

10. Flick GL. Managing ADHD in the K-8 classroom: A teacher's guide. California: SAGE Publications Inc, 2010.
11. Kranowitz C. The out-of sync child: Recognizing and coping with sensory integration dysfunction. New York: Skylight Press, 1998.
12. Blanche EI, Schaaf RC. Proprioception: A cornerstone of sensory integration intervention. In: Smith Roley S, Blanche EI, Schaaf RC, editor. Understanding the nature of sensory integration with diverse populations. San Antonio: Therapy Skill Builders; 2001.
13. Yack E, Aquilla P, Sutton S. Building bridges through sensory integration. Las Vegas: Sensory Resources, 2002.
14. Schilling OL, Washington K, Billingsley FF, Deitz J. Classroom seating for children with attention deficit hyperactivity disorder: Therapy balls versus chairs. The American Journal of Occupational Therapy, 2003; 57: 534-41.
15. Olsen LJ, Moulton HJ. Occupational therapists' reported experiences using weighted vests with children with specific developmental disorders. Occupational Therapy International, 2004; 11(1): 52-66.
16. Fertel-Daly D, Bedell G, Hinojosa J. Effects of a weighted vest on attention to task and self-stimulatory behaviors in preschoolers with pervasive developmental disorders. The American Journal of Occupational Therapy, 2001; 55(6): 629-40.
17. Murry-Slutsky C. Sensory Modulation. In: Murry-Slutsky C, Paris BA, editors. Exploring the spectrum of autism and pervasive developmental disorders: Intervention strategies. Austin: Hammill Institute on Disabilities; 2000: 107-71.
18. Hopkins WG. Quantitative research design. sportsoci.org; 2000. <<http://www.sportsoci.org/jour/0001/wghdesign.html>> (21 Nov 2010).
19. Hopkins WG. A New View of Statistics. Sportsoci.org; 2009. <<http://www.sportsoci.org/resource/stats>>. (16 Nov 2010)
20. Morrison EE. A review of research on the use of weighted vests with children on the autism spectrum. Education, 2007; 1 (3): 323-7.
21. Stephenson J, Carter M. The use of weighted vests with children with autism spectrum disorders and other disabilities. Journal of Autism and Developmental Disorders, 2008; 39(1): 105-14.
22. Deiner P. Inclusive Early Childhood Education: Development, Resources, and Practice, 5th ed. Belmont: Wadsworth, 2005.
23. Weis R, Totten SJ. Ecological validity of the Conners' Continuous Performance Test II in a school-based population. Journal of Psychoeducational Assessment, 2004; 22: 47-61.
24. Conners CK, MHS Staff. Conners' Continuous Performance Test II: Computer program for Windows technical guide and software manual. Tonwanda: Mutli-Health Systems, 2000.
25. Ayers AJ. Sensory integration and the child: Understanding hidden sensory challenges. Los Angeles: Western Psychological Services, 2005.
26. Lane SJ. Sensory Modulation. In: Bundy AC, Lane SJ, Murry S.J, editors. Sensory Integration: theory and practice. Philadelphia: F.A. Davis Company; 2002: 101-20.
27. Miller JL, Reisman JE, McIntosh DN, Simon J. An Ecological Model of Sensory modulation. In: Smith Roley S, Blanche EI, Schaaf RC, editors. Understanding the nature of sensory integration with diverse populations. San Antonio: Therapy Skill Builders; 2001: 57-84.
28. Olsen LJ, Moulton HJ. Use of Weighted Vests in Paediatric Occupational Therapy Practice. Physical & Occupational Therapy in Paediatrics, 2004; 24(3): 45-60.
29. VanderBerg NL. The use of a weighted vest to increase on task behavior of children with attentional difficulties. In: Rooyen CB, editor. Pediatric Issues in Occupational Therapy: A compendium of leading scholarship. The American Occupational Association, Inc.; 2003: 289-300. □

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## The accreditation of vocational assessment areas: Proposed standard statement and measurement criteria

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ABSTRACT

*Vocational Rehabilitation Programmes managed by occupational therapists and the emphasis placed on continuous quality improvement in service delivery, resulted in the question: "How can occupational therapists ensure that the quality of vocational assessment services delivered to clients are of an acceptable standard?"*

*This study aimed to address the question by developing a standard statement and measurement criteria for the assessment of work abilities of clients using the Donabedian approach for setting standards of practice.*

*Two rounds of questionnaires, using a Delphi survey method, resulted in the formulation of a standard statement and measurement criteria for the Structure, Process and Outcome of work assessment areas by which the work abilities of clients are assessed. The standard statement and the accompanying measurement criteria set the basic standards for quality assurance and can contribute to the implementation of continuous quality improvement processes in vocational assessment areas that may result in the accreditation of vocational rehabilitation programmes managed by occupational therapists.*

**Key words:** Vocational Rehabilitation Programme, Quality Assurance, Continuous Quality Improvement, Vocational Assessment Areas

### Introduction and Literature Review

The rights of people with disabilities to equal employment have been acknowledged on a national and international level by various groups and in many publications. International publications such as the Standard Rules on the Equalisation of Opportunities for Persons with Disabilities<sup>1</sup> and on a national level documents such as the Employment Equity Act<sup>2</sup>, Labour Relations Act<sup>3</sup> and the White Paper on an Integrated Disability Strategy<sup>4</sup> have highlighted principles in this regard. It is within this context that occupational therapists play important roles in the management of vocational

rehabilitation programmes (VRP's) within various settings such as sheltered workshops or in open market situations. However, continued acknowledgement of the occupational therapist as an important role player in vocational rehabilitation, will depend on the effectiveness of the output of these programmes to address the employment needs of clients. Programme effectiveness implies that an acceptable level of quality is delivered. Measurement of the quality of a programme requires careful consideration because of the complexities inherent in such a measurement process. Information on processes/methods that can be used to measure the quality



of outputs of vocational rehabilitation, and specifically assessment of work abilities, was found to be limited within South African and internationally published occupational therapy literature and practice. This indicated the need for setting measurement criteria to be used to measure the output of Vocational Rehabilitation Programmes (VRP's) including the output of Vocational Assessment Areas (VAA's). Over and above, using the criteria for measurement of output, these can also be used to guide the occupational therapist in creating areas for vocational rehabilitation. The study developed such measurement criteria for VAA's within the realm of quality assurance to guide occupational therapists in identifying situations in the open labour market that may be used as a VAA or to structure a VAA within a facility or organisation.

Quality assurance is described in the literature<sup>5-7</sup> as: actions to ensure that the product or service will meet the given requirements; systematic monitoring and evaluation of various aspects of a project to ensure that quality standards are being met; regulation of materials, products, processes; a system for evaluating performance.

The quality cycle described by Shewart as cited in Berwick<sup>8</sup> depicts four concepts – Plan, Do, Check, Act. This is referred to as the PDCA cycle. It provides a basis for understanding the actions pertaining to quality assurance and is used as generic principles in quality management.

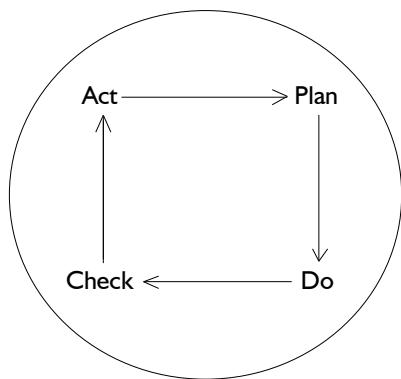


Figure 1: The quality cycle

Based on the quality cycle, Anderson<sup>9</sup> proposed the following process for quality development – see Figure 2:

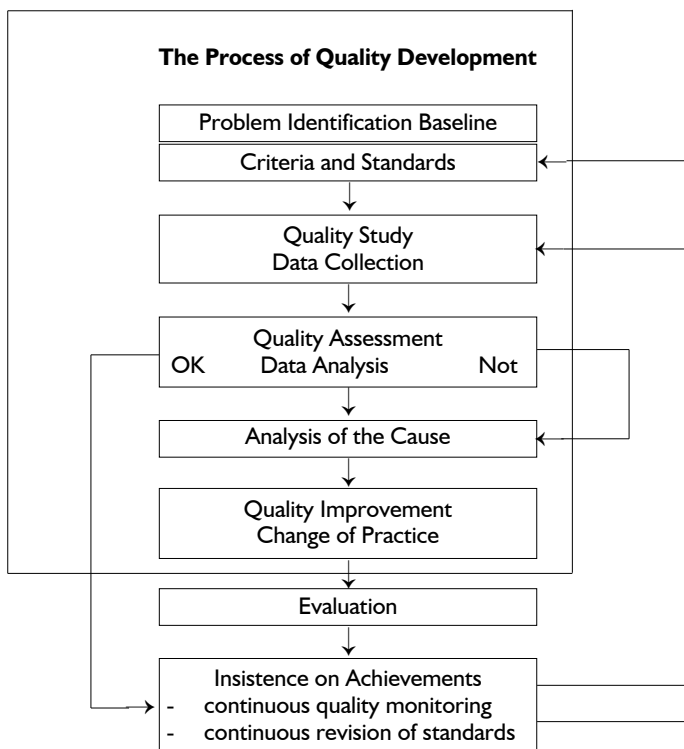


Figure 2: The Process of Quality Development<sup>9</sup>

The process of quality development requires that a topic/problem is identified. The topic for this study is the quality assurance of occupational therapy vocational assessment areas using the process of quality development. After choosing a topic, as proposed by Anderson in the above mentioned process of quality development, the measurement criteria for a specific service, activity or product are identified. This study focused on the identification of measurement criteria for vocational assessment areas (VAA's) in South Africa.

A further development within the arena of quality assurance is continuous quality improvement whereby ongoing monitoring and continuous evaluation of the quality of products and processes, according to set criteria, takes place. This approach has been adopted in the health care arena<sup>10</sup>.

Monitoring and evaluation require measurement and this implies that a standard or standards need to be set against which actual practice may be compared to obtain measurement results<sup>11</sup>. These results are then analysed and interpreted to identify possible causes of variation from the set criteria<sup>5,12</sup>. An approach developed by Donabedian<sup>13</sup> proposes that a standard statement indicating the topic of concern and the measurement criteria identified for services or activities in line with the topic, are grouped according to Structure (S), Process (P) and Outcome (O) (see Figure 3).

Topic		
Subtopic		
Care Group		
<b>* Structure</b>	<b>* Process</b>	<b>*Outcome</b>
<b>Resource Provision:</b>	<b>Activities to be undertaken:</b>	<b>Specify the results</b>
Facilities Equipment Supplies Personnel Time Finance	Who does what, to whom, when and how	Improvement statistics Health status Satisfaction Understanding Participation

Figure 3: Donabedian Approach<sup>13</sup>

VRP's in occupational therapy include the assessment of work abilities, work preparation, work trial placement, work placement and follow-up. Measurement criteria, incorporating standards, need to be developed for the various vocational rehabilitation activities in terms of S, P and O which may be used to measure the effectiveness of VRP's and, for the purposes of the study, of VAAs.

Vocational assessment is commonly viewed as the most important activity of VRPs as the results obtained from assessment may indicate problems regarding a client's work abilities and the extent to which the other vocational rehabilitation activities are to be executed<sup>14</sup>. The development of measurement criteria that VAAs have to comply with can contribute to the quality of the assessment activities performed in these areas. It was decided to develop measurement criteria for the VAAs according to the Donabedian approach.

In South Africa requests from employers and insurance companies, amongst others, for the assessment of work abilities of clients by occupational therapists, have escalated over the past 8-10 years. The reports produced as a result of assessment are used in medico-legal cases, or to substantiate decisions for the allocation of state disability grants or to decide whether or not a worker qualifies for medical boarding<sup>15-17</sup>.

A problem discussed in the literature<sup>16</sup> pertaining to standards of work-related assessment practices, is that these practices lack standards and this results in inconsistencies in assessment outcomes. The identification of standards for the various vocational rehabilitation activities may contribute to ensuring that an acceptable level of service can be delivered. A structured physical environment facilitates the execution of standardised assessment processes which can result in obtaining reliable and valid data and outcomes that can be stated in measurable terms. This is crucial not only from a legal



perspective, but for quality assurance purposes as well<sup>18</sup>. Brave-man<sup>10</sup> confirms this view by describing the process of control as an activity that can only be executed if there are measures in place to monitor the production output in a situation.

The identification of relevant measurement criteria for the S, P and O of VAAs is an essential first step for the purpose of initiating and monitoring continuous quality improvement of vocational assessments by occupational therapists and can ultimately contribute to the accreditation of the VAAs where assessments take place. Occupational therapists have to be proactive and take control of setting and monitoring standards of practice:

*“The occupational therapy profession must continue to set standards, examine processes and measure outcomes in order to thrive as a profession and become a marketable resource. If it does not, the profession may have its standards set by others or, worse still, it may flounder entirely. It is argued that for a standard to be achievable by all, it must necessarily be of a minimal standard initially so that optimal standards can be ultimately realized”<sup>19:4</sup>.*

## Study Methods

### Study design

A quantitative study using a panel survey research design – the Delphi technique – was used. The Delphi technique implies anonymity and several rounds of questionnaires that are circulated, anonymously, to experts in order to obtain consensus decisions.

### Population

Senior occupational therapists in managerial positions in all nine provinces and the heads of the eight occupational therapy training centers were asked to submit the names of occupational therapists who had more than one year experience in VRPs. The names of 66 occupational therapists who met the inclusion criteria were received.

### Study sample

Different study samples were used to select participants from the study population in each of the two Delphi stages in which data were collected for this study.

*First round Delphi:* Purposive sampling was used to select twenty occupational therapists (33.3% of the population). The researcher ensured that the sample was representative of the study population by choosing participants who had similar characteristics to those of the population, i.e. that their years of experience with vocational rehabilitation activities and their active engagement in a VRP when the study was executed, matched.

*Second round Delphi:* Because the study population was relatively small, the remaining 66 occupational therapists were invited to participate in this round of the Delphi survey. A self-selected group of 45 occupational therapists (68%) indicated it's willingness to participate in the second round.

### Method of data collection

#### First Round Delphi:

The aim of round one was to identify the sub-statements that could be used to formulate a standard statement for an occupational therapy VAA. According to Donabedian<sup>13</sup> a standard statement indicates the desired and accepted level of performance in a given situation, for a specific topic and/or toward a specific group of people. An example of a standard statement for a work assessment area could for example be formulated as “Assessments of work abilities of clients will be completed within 10 days after referral”. Prior to formulating a standard statement, all activities that are performed within a demarcated area of service provision need to be identified and prioritised<sup>7</sup>. The “area of service” selected for this study were VAA's.

A list of 13 key activities performed during the assessment of work abilities was extracted from vocational related literature and formulated as sub-statements to construct the questionnaire for round one. The group of twenty experts were requested to indicate their preference for each sub-statement on a 4-point Likert Scale

(Agree Strongly, Agree, Disagree, Disagree Strongly) in this round, for inclusion as sub-statements in a standard statement for VAAs. Participation was anonymous and 16 of the 20 selected participants completed the questionnaire in round one (response rate of 80%). All sub-statements where more than half of the respondents chose “Strongly Agree” were then used to formulate three draft standard statements in preparation for the second round Delphi (questionnaire 1). Table 1 is presented in the discussion of Second Round Delphi in the following section.

#### Second Round Delphi:

Four questionnaires were used in this round.

**Questionnaire 1:** Based on the results obtained in round one, three draft standard statements, using the preferred sub-statements indicated in round one, were formulated. The three standard statements and the sub-statements that were used to formulate these, comprised Questionnaire 1 for the second Delphi round.

Table 1: A Standard Statement for Occupational Therapy Work Assessment Areas in South Africa

	Agree strongly	Approve	Disapprove	Disagree strongly
<b>I Assessment methods are used in various settings and situations in the work area to assess the client's occupational performance with emphasis on the fulfilment of the worker role. A report is compiled at the end of the assessment period stating the identified problem areas and assets relating to the client's work abilities as well as the appropriate recommendations regarding work.</b>				
1.1 Assessment methods are used				
1.2 in various settings and situations in the work area				
1.3 to assess the client's occupational performance with emphasis on the fulfilment of the worker role.				
1.4 A report is compiled at the end of the assessment period				
1.5 stating the identified problem areas and assets relating to the client's work abilities				
1.6 as well as the appropriate recommendations regarding work.				
<b>COMMENTS</b>				
<b>II Various assessment methods are used within an appropriate work environment to identify what impact the functional abilities of the client have on his/her job performance and productivity. The final assessment report includes a worker profile of the client indicating the problem areas and assets regarding the client's work abilities. Appropriate recommendations regarding work are also stated in this report.</b>				
2.1 Various assessment methods are used				
2.2 within an appropriate work environment				
2.3 to identify what impact the functional abilities of the client have on his/her job performance and productivity.				



2.4 The final assessment report includes a worker profile of the client				
2.5 indicating the problem areas and assets regarding the client's work abilities.				
2.6 Appropriate recommendations regarding work are also stated in this report.				
<b>COMMENTS</b>				
<b>III Various assessment methods are used to assess the client's work abilities and identify problem areas and assets relating to the client's work abilities. A final report that includes a worker profile of the client as well as appropriate recommendations regarding work is compiled at the end of the assessment period.</b>				
3.1 Various assessment methods are used				
3.2 to assess the client's work abilities				
3.3 and identify problem areas and assets relating to the client's work abilities.				
3.4 A final report that includes a worker profile of the client				
3.5 as well as appropriate recommendations regarding work is compiled at the end of the assessment period.				
<b>COMMENTS</b>				

**Questionnaires 2 to 4:** Information gathered from occupational therapy literature related to work assessment was then used to identify activities associated with S, P and O within the context of VAA's. Information pertaining to each of the three areas was formulated as measurement criteria according to R.U.M.B.A – principles i.e.: relevant, understandable, measurable, behaviourally stated, and achievable<sup>20</sup>. An example of the formulation of a measurement criterion for Process is as follows: "The occupational therapist uses a variety of assessment methods to design an assessment package for each client". Three questionnaires for S, P and O were constructed – namely Questionnaires 2, 3 and 4. The measurement criteria identified for the S, P and O questionnaires were posted under various sub-headings on the three questionnaires as indicated below:

**Structure:**

- ❖ Work area
- ❖ Furniture and equipment
- ❖ Administrative structure
- ❖ Staffing

**Process:**

- ❖ Assessment process
- ❖ Final report
- ❖ Utilising resources

**Outcome:**

- ❖ Client outcomes
- ❖ Area outcomes

A letter to explain how the results of the study relate to the quality assurance cycle and the process of quality development, together with instructions to complete the four questionnaires, was posted to the 45 respondents from the study population who indicated their willingness to participate. The participants were requested to complete the four questionnaires in the second round indicating their agreement with the following:

- ❖ a standard statement from a set of three possibilities as well their preference for sub-statements (questionnaire 1)
- ❖ measurement criteria for S, P and O for a VAA (questionnaires 2, 3, and 4).

The strength of agreement was to be indicated on a four-point Likert scale. A response time of four weeks was allocated. Telephonic follow-up was done after four weeks to ensure optimum participation. A response rate of 84.4% was recorded for round two (n = 38).

**Data analysis**

To counteract the non-response to some of the standard statements and the sub-statements by respondents, conservative and robust statistical techniques were employed in the analysis of the first questionnaire. Pivot-tables were used extensively to calculate the responses on the three draft standard statements and the accompanying sub-statements. The use of pivot-tables made it possible for the data to be sorted, counted and displayed in a specified, summarised form. The summarised data can be displayed in the pivot-tables as raw counts, totals or averages. The pivot-tables were used to group responses regarding the sub-statements to make the analysis thereof simpler. The sub-statements indicating the highest level of agreement, were used to formulate the final standard statement.

Frequency percentages were calculated for each of the sub-headings of the questionnaires for S, P and O and the association between each sub-item and the sub-heading was statistically calculated. In order to increase the standard and validity of the results, points on the scale were combined, "Strongly Agree", and "Agree" and "Disagree" and "Strongly Disagree" were combined into a "positive" and a "negative" category respectively.

**Results**

**The Standard Statement**

In round one, more than 50% of the individuals comprising the sample strongly agreed with each of the following sub-statements, indicating their preference for inclusion of each in the final standard statement:

- "Various assessment methods are used to assess the client's work abilities"
- "Assess the client's occupational performance with emphasis on the fulfillment of the worker role"
- Identify functional abilities that have an impact on job performance and productivity"
- Measurement of work performance is done in various settings and situations in the work area"
- Assessment must take place in the appropriate work environment"
- Identify problem areas and assets relating to the client's work abilities"
- Compile a final report at the end of the assessment period and include a work profile of the client"
- The appropriate recommendations regarding work are made in the final report".

The following three draft standard statements were formulated using the above set of sub-statements:

**Standard Statement 1:** "Assessment methods are used in various settings and situations in the work area to assess the client's occupational performance with emphasis on the fulfillment of the worker role. A report is compiled at the end of the assessment period stating the identified problem areas and assets relating to the client's work abilities as well as the appropriate recommendations regarding work."

**Standard Statement 2:** "Various assessment methods are used within an appropriate work environment to identify what impact the functional abilities of the client have on his/her job performance and productivity. The final assessment report includes a worker profile of the client indicating the problem areas and assets regarding the client's work abilities. Appropriate recommendations regarding work are also stated in this report."





**Standard Statement 3:** “Various assessment methods are used to assess the client’s work abilities and identify problem areas and assets relating to the client’s work abilities. A final report that includes a worker profile of the client as well as appropriate recommendations regarding work is compiled at the end of the assessment period.”

The three standard statements and the corresponding sub-statements for each standard statement were then rated by therapists in round two. The Strongly Agree and Agree categories were combined for analysis purposes and the following sub-statements showed the highest marginal frequencies after round two. See Table II, III and IV.

Table II: Standard Statement 1

SUB-STATEMENT	Marginal Frequency (Strongly Agree and Agree) n = 38
“in various settings and situations in the work area”	31
“to assess the client’s occupational performance with emphasis on the fulfillment of the worker role”	32

Table III: Standard Statement 2

SUB-STATEMENT	Marginal Frequency (Strongly Agree and Agree) n = 38
“Various assessment methods are used”	32
“within an appropriate work environment”	30
“The final assessment report includes a worker profile of the client”	31
“indicating the problem areas and assets regarding the client’s work abilities”	31
“Appropriate recommendations regarding work are also stated in this report”	32

Table IV: Standard Statement 3

SUB-STATEMENT	Marginal Frequency (Strongly Agree and Agree) n = 38
“various assessment methods are used”	29
“and identify problem areas and assets relating to the client’s work abilities”	29

The sub-statements with the highest level of agreement were then combined to formulate the final standard statement:

“Various assessment methods are used within an appropriate work environment to assess the client’s occupational performance with emphasis on the fulfillment of the worker role. The final report includes a worker profile of the client indicating the problem areas and assets regarding the client’s work abilities. Appropriate recommendations regarding work are also stated in this report.”

### Measurement Criteria

The results obtained from the three questionnaires for S, P and O (questionnaires 2, 3, and 4 from round two) were analysed by constructing bi-variant scatter plots for each of the subsections. The criteria showing the highest percentage of agreement as well as the strongest association with the sum-total of all scores within each context (S, P or O), were identified as criteria for inclusion in the evaluation instrument. More emphasis was placed on the Spearman-rank correlation due to the historical relationship it has with item-analysis. The items included in these tables (see Table V, Table VI, Table VII) give an overview of what should be included in

the structure of a VAA – whether the VAA is an area specifically structured for assessment of work abilities or whether it is in an open labour market situation selected for assessment purposes.

With reference to “Structure”, respondents suggested that the heading “Area” be changed to “Work Assessment Area” and proposed that the following criterion be added to the final instrument under ‘Staff’:

S4.4: “Staff attend Continuing Professional Development (CPD) activities pertaining to work rehabilitation twice a year.” See Table V.

With reference to “Process”, respondents recommended that the formulation of criteria FR 2.2 and FR 2.7 be altered to read as follows:

FR 2.2: “The occupational therapist compiles a work ability profile of a client using all the assessment results”; and  
FR 2.7: “The occupational therapist, the client and when possible, the employer, plan how to implement the recommendations made in the final report.” See Table VI.

With reference to “Outcomes”, respondents recommended that AO2.1.8 be replaced with “Vocational training” and that AO2.1.12 be replaced with “Informal Sector”.

## Discussion

Compliance bias, volunteer bias and absentee bias were those biases considered during the execution of the project. Compliance bias was addressed by having the questionnaires completed anonymously and returned in a stamped envelope. Absentee bias could not be addressed because 32% of the population (21 of 66) who did not respond can be viewed as having contributed to such bias in that their opinions might have differed from that of the participants, which could have influenced the results negatively. There is a counter argument that their opinions could have been in line with those of the 45 participants.

The results of the study made a new contribution to existing literature in the form of measurement criteria for VAAs. The identified measurement criteria can provide the basis for the implementation of quality improvement processes in VAAs that could ultimately lead to the accreditation of such areas. The next step would be to implement the proposed standard statement and identified measurement criteria in existing VAAs so as to initiate the process of quality improvement.

## Recommendations

Participants considered the content of the questionnaires to be representative of the construct ‘work assessment’, as only one additional criterion was added to the proposed set (Structure: Staff). Construct validity of the instrument can therefore be confirmed.

The sets of measurement criteria were constructed according to Donabedian’s framework for quality assurance. It is believed that the accepted standard statement can be achieved if the identified measurement criteria for S, P and O are implemented in the VAAs.

“Criteria make standards work because criteria are detailed indicators of the standards and can be specific to the area or type of patient.”<sup>21:11</sup>. The area of interest in this situation is a VAA and the type of client is the person who is referred for assessment of his/her work abilities.

The results of the study provided a tool for the development of VAAs to ensure that:

- ❖ assessment activities performed in a VAA are effective, realistic and accurate
- ❖ accountable reporting to all stakeholders is possible
- ❖ assessment outcomes are trustworthy and consistent.<sup>22</sup>

It is recommended that when new VAAs are developed the recommended measurement criteria should be used as a guide for the minimum requirements pertaining to S, P and O that should be in place. Monitoring and evaluation of the VAAs can furthermore be done and thus leading to initiate the process of continuous quality improvement in such areas in South Africa.



Table V: Structure

<b>STRUCTURE</b>	<b>Agreement (%)</b>	<b>Association (Spearman rank coefficient)</b>
<b>Work Area ("W")</b>		
WI.1: "The area is on a public transport route"	*55	0.36
WI.2: "The work area itself and all its facilities are accessible to all workers"	*76	0.22
WI.3: "The area is used for work preparation and work assessment"	47	0.12
WI.4: "The area is only used for work assessment"	13	0.26
WI.5: "Work assessments should take place in situations in the open labour market where possible"	*55	0.26
<b>Furniture and Equipment ("FE")</b>		
FE2.1: "The furniture and equipment are appropriate for a work area"	*60	0.63
FE2.2: "The furniture and equipment comply with ergonomic principles"	57	0.77
FE2.3: "The furniture and equipment contribute to creating a work atmosphere"	*71	0.44
<b>Administrative Structure ("AS")</b>		
AS3.1: "Work assessments take place from Mondays to Fridays"	*39	0.47
AS3.2: "Clients are assessed for at least 6 hours daily"	*45	0.49
AS3.3: "A minimum work assessment period is adhered to"	34	0.31
AS3.4: "A clock-in system is in place"	*26	0.49
AS3.5: "Various standardised tests are available for use during assessment"	76	0.19
AS3.6: "Simulated tasks are available for use during assessment"	*78	0.33
AS3.7: "Job samples are available for use during assessment"	*68	0.22
AS3.8: "Real work tasks are available for use during assessment"	61	0.33
AS3.9: "Printed assessment forms are available"	*50	0.46
AS3.10: "A system for recording relevant information pertaining to the area and its function is in place"	39	0.40
AS3.11: "Protocols for work assessment are available"	42	0.37
AS3.12: "An acceptable staff-client ratio exists"	76	0.17
AS3.13: "An updated waiting list is kept"	52	0.01
<b>Staff ("S")</b>		
S4.1: "The accepted staff-client ratio is maintained"	66	0.39
S4.2: "At least one full-time occupational therapist works in the area"	*68	0.53
S4.3: "At least one full-time occupational therapist and one full time occupational therapy assistant work in the area"	*47	0.58

\*Included in final instrument based on both percentage agreement and rank co-efficient

Table VI: Process

<b>PROCESS</b>	<b>Agreement (%)</b>	<b>Association (Spearman rank coefficient)</b>
<b>Assessment Process ("APR")</b>		
APRI.1: "The occupational therapist screens the client to decide whether a full assessment is needed or not"	*30	0.21
APRI.2: "The client completes an application form for work assessment"	7	0.13
APRI.3: "The occupational therapist conducts the first interview according to a specific/prescribed format"	18	0.10
APRI.4: "The occupational therapist records the information obtained during the interview on an interview record form"	21	0.11
APRI.5: "The occupational therapist obtains information regarding the client's vocational interest inventories"	*20	0.25
APRI.6: "The occupational therapist obtains the results of the aptitude and interest tests done by the client"	15	0.19
APRI.7: "The occupational therapist records the work history of each client"	30	0.08
APRI.8: "The occupational therapist establishes a sound baseline from which each client's assessment package is developed"	*26	0.29
APRI.9: "The occupational therapist, in collaboration with the client, plans the assessment package, taking the client's needs into account"	20	0.45
APRI.10: "The occupational therapist assesses work related as well as psychosocial behaviour of the client"	31	0.22
APRI.11: "The occupational therapist uses a variety of assessment methods to design an assessment package for each client"	*29	0.42
APRI.12: "The occupational therapist modifies assessment methods to meet the individual needs and characteristics of each client"	*20	0.31
APRI.13: "The occupational therapist analyses all assessment activities to ensure that they are relevant in the assessment of the client"	*27	0.20
APRI.14: "The occupational therapist continuously monitors and records the client's work performance during the assessment period"	25	0.03
APRI.15: "The occupational therapist assesses the client's work performance in relation to his/her life roles, tasks and lifestyle"	22	0.05
APRI.16: "The occupational therapist regularly gives feedback to the client during the assessment period on his/her work performance"	†14	0.36



APR1.17: "The occupational therapist structures the environment where the assessment takes place"	*23	0.22
APR1.18: "The occupational therapist uses criteria-referenced and norm-referenced measurement tools to assess the client's work performance"	*23	0.24
APR1.19: "The occupational therapist does a comprehensive analysis of the client's work related strengths and limitations during the assessment period"	*24	0.39
APR1.20: "The client regularly completes self-rating forms during the assessment period"	7	0.20
<b>Final Report ("FR")</b>		
FR2.1: "The occupational therapist keeps a complete record of each client's assessment package and progress reports"	30	0.17
FR2.2: "The occupational therapist compiles a work ability profile of a client, using a variety of assessment results"	∞24	0.30
FR2.3: "The occupational therapist evaluates the client's final work performance against the baseline performance identified initially"	18	0.53
FR2.4: "The views of the client regarding assessment is included in the final report"	9	0.26
FR2.5.1: "The occupational therapist compiles a final report at the end of the assessment period which includes the client's employment history"	23	0.42
FR2.5.2: "detail on the client's functional capacities"	∞26	0.57
FR2.5.3: "the client's transferable work skills"	∞22	0.60
FR2.5.4: "the client's employment-related strengths and weaknesses"	∞28	0.30
FR2.5.5: "recommendations regarding employability"	∞30	0.34
FR2.6: "The occupational therapist discusses the final report with the client"	21	0.40
FR2.7: "The occupational therapist and the client plan how to implement the recommendations made in the final report"	∞20	0.52
FR2.8: "The occupational therapist reports the assessment results to the referring agency"	∞26	0.32
<b>Utilisation of Resources ("UR")</b>		
UR3.1: "The occupational therapist regularly visits work situations in his/her area to familiarise him/herself with the job requirements of the open labour market, protected employment and sheltered employment"	24	0.56
UR3.2: "The occupational therapist has a portfolio with a variety of options and resources available to assist the client in establishing realistic employment aims"	¥25	0.60
UR3.3: "The occupational therapist refers clients to appropriate agencies and resources available"	¥27	0.52
UR3.4: "The occupational therapist networks with agencies/resources to assist them with problems clients may experience with work"	¥22	0.77

\*Included in final instrument based percentage agreement of ≥20% and rank co-efficient of ≥0.2

†Included in final instrument based on emphasis placed on actively involving clients in treatment in literature

∞Included in final instrument based on high percentage agreement and rank coefficient > 0.25

¥Included in final instrument based on both percentage agreement and f rank coefficient

Table VII: Outcomes

<b>OUTCOMES</b>	<b>Agreement (%)</b>	<b>Association (Spearman rank coefficient)</b>
<b>Current Outcomes ("CO")</b>		
CO1.1: "The final report includes a work ability profile as one measure of the client's occupational performance"	*47	0.37
CO1.2: "The client will be able to realistically assess his/her vocational potential in relation to fobs available at the end of the assessment period"	26	0.28
CO1.3: "The client can realistically explain why he/she agrees or disagrees with the recommendation made in the final report"	18	0.31
CO1.4: "The client has the knowledge of which of his/her existing work skills can be transferred to an alternative work situation"	*21	0.59
CO1.5: "Every client is in possession of an action plan at the end of the assessment period"	*47	0.35
<b>Area Outcomes ("AO")</b>		
AO2.1.1: "Return to previous work without adaptations"	*61	0.51
AO2.1.2: "Back to previous work with adaptations"	*66	0.56
AO2.1.3: "Back to the same work with a new employer"	*50	0.45
AO2.1.4: "A different work with the previous employer"	*58	0.57
AO2.1.5: "A different work with a new employer"	*55	0.48
AO2.1.6: "Board the client/early retirement"	*53	0.54
AO2.1.7: "Recommend a disability grant"	*53	0.59
AO2.1.8: "Further training"	*58	0.45
AO2.1.9: "Sheltered employment"	*53	0.57
AO2.1.10: "Protected employment"	*53	0.57
AO2.1.11: "Work preparation – vocational rehabilitation/habilitation"	*55	0.47
AO2.1.11A: "Work preparation – maintenance of present work abilities"	50	0.46
AO2.1.12: "Home industry"	*53	0.62
AO2.1.13: "Activity groups"	*47	0.73
AO2.2: "The outcomes of all clients assessed in the area are monitored and recorded on a regular basis:	45	0.34
AO2.3: "There is a regular flow of requests for work assessments of clients to the area"	45	0.45



AO2.4: "The readmission rate of clients is low in relation to the number of assessments completed in the area"	42	0.20
AO2.5: "The occupational therapist can provide accurate statistics regarding clients and the outcomes of clients assessed"	55	0.31
AO2.6: "The occupational therapist follows up all clients six months after discharge from the assessment area"	26	0.24
AO2.7: "The occupational therapist validates the outcome of each client assessed in the area after two years."	26	0.29

\*Included in final instrument based on both percentage agreement and rank coefficient

As changes in the external environment, such as legislation related to persons with disabilities, occur, it is recommended that continuous monitoring and revision of the instrument takes place for it to remain relevant. It is suggested that the methodology employed in this study could provide useful guidelines for developing methods of measurement for the other activities in the vocational rehabilitation process.

Guidelines are needed to structure a situation to be able to provide an effective and efficient service. The measurement criteria identified can be used to guide occupational therapists to structure VAAs also within the open labour market. The identification of the measurement criteria is the first step in the quality assurance cycle whereby the process of continuous quality improvement can be initiated for the assessment of work abilities of clients. Being able to ensure quality of service delivery in VAAs will position occupational therapy favourably in relation to the other stakeholders operating in the field of vocational rehabilitation. The following statement by De Bono summarises the importance of having a clear picture of the actions to be undertaken and in the context of the study, what actions need to be undertaken to ensure quality assurance in VAAs. "Once a game is laid out in a clear manner, people become very good at playing the game. The game of simplicity needs to be as clearly defined as the game of quality."<sup>23:10</sup>

## References:

1. United Nations. Realisation of the Rights of Persons with Disabilities Through International Standard setting (Standard rules on the Equalisation of Opportunities for Persons with Disabilities). 1994.
2. Republic of South Africa. Employment Equity Act. 1998 October; 55.
3. Republic of South Africa. Labour Relations Amendment Act. 1996 10 September 1996; 42.
4. Republic of South Africa. White Paper on an Integrated National Disability Strategy. 1997.
5. Bauman MK. The importance of outcome measurement in quality assurance. Holist Nurs Pract, 1991; 5(3): 8.
6. Society for Hospital Social Work Directors. Quality and quantity assurance for social workers in health care : a training manual. Chicago, Ill. American Hospital Association; 1981.
7. Wright CC, Whittington D. Quality assurance: An introduction for health care professionals. Churchill Livingstone; 1992.
8. Berwick DM. Continuous improvement as an ideal in health care. N Engl J Med, 1989; 320(1): 53-56.
9. Anderson Y. European nurses take lead in quality assurance. Int Nurs Rev, 1994 Jan-Feb; 41(1): 13-16.
10. Braveman B. Leading & managing occupational therapy services : an evidence-based approach. Philadelphia: Davis; 2006.
11. Crombie IK. The Audit handbook : improving health care through clinical audit. Chichester, West Sussex: Wiley; 1993.
12. Wakefield DS, Wakefield BJ. Overcoming the barriers to implementation of TQM/CQI in hospitals: myths and realities. QRB Qual Rev Bull, 1993 Mar; 19(3): 83-88.
13. Donabedian A. The role of outcomes in quality assessment and assurance. QRB Qual Rev Bull, 1992 Nov; 18(11): 356-360.
14. Innes E. Workplace-based occupational rehabilitation in New South Wales, Australia. Work, 1995; 5(2): 147-152.
15. Kettle M. Personal injury compensation cases in the United Kingdom-The use of American vocational assessment tools in personal injury compensation. Work, 1995; 5(1): 17-22.
16. Pratt J, Jacobs K. Work practice: international perspectives. Butterworth-Heinemann Medical; 1997.
17. Schneider M, Marshall S. Society Security for People with Disabilities. Research report: Department of Welfare, Directorate: Social Security. 1998.

18. Rudman D, Hall M, Langlois S. The evolution of a quality programme within a changing environment. Canadian Journal of Occupational Therapy 1997; 64(1): 16-24.
19. Roberts A. Who owns quality in the occupational therapy profession and how do we assure it. British Journal of Occupational Therapy 1992;55(1): 4-6.
20. Society for Hospital Social Work Directors. Quality and quantity assurance for social workers in health care: a training manual. Chicago, Ill. American Hospital Association; 1981.
21. Sale D. Quality assurance. 1st ed. Basingstoke, Hampshire: MacMillan; 1990.
22. Travis J. Cross-disciplinary competency standards for workrelated assessments: Communicating the requirements for effective professional practice. Work, 2002; 19: 269-280.
23. De Bono E, Arzt E, de Bono E, de Bono E, Médecin I, Malta GB. Simplicity. Viking; 1998.

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