly of school staff and peers, their attitudes and social expectations. For example, in a class whose social environment emphasises academic achievement and competitiveness, the children may wish to hide their work from their peers and be less helpful to children who may be struggling with their school work. Or, if the social environment values participation in sport for all children regardless of ability, then those children who may not be so good at sport may still participate and enjoy these pursuits.

This physical, social and cultural context may either act as a support or barrier to a child’s potential occupational performance and this can differ depending on the different perspectives of the teacher, peer group, parent and child (Law et al, 1996). While some of these contexts may be obvious to the occupational therapist, such as being able to observe the chair and table heights (physical context), others may be more subtle such as a class which values sporting ability over academic achievement (social and cultural contexts). It is also important for an occupational therapist going into the classroom to differentiate between their opinions and values they place on a specific environmental features, and the actual influence of this environment on the children and school staff who work, learn and play within this context on a day-to-day basis. For example a very busy classroom with lots of artwork on the walls may be overwhelming to the occupational therapist entering the classroom; however, the children and parents may find this environment stimulating to their learning.

SCHOOL OCCUPATIONS (O): COMPLEX CLUSTERS OF ACTIVITIES AND TASKS

School occupations consist of clusters of self-directed, functional tasks and activities in which the child engages in while at school (Law et al, 1996). Within the PEO, occupation-activity-task are hierarchically structured (Polatajko et al, 2007). An activity is the basic unit of a task (Law et al, 1996), a single pursuit a child engages in as part of his or her occupational experience while at school, for example the act of writing, drawing or colouring in. A task is a set of purposeful activities (Law et al, 1996), for example writing a story which may include all of the activities outlined above.

School occupations are carried out within the context of a child’s roles at school, most notably that of a student. However, school occupations are not restricted to school work within a regular school environment, but entail a range of occupations “to meet his / her intrinsic needs for self-maintenance, expression and fulfilment” (Law et al, 1996, p.16). Within a typical school day a child will look after himself and his belongings (self-maintenance), which may include taking their coat off when they arrive, eating their lunch, getting changed for PE, regular toileting and washing of their hands throughout the day. During break times children may engage in activities of their choice and liking (expression and fulfilment), which may be playing with peers on the playground for some or reading books in the library for others.
Figures 7 to 9: The school environment, including the classroom as well as wider school environment, entailing concrete physical features and school or classroom culture, shapes and determines a child's occupational performance in typical school occupations.

Figures 10 to 12: School occupations are highly complex and typically consist of a number of functional tasks and activities. Typical school work occupations within a primary school may involve activities such as writing, drawing, cutting and gluing.
APPLICATION OF THE PEO MODEL IN SCHOOL-BASED OCCUPATIONAL THERAPY PRACTICE

This second part of the publication will outline and provide examples of the application of the PEO model at different stages of the occupational therapy process as implemented in school-based practice. The stages described in detail are congruent with key elements present in commonly used occupational therapy process models: assessment, goal setting, intervention and evaluation. Based on the PEO model, an appropriate referral to school-based occupational therapy would be related to a child struggling to perform typical school occupations (occupational performance issues). The goal of occupational therapy would be to improve the Person-Environment-Occupation fit in order to enhance a child's occupational performance.

However, it should be noted that, due to the ever changing nature of the child, environment and occupation, this fit naturally shifts throughout the course of a day, or even a school year. For example, there is likely to be a misfit during a transition to a new classroom. Occupational therapists may become involved if this misfit is considered likely or if problems persist beyond what would typically be expected, following a transition between classes.

![Diagram of PEO model](image)

**Figure 13:** Changes to the child – school environment – school occupation – fit may occur within a lesson or a school day, over the course of a typical school week or school year, and are highly likely to take place as the child progresses throughout the individual year groups.

<table>
<thead>
<tr>
<th>Classroom Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Student</strong></td>
</tr>
<tr>
<td>Specific task observed</td>
</tr>
<tr>
<td>Task specifications (e.g. instructions)</td>
</tr>
<tr>
<td><strong>PEO Model Elements</strong></td>
</tr>
<tr>
<td><strong>Person</strong></td>
</tr>
<tr>
<td>Motor, process, communication skills</td>
</tr>
<tr>
<td>Temperament, personality &amp; self-concept</td>
</tr>
<tr>
<td><strong>Environment</strong></td>
</tr>
<tr>
<td>Classroom set up</td>
</tr>
<tr>
<td>Social demands</td>
</tr>
<tr>
<td>Rules &amp; expectations</td>
</tr>
<tr>
<td><strong>Occupation</strong></td>
</tr>
<tr>
<td>Stages &amp; steps</td>
</tr>
<tr>
<td>Objects &amp; materials</td>
</tr>
<tr>
<td><strong>Occupational Performance</strong></td>
</tr>
<tr>
<td>Overall comment- ability to carry out school task, and quality of performance</td>
</tr>
</tbody>
</table>

*Table 1:* Documentation form for classroom observations based on the PEO model
SCHOOL-BASED OCCUPATIONAL THERAPY ASSESSMENT:
ASSESSING THE CHILD, SCHOOL ENVIRONMENT AND SCHOOL OCCUPATIONS

The initial assessment is likely to focus on identifying occupational strengths and occupational issues or challenges (Law et al., 1996), developing an occupational profile of school activities and tasks which are part of the student’s school life, the relative importance of these school occupations for the student, school staff and parents, and occupational issues encountered. During this part of the assessment the Canadian Occupational Performance Measure (COPM) can be used to identify and prioritise the most pressing occupational performance issues, as well as determining the level of performance and level of satisfaction as perceived by the parents, school staff and if possible by the child himself (Hasselbach & Dunford, 2011).

The advanced assessment is likely to include methods, in particular classroom observations, and tools, such as standardised instruments, focusing on assessing the following in more detail:

- **performance components**, skills and capabilities required for a specific school occupation
- **school occupations** the child struggles with, considering how these are done within this particular context, breaking those occupations down into activities and tasks, identifying the particular materials and tools used
- **environmental components**, such as the physical set up of the environment, attitudes of the school staff and the teacher’s ‘ways of running the classroom’ (Law, 1991; Law, 2002; Law & Barker Dunbar, 2007; Law et al., 1996; Strong et al., 1999)

The school-based therapist tries to ‘tease out’ the complex, interactive relationship between these elements in terms of what is either facilitating or hindering the student’s occupational performance in a specific school occupation. Attempting to do so outside the natural environment in which a task is typically carried out may not yield the information required, as the complex and very particular classroom and wider school environment cannot be accurately simulated in a clinic environment. Therefore, classroom observations of the child carrying out the occupations which cause difficulties, within the context in which the activity is typically carried out, are of particular importance in an assessment of the PEO fit.

GOAL SETTING: FOCUS ON OCCUPATIONAL PERFORMANCE IN SCHOOL OCCUPATIONS

Goals typically focus on desired changes in a child’s ability to perform specific school occupations, tasks and activities. With this focus on occupational performance in mind, the SMART formula can assist with the goal writing. The goal should name a specific task or activity which is an important part of the child’s school life but is challenging to him or her at present. To make a goal

### Practice Examples: School-based Assessment

**John** has been referred to occupational therapy due to difficulties with some of his school work. His teacher is particularly concerned about some of the maths learning activities which involve cutting with scissors. John gets very frustrated and upset when using scissors, muttering to himself “stupid, I am no good at this”. When observing John during one of the maths cutting activity the therapist notices that he has difficulties opening the scissors and therefore does not get into flowing cutting motion. While he holds the worksheet with his assisting hand, the paper folds over as he usually places his assisting hand too far away from the location of the cutting.

**Lucy** has been referred to occupational therapy due to difficulties eating her food independently during breakfast club and lunch break at school. While Lucy’s mum is happy to assist her during meal times at home, the school expects a certain level of independence in particular during the busy breakfast club. When observing Lucy during breakfast club, the adults present are quite occupied with comforting children who are upset by their parents leaving. Lucy sits on a button stool which is attached to a table. Lucy needs to lean forward significantly in order to reach the table. Lucy chooses to eat yoghurt; the plastic container is opened by an adult for her. Lucy starts eating straight out of the plastic container using a small spoon with an equally small handle. The container moves, topples over, and gets slightly crushed. Lucy does not consistently stabilise the container, and uses varying level of force when attempting to do so. Yoghurt ends up on the spoon handle, making it slippery and sticky. Lucy starts commenting on the yoghurt on her hands and fingers, indicating that she would like to wipe them. She has difficulties holding and manipulating the spoon with control.

**Tom** has been referred to occupational therapy as his parents and classroom teacher are concerned about his difficulties making friends in particular during unstructured play time. During break times, Tom watches the other children on the junior playground, wandering around the parameters of the playground. He does not join his peers, and just stops to talk with supervising teaching staff. When taking Tom to the playground on his own during lesson time, it becomes apparent that he is not confident in his use of the playground equipment. He also does not know how to carry out certain parts of the play activities. For example, while he is able to climb up the steps of the ladder to the top of the slide, Tom does not know how to get himself into a sitting position in the small area before the slope of the slide begins.

Table 2: Initial and advanced assessment based on the PEO model.
clearly measurable, the use of variables such as level of support (e.g., adult prompting, frequency), type of support (e.g., verbal, visual), level of accuracy or quality of performance are essential. Goals should be individualised for a specific child, their situation and specific difficulties, to ensure that the goals are achievable and realistic. Lastly, goals should always include a time reference, at which the child is expected to have achieved the respective goal or when progress towards the goal should be monitored.

**Practice Examples: School-based Goal Setting**

**School Work Goal:** In 6 weeks, John will cut out basic shapes as part of his maths school work independently.

**Self-Maintenance Goal:** In 8 weeks, Lucy will eat yoghurt as part of her breakfast at the school breakfast club with minimal spillage under adult supervision.

**Expression and Fulfilment Goal:** In 4 weeks, Tom will join his peers on the school playground during break time for at least 5 minutes at a time, 3 out of 5 opportunities (considering weather, attendance, etc.).

Table 3: Goal setting focusing on changes in occupational performance informed by the PEO model

**SCHOOL-BASED OCCUPATIONAL THERAPY INTERVENTION: ENABLING A CHILD'S OCCUPATIONAL PERFORMANCE IN TYPICAL SCHOOL OCCUPATIONS BY MAXIMISING THE PERSON-ENVIRONMENT-OCCUPATION FIT**

Change in any component of the person-environment-occupational interaction will affect the individual's occupational performance, which opens up for the practitioner the "option of using multiple avenues for eliciting change" (Law et al., 1997, p18). Within school-based intervention, the child, the school environment and the school occupations can be seen either individually or together as a means for change.

Person: The intervention could focus on the student acquiring skills or extending his or her capabilities to better meet the demands of the school occupation as performed in this specific school environment. This skill building process might be facilitated by providing generic and/or child-specific assistance to school staff, such as provision of modelling, feedback and verbal guidance during handwriting (Hasselbusch, 2007; Hasselbusch & Penman, 2008).

Environment: Environmental modifications are often a key part to improving occupational performance in school tasks (Law et al., 1996; Law & Barker Dunbar, 2007; Strong et al., 1999). This may include changes to the physical environment, such as classroom furniture, but also reframing school staff's understanding and potentially some of their attitudes, values and 'ways of doing things around here' (Hasselbusch 2007; Hasselbusch & Penman, 2008).

Occupation: Occupational, activity and task adaptations might be also employed as a tool to enable a better fit between the child's skills and capabilities and the respective school occupation, for example using technology instead of handwriting for written communication (Hasselbusch, 2007; Hasselbusch & Penman, 2008).

**Practice Examples: School-based Intervention**

Following the therapist trialling spring-loaded scissors with John, the school staff and his parents decided to purchase a pair for him (occupation). The therapist also demonstrated to John's teacher how to model using verbal self-talk focusing on a smooth rhythm of opening and closing of scissors such as "snip - snap, open - shut" (person). Additionally, the therapist suggested copying the required worksheets for the maths task onto a thicker and more stable paper in an enlarged size for John (occupation).

The therapist discussed with the school staff how to assist Lucy putting the yoghurt from the plastic container into a bowl, which is heavier and unlikely to fall over (occupation). The bowl was placed on non-slip mat (e.g. Dycem) provided by the therapist to further increasing stability (occupation). A spoon with a thicker, built up handle was trialled which increased control of the spoon position and movement as well as reduced smudging over the handle (occupation). Lucy's chair was changed to one with a back which could be pushed up to the table which promoted a stable posture for Lucy (environment).

Tom's mother agreed to stay on after school to encourage Tom to play on the playground equipment. The therapist demonstrated to her how she could coach him through steps and parts of using the equipment which are difficult by the use of modelling and verbal guidance (person). The school staff identified a couple of slightly older children who would take turns in being playground buddies with Tom during break times (environment).

Table 4: Designing intervention within the context of the PEO model

**EVALUATION OF SCHOOL-BASED OCCUPATIONAL THERAPY: MEASURING OCCUPATIONAL PERFORMANCE IN SCHOOL OCCUPATIONS AS OUTCOME**

The outcome is typically evaluated by measuring changes in occupational performance (Law et al., 1996). The goals set at the beginning of the process are typically reviewed at this stage by the occupational therapist, parents and
school staff, and categorised either as achieved (A), partially achieved (PA), or not achieved (NA). If the COFM was administered as part of the initial assessment then re-administration of the COFM (Law et al, 2005) or other occupational performance measures (Law, Baum & Dunn 2005) might also be part of the evaluation phase. A repeat observation of the child completing their occupation may also yield valuable information to determine if goals have been achieved. Depending on the outcome determined and the child’s current level of occupational performance, the clients (school staff, parents and if possible child) and therapist may either decide to continue the intervention, modify the intervention or discontinue intervention.

### Practice Example: School-based Evaluation

John’s progress was evaluated after a term of implementing the intervention strategies. School staff, parents, the therapist and John himself agreed that the goal was achieved. John was much happier when being asked to cut. The occupational therapist was then asked by John’s teachers to help with his handwriting so the therapist repeated the occupational therapy process by observing handwriting, setting a goal, providing interventions and evaluating.

Lucy’s goal was reviewed by with school staff and her mother and while improvements were seen, there was an issue with Lucy’s chair as it was separating her from the other children. The occupational therapist modified the intervention by speaking with the school staff and negotiating a table with separate chairs so that a group of children would be able to sit together (environment). Lucy was then re-evaluated and her goal was then achieved.

Tom’s mother reported that Tom asks now regularly to play on the different playgrounds in the area. School staff reported that Tom plays on the junior playground even without facilitation of buddies. The goal has been achieved. No further occupational performance issues were highlighted so Tom was discharged from the occupational therapy service with the understanding that he could re-enter the service should he encounter further occupational performance issues in the future.

### Table 5: Determination of level of change created in the level of child’s occupational performance in prioritised school tasks (based on the PEO model structure)

### CONCLUSION

The PEO model offers a highly useful framework for school-based occupational therapy practice. It enables a holistic perspective on a child’s occupational performance and occupational performance issues in typical school occupations within a regular school environment. School-based occupational therapy practitioners may like to use the PEO model to structure their assessment and intervention, emphasising that the child, school environment and school occupations are assessed, barriers to occupational performance in school occupations identified as well as these barriers being appropriately addressed. Additionally, the PEO structure facilitates a focus on changes in occupational performance in school occupations as meaningful outcomes for school-based occupational therapy, which is congruent with current models of disability and classifications (Law, Baum & Dunn, 2005; WHO, 2001, 2007).

Ideally, a practitioner may like to have a number of occupational therapy models in their toolkit, so they can choose an appropriate model depending on the client and situation encountered. Some models complement each other and even share some key terminology; the PEO model is in particular compatible with or close to the Canadian Model of Occupational Performance (CMOP) and the newer edition Canadian Model of Occupational Performance and Engagement (CMOP-E) (Law et al, 1997; Polatajko et al, 2007; Strong et al, 1999). A discussion of the CMOP-E and its application to school-based occupational therapy is intended for a later edition of the Children, Young People and Families Occupational Therapy Journal.

### REFERENCES

* recommended for further familiarisation with the PEO model


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