Leonard G. Goodman and Kathleen M. Johnson

THE ISSUE IS

Anticipating the Future: Assessment of Occupational Function

The Problem of Identity and Congruence

Occupational therapists are experts in occupational functioning. We enable people to engage in those roles, tasks, and activities that have meaning to them on a day-to-day basis and that define their lives. Currently, people who are suffering from a deficit of some component of functioning secondary to trauma, illness, or congenital defect are referred to an occupational therapist when occupational dysfunction is detected or when loss of an important function is anticipated.

However, our profession’s role is only vaguely appreciated by our clients, legislators, the public, and some of our colleagues. I believe this is because of our ever-present problem of defining our profession clearly to them. At this time, people who have not experienced occupational therapy, and sadly even some of those who have, do not know its purpose or how it differs from services provided by other related professions. Members of the public do not recognize that occupational therapy services should be sought whenever occupational dysfunction is experienced. Many are not even aware of the concept of occupational dysfunction.

The public does know what a physician does or what a teacher does. One reason, of course, is that they have experienced the services of these professionals. Another is that there is a congruence among the reason for seeking the service, the intake procedure, the service, and the outcome. A physician’s services are sought to remedy or prevent illness. The intake procedure includes an inquiry about previous personal and family illness and an examination of physical systems. Services are directed toward any detected deficit. The client sees the connection between why he or she went to see the physician, the assessment the physician made, and the treatment received.

In contrast, persons treated by occupational therapists commonly do not seek treatment directly; most often they are sent by another professional. The person may not know why he or she has been sent, let alone have a particular goal relative to his or her occupational functioning. Then, unfortunately, more often than not, the occupational therapist, who has jumped ahead mentally from recognizing that an occupational dysfunction exists to planning a method of correcting or overcoming it, may begin by using a bottom-up approach of assessing and treating components of function. A bottom-up approach to assessment and treatment focuses on the deficits of components of function, such as strength, range of motion, balance, and so on, which are believed to be prerequisites to successful occupational performance or functioning. An example of a bottom-up approach is when the occupational therapist detects that a client who is referred to occupational therapy for remediation of an occupational dysfunction (e.g., lack of independence in self-care) lacks sitting balance. Because sitting balance is considered to be an ability required to dress independently, the therapist may begin treatment by engaging the client in activities to improve balance. The occupational therapist may not make clear to the client the connection between the component deficit and occupational functioning. The outcome desired by the occupational therapist may or may not be congruent with important goals of the client or even with the client’s perceived reason for receiving occupational therapy services. Confusion and dissatisfaction may result.

In contrast, a top-down assessment, one that starts with inquiry into role competency and meaningfulness, would clarify the purpose of occupational therapy for the client. Those roles that are important to the person, especially the ones that he or she engaged in prior to the illness or trauma, become the focus of inquiry. If a discrepancy among the past, present, and future role performances is detected during the assessment, the person would see the need for treatment. A top-down assessment further determines which particular tasks define each of the roles for that person, whether he or she can now do those tasks, and probable reasons for an inability to do so. It helps the client to connect abilities (components of function) with occupational performance and validates start of therapy with activities to improve the component. The client would be eager to engage in the work of occupational therapy.

I agree with Gillette’s (1991) statement that “the basic concepts of a profession should be reflected through the tests and measurements used in its practice. For occupational therapy, this means functional assessments of performance based on tests that measure change in occupational performance” (p. 565). I would go further to say that the assessment process needs to be organized into a structure that reflects the concept of occupational functioning. Further, I think the intake process should be uniform among all occupational therapists. By intake process I am...
components. The performance areas include neurologic, and musculoskeletal components of performance. The Uniform Terminology, published by the American Occupational Therapy Association (AOTA, 1989), has defined occupational function as a hierarchical organization of abilities, activities, tasks, and work (including home management, care of others, educational activities, and vocational activities). Three occupational performance components are identified: sensorimotor, cognitive, and psychosocial. Each of these comprises two or three layers of progressively more basic abilities and capacities.

I also have tried to conceptualize occupational functioning for myself and my students, beginning with the definition of occupational functioning as a sense of satisfaction and competency with one's implementation of the tasks associated with valued roles. This conceptualization can be presented as follows:

1. The overall goal of occupational therapy is to enable the client to gain a sense of efficacy. When a person feels competent, he or she is most likely to esteem himself or herself. Csikszentmihalyi (1990) might describe this sense of efficacy as one ingredient of "optimal experience," (p. 40), which is characterized as a state in which there is no threat for the self to defend against, a state that could be called "happiness."

2. A sense of efficacy is derived from being in control of one's life. This means being able to satisfactorily engage in one's life roles (or voluntarily reassign a role to another to achieve something more valued. I will not continue with this branch or the reasoning. Obviously there is more detail to be filled in for a complete conceptualization of occupational functioning.

3. To satisfactorily engage in a life role, a person must be able to do the tasks that make up that role in his or her opinion.

4. Tasks are composed of activities, which are smaller units of behavior.

5. To be able to do a given activity, one must have certain sensorimotor, cognitive, perceptual, emotional, and social abilities.

6. Abilities are developed from capacities that the person has gained through practice or maturation or both.

7. These developed capacities depend on first level capacities that derive from a person's genetic endowment or spared organic substrate.

This is a one-dimensional (sensorimotor) presentation of my conceptualization; it should not be interpreted as a complete conceptualization of occupational functioning.

Roles seem to cluster into three domains of self-definition: development and maintenance of self, including family and home; advancement of self or productivity; and enhancement of self. I see these domains as roughly equivalent to the occupational performance areas of the AOTA Uniform Terminology, but my wording emphasizes the person's life rather than activities per se. Roles that may be associated with the three domains are shown in the Appendix.

An unfortunate aspect of the realism of health care financing is that not all aspects of the client's occupational functioning can be treated within the current limits of the health care system. So, if we are to continue to consider occupational therapy as the profession that treats occupational dysfunction within all three major domains, then policy needs to be changed, or recognition and demand on the part of the public for private occupational therapy services need to be promoted.

Roles have specific meaning to a particular person and need to be operationally defined for that person. The operational definition will list the tasks and activities, with their contextual specifications, that the client views as constituting successful implementation of a valued role. Tasks are larger units of behavior than activities. Whether a particular unit of behavior is designated a task or an activity depends on the scope of focus. For example, baking a cake can be designated an activity that, taken with other activities, defines the task of food preparation, or it can be designated a task composed of activities such as measuring ingredients, stirring batter, and so on.

As Nelson and Payton (1991) found when testing their system for involving clients in program planning, the tasks and activities associated with each role are specific for each client. For example, one of their subjects identified wrestling with her two young children as an important activity of her parenting role;
part

I assume, as do others, that skill in complex tasks and activities can be explained by the presence of various underlying general abilities (Christiansen, 1991; Fleishman & Quaintance, 1984). In my conceptualization, occupational functioning is supported by sublayers of abilities, developed capacities, first level capacities, and cognitive-neuromotor substrate (see Appendix).

Fleishman's work (Fleishman, 1972; Fleishman & Quaintance, 1984) empirically supported a layered view. Over many years, Fleishman tested thousands of subjects and through factor analysis found the relatively small number of 52 underlying general abilities that can explain proficiency in a large number of job-related tasks. He defined an ability as a 'general capacity of the individual related to performance in a variety of human tasks' (Fleishman & Quaintance, 1984, p. 162). He went on to say that 'the development of proficiency on a given task is predicated on part on the possession of relevant basic abilities' (p. 163, emphasis added). The abilities that he identified are similar to the subcomponents listed in the AOTA Uniform Terminology (AOTA, 1989).

Fleishman further stated that both learning and genetic components underlie ability development.

Fleishman (Fleishman & Quaintance, 1984) developed a database of tasks classified by ability category — sort of a giant activity analysis file — that he called the Task Abilities Bank. Information from this bank and other work of Fleishman should be tapped in our future development of assessments to characterize occupational functioning. Certainly more of the research in the developing science of occupation will build on the work of Fleishman as it attempts to describe the components and necessary prerequisites of successful task and role performance.

Research is also needed to delineate the relationships among the constructs within the concept of occupational functioning. Until fairly recently, occupational therapists have held a simplistic view of the relationship between functional performance and the components of function, either abilities or capacities. We now know that a low level component of function, for example, strength, does not have a one-to-one correspondence to function. A person can improve strength of grasp and still not be independent in a self-care activity because of other factors. Therapists in Quebec (Filatratu, Arsenault, Dutil, & Bourbonnais, 1991) tested the relationship between the component of upper extremity sensorimotor control and self-care in poststroke clients. They found a nonchance but moderate relationship ($r = .60$), between the scores of the Fugl-Meyer Test (Fugl-Meyer, Jaasko, Leyman, Olsson, & Steglin, 1975) for upper extremity function and those of the Barthel Index (Mahoney & Barthel, 1965) indicating that although sensorimotor control of the upper extremity was indeed related to self-care, some other nonidentified variables were accounting for more than 60% of the variance associated with performance of self-care skills.

Morrison, Bundy, and Fisher (1991), recognizing the composite nature of the relationship between components and performance, used multiple regression to test a theoretical model asserting a combined relationship of several components to play behavior. They found that the scores of the Bruininks-Oseretsky Test of Motor Proficiency (Bruininks, 1978), tests of associative fluency (creativity), and the Preschool and Primary Internal-External Locus of Control Scale (Nowicki & Duke, 1974) reliably predicted scores on the Preschool Play Scale ($R = .48$). However even this combination failed to account for 75% of the variance of play.

In addition to research to clarify relationships between components and higher level functions, the obverse is also needed, that is, research to determine the minimal necessary capacities and abilities required to accomplish activities that compose the tasks of particular roles. We know little about that right now. Although some of this information probably appears as secondary findings in occupational therapy research and in research reports of other disciplines, this information has not been compiled into usable form. For example, 30 years ago, prosthetists and engineers involved in the development of powered orthoses and prostheses determined that 4 to 5 lb of pinch strength were required for successful completion of basic feeding and written communication activities. Ergonomic experts and human factor engineers will contribute to our knowledge when they determine the minimal physical characteristics needed for certain jobs or for operation of certain types of equipment.

**Layers of Function to Assess and Treat**

The conceptual models mentioned earlier all seem to agree that higher level skills derive from, or depend on, lower level abilities and capacities, but there is no consensus on the levels of function or the number of layers with which an occupational therapist should be concerned. Additionally, the corollary hypothesis that if a deficit is identified in a higher level system, then remediation of the lower level system will correct or ameliorate the higher level deficit has not been addressed directly. This hypothesis was the historical basis for occupational therapy with persons who have physical disabilities (Spackman, 1988) and is currently providing the underlying guidance to that practice (Trombly, 1989).

There are two basic treatment approaches in the remediation of occupational dysfunction: restoration of impaired underlying abilities or capacities or adaptation to the dysfunction or disability. Restoration is chosen in the belief that restored general abilities will allow more flexible functioning under various circumstances. Restorative therapy focuses on challenging a layer or more below the level of identified deficit. Adaptation is chosen when restoration is unlikely: when it is too costly in terms of time, energy, or money; or if one conceptualizes the lowest layer of the hierarchy of occupational functioning to be activities. We have no definitive study in occupational therapy that indicates that a person's occupational functioning is better as a result of restorative therapy rather than adaptive therapy. This is a key question for the future development of occupational therapy. The answer will have far-reaching effects on the development of the science of occupation, the education of practitioners, the direction of research programs, the payment for occupational therapy services, and the development of instrumentation for the field. The outcome of this research also would provide guidance to more philosophic questions such as: At what level of function is a
In the design of a battery of measures and evaluation procedures used to assess occupational functioning, the realities of funding must be kept in mind. Limited length of stay within the health care system demands that the assessment be quick and direct. This is problematic because occupational functioning is so individual. The evaluation must determine the person’s view of his or her occupational functioning and what he or she views as dysfunctional in his or her life. No one evaluation tool can be devised that fits all persons in all situations without being tremendously burdensome. Rather, an assessment strategy needs to be devised that enables the individuality of a person’s life to be forthcoming within a 1- to 2-hr conversation. The Canadian Occupational Performance Measure (Law et al., 1991) may provide us with an assessment strategy or a tool to assess the role and task levels of occupational functioning.

As we all recognize, occupational therapy needs great developments in instrumentation and measurement to move both practice and research forward. In addition to a lack of tools to assess the highest level or levels of occupational functioning, assessments of the intermediate aspects of occupational functioning (i.e., tasks and activities) are also lacking. The tasks and activities of basic self-care and homemaker roles are more or less standard among people, so instruments that assess these are more common. However, to my knowledge only a few self-care evaluations have been psychometrically developed and these do not yet consider the environmental requirements for successful performance. I do not know of any standardized homemaker evaluation. For the other domains of occupational functioning, many therapists seem to devise their own evaluations on the basis of analysis of the tasks they identify for the roles. The tasks and activities of the roles within the self-advancement domain are even less standard and evaluative procedures are less developed. And, although interest, play, and environmental access surveys have been devised, assessments of skill in the tasks and activities of the roles within the self-enhancement domain do not seem to be developed at all.

**Summary**

I believe that the occupational therapy assessment procedure should reflect our conceptualization of occupational functioning and that there should be a congruence among goals, assessments, and treatment. I believe that there should be a universal occupational therapy intake assessment procedure that follows a top-down approach to clarify for the client that the role of occupational therapy is to promote his or her occupational functioning. All the layers of function that we treat should be assessed, with the particulars of context incorporated into assessments at the activity and higher levels. Further and most important, occupational functioning should be fully conceptualized and the relevant constructs and their relationships verified and made clear to all.

**Acknowledgments**

This manuscript is based on a paper presented at the Symposium on Measurement and Assessment: Directions for Research in Occupational Therapy at the University of Illinois at Chicago, October 16–18, 1991. The symposium was jointly sponsored by the American Occupational Therapy Association, the American Occupational Therapy Foundation, and the Occupational Therapy Center for Research and Measurement at the University of Illinois at Chicago.

**Appendix**

**Layers of Occupational Functioning**

<table>
<thead>
<tr>
<th>Domains and Roles: (noninclusive examples)</th>
<th>Self-Maintenance (home &amp; family)</th>
<th>Self-Advancement</th>
<th>Self-Enhancement</th>
</tr>
</thead>
<tbody>
<tr>
<td>independent person</td>
<td>student</td>
<td>hobbyist</td>
<td></td>
</tr>
<tr>
<td>parent</td>
<td>worker</td>
<td>friend</td>
<td></td>
</tr>
<tr>
<td>son</td>
<td>commuter</td>
<td>member</td>
<td></td>
</tr>
<tr>
<td>daughter</td>
<td>shopper</td>
<td>vacationer</td>
<td></td>
</tr>
<tr>
<td>grandparent</td>
<td>investor</td>
<td>golfer</td>
<td></td>
</tr>
<tr>
<td>homemaker</td>
<td>bank patron</td>
<td>movergoer</td>
<td></td>
</tr>
<tr>
<td>homeowner</td>
<td>traveler</td>
<td>violinist</td>
<td></td>
</tr>
<tr>
<td>exerciser (fitness)</td>
<td>manager</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Tasks: Example for homemaker role
- prepare meals
- serve meals
- clean house
- manage household accounts

Activities: Example for task of preparing meals
- peel and slice vegetables
- make a cake
- roast meat

Abilities: Example for activity of peeling and slicing vegetables
- gross body coordination
- dexterity
• selective attention
• spatial orientation
• visualization
• control precision

Developed Capacities: Example for ability of dexterity
• graded grasp to accommodate held object
• independent use of fingers

First Level Capacities: Example for developed capacity of graded grasp
• reflexive grasp
• reflexive release
• sensory (proprioceptive) reception

Substrate: Example for first level capacity of reflexive grasp
• intact upper extremity neuromusculoskeletal systems

References


The issue is provides a forum for debate and discussion of occupational therapy issues and related topics. The contributing editor of this section, Julia Van Deusen, strives to have both sides of an issue addressed. Readers are encouraged to submit manuscripts discussing opposite points of view or new topics. All manuscripts are subject to peer review. Submit three copies to Elaine Visellear, Editor.

Published articles reflect the opinion of the authors and are selected on the basis of interest to the profession and quality of the discussion.