

African Journal for Physical, Health Education, Recreation and Dance (AJPHERD) October 2015 (Supplement 1:2), pp. 385-395.

The relationship between final year occupational therapy students' values and their levels of achievement

MARIANNE DE BEER AND HENK SWANEPOEL

University of Pretoria, Pretoria 2000, South Africa.
E-mail: Marianne.debeer@up.ac.za

Abstract

This study set out to investigate the relationship between individual values of final year occupational therapy students at seven universities as well as the eventual performance of each student during the final evaluation. Using a quantitative research method, a total of 154 final year students were assessed in the early part of their final year by means of the Value Scale - a standardised instrument for the multicultural population in South Africa. The final grade each student obtained was reflected by the mean of the grades obtained in all the subjects for that study year. This grade reflected both theoretical knowledge and the practical application of such knowledge. No positive correlations were found between the six second-order value factors and their achievement percentages for the sample as a whole. However, a negative correlation was obtained in terms of autonomous lifestyle and the students' levels of achievement ($r = -0,169$; $p = 0,036$) for the sample as a whole. This result indicates that the higher the students rated independence of action within their work, as well as creativity, diversity, change of activities and risk incurred in projects proposed, the lower their average grades tended to be. In a profession that sets a high value on creativity and independence, it is specifically those students possessing these values who seem to flounder. It is recommended that the autonomy and creativity of occupational therapy students in the clinical field be researched by means of a qualitative method since the declared values by means of self-report measures in quantitative research may not reveal a student's operational value system.

Keywords: Success, education, creativity, independence, ethics.

How to cite this article:

de Beer, M. & Swanepoel, H. J. (2015). The relationship between final year occupational therapy students' values and their levels of achievement. *African Journal for Physical, Health Education, Recreation and Dance*, Supplement 1:2 (October), 385-395.

Introduction

Becoming a professional in the field of occupational therapy necessitates both motivation and commitment and is tied to professional behaviour (Hills, Ryan, Smith & Warren-Forward, 2012). One such form of behaviour is the ability to employ clinical reasoning in occupational therapy (Koski, Simon & Dooley, 2013) which consists of a content aspect or the "what" on the one hand, and a thinking process aspect or the "how" on the other. The content aspect can be subdivided in various modes such as scientific, narrative, pragmatic, ethical, interactive and conditional reasoning (Mattingly & Fleming, 1994) while the

thinking process in essence is concerned with complex problem solving (Higgs, Jones, Lotus & Christensen, 2008).

For this complex problem solving process to be effective there should be interaction between the occupational therapists' acquired knowledge stored in their memory or 'memory thinking', novel idea generation or 'creative thinking', 'critical thinking' (evaluation of ideas) and 'practical thinking' or the correct action in a given time (Sternberg, 2005). This thinking process is also influenced by the occupational therapists' frames of reference which include their values and beliefs (Smith, Higgs & Ellis, 2008). The process of clinical reasoning can thus be described as both multifaceted and complex (Smith et al., 2008).

Owing to the complex nature of clinical reasoning students often experience this process as quite challenging. Mastering clinical reasoning calls for commitment, hard work and determination so that each patient can be met with ... "original responsibility (and) with initiative ..." (du Toit, 2009:9). In a study conducted by Hills et al. (2012:159) it has been suggested that the clinical reasoning of 'Generation Y' students is shallow as they get bored easily and "rush to get to the end point (of reasoning)". This notion raises a question about the values underpinning the students' motivation to strive for excellence in clinical reasoning.

Methodology

Research design

A quantitative research design was used to correlate the final year occupational therapy students' levels of achievement scores with their declared values.

Sampling

A convenience sampling method (Polit & Beck, 2010) was employed for the year 2002 in order to recruit all the final year occupational therapy students available for the study at seven of the eight universities that offer occupational therapy education in South Africa.

Ethical considerations

The study was approved by the Ethics and Research Committee of the Faculty of Health Sciences at a certain university in South Africa (Ethics Protocol number: MP 97/2001). All heads of departments at the eight universities where occupational therapy is offered were contacted in writing for permission to obtain both the values and the final average grades of their final year students at the end of 2002. Students had to give their consent to participate in the study,

with the understanding that their participation would be voluntary and that refusal to participate would involve no penalty or loss of benefits to which they were entitled, and furthermore that their responses would be kept confidential.

Participants

The number of final year occupational therapy students from the seven universities who were initially selected to participate in the study was 164. Only one university opted not to participate in the study. Of the 164 students whose values were measured initially, only 154 were eventually included in the study. Four students did not obtain the required sub-minimum of 45% in their year grade and six students had to postpone their studies because of personal challenges. All of the students at the seven universities who participated in the investigation did so voluntarily.

Instrument

The instrument employed was the Value Scale (VS) and was used to measure the relative importance students placed on 22 different values. The VS was developed by Langley, Du Toit and Herbst (1995) and is based on Super's Work Values Inventory Scale (Super, 1973). It consists of 110 questions pertaining to 22 value scales and each value is measured in terms of a five point scale. The VS can be completed in 30 to 50 minutes.

An unusual but highly desirable aspect of the VS is that it was developed explicitly for use in cross-cultural research and is standardised for English, Afrikaans and African language groups in South Africa. The reliability coefficients of the VS are all higher than 0.70 for the total sample, with 12 scales having a reliability coefficient of 0.80 or higher (Langley et al., 1995).

In terms of construct validity a principal component analysis that was performed extracted six factors. These were inner-oriented needs, humanism and religion, social needs, physical needs, material needs and autonomous life style. The 22 values that could be associated with the six second-order factors are set out in Table 1. The VS was deemed appropriate for this study since it was developed, as mentioned, explicitly for use in cross-cultural research.

Procedures

Data collection

Value Scale (VS): The VS was conducted by a registered clinical psychologist going to each of the seven universities that offered occupational therapy programmes from 18 March to 25 April 2002.

Table 1: Second-order factors and values (Langley, du Toit & Herbst 1995)

Second-order factors	Values
Inner-oriented needs	Ability utilisation Economic security Personal development Advancement Achievement
Humanism and religion	Altruism Spirituality Aesthetics
Social needs	Social interaction Social relations Cultural identity
Physical needs	Physical prowess Physical activities
Material needs	Prestige Economic rewards Authority Working conditions
Autonomous lifestyle	Autonomy Creativity Risk Own life style Variety

On completion of the questionnaire each student's score sheet was collected and scored by the psychologist. Students from each of the occupational therapy departments of six universities were tested as a single group at each of those universities, but at one university, owing to their fieldwork commitments, students were divided into two groups that were tested separately on two different days in the clinical field.

The psychologist gave each student a consent form, a biographical information form and the VS to complete. The instructions for the VS were given on pages 1, 2 and 3 of the booklet and the psychologist read these with the students. The psychologist also made sure that the students clearly understood the instructions. The number of statements pertaining to 22 values and four possible responses was 110. For instance:

It is now or will in the future be important to me to ... help people with problems that are:

A: of little importance, **B:** of some importance, **C:** important, **D:** very important

No definite time limit was set but the VS can normally be completed in less than 50 minutes.

Achievement percentage

At the end of 2002 the researcher telephonically contacted the heads of the departments at the seven universities in order to obtain the final grades of each student which comprised both the year grade and the examination grades.

Data analysis

Scoring of the test

The items were arranged in such a way on the answer sheet that scoring was straightforward and scale scores easily obtained. Each scale consisted of five items and each row of items on the answer sheet represented the five items of the scale. A raw score of all 22 values was obtained for each of the students.

All data were captured electronically on Microsoft Excel and exported to SPSS (Statistical Package for the Social Sciences) (SPSS, 2001). The relationship between the dependent variables was calculated using the Pearson correlation coefficient. Many of the variables were considered continuous in nature or assumed to be measures on an interval scale. Where the goal was to establish the existence of a linear relationship between two such continuous or interval scale variables, the Pearson's Product Moment Correlation Statistic was employed. The correlations were calculated between the 22 measured values and the achievement percentage or final average grade.

The study computed the internal consistency reliability coefficient, the Cronbach alpha (Allen & Yen, 2002) for each of the 22 measured values as well as the six second-order factors used. A factor analysis (de Bruin, 2001) was carried out on the 22 values of the VS. The results obtained from the seven universities were compared in respect of their mean values scores and achievement percentage by performing a one-way analysis of variance procedure using the GLM statistical.

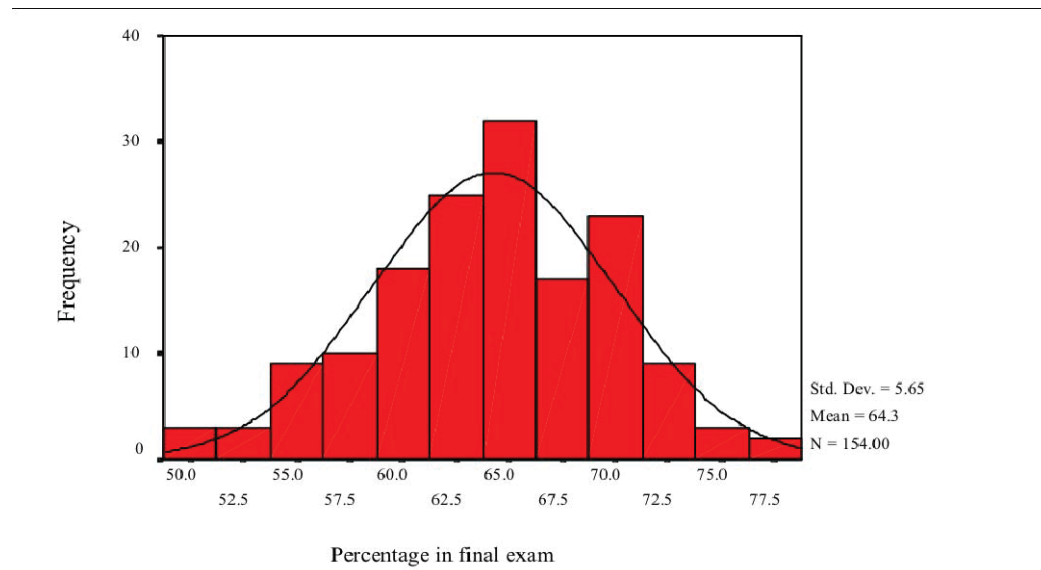
Results

The demographic details of participants are presented in Table 2. The majority of the students were females (96%) between the ages of 20 and 23 (87%).

Table 2: Demographic details of participants

Variable		Students (N=154)	%
Gender	F	148	96.1
	M	6	3.9
Age	20-23	134	87%
	24-28	20	13%

The students' examination scores appear to be a fairly normal distribution with a mean of 64.3% and a standard deviation of 5.65% as depicted in Figure 1.

**Figure 1:** Frequency distribution of examination scores

The correlation between the students' achievement percentages and the second-order factors as defined by the VS Manual for the sample as a whole is set out in Table 3.

In terms of the analysis no significant positive correlation was found between the students' achievement percentages and the six second-order factors.

Discussion

The number of final year occupational therapy students at the seven universities who participated in the study was 154. The distribution of the final average grade appeared to conform fairly well to a normal distribution with a mean of 64.3% and a standard deviation of 5.65%. Because the final average grades of all participants approached a normal distribution with a mean of 64.3% and an SD

Occupational therapy students' values and their levels of achievement 391

of 5.65%, results could be generalised for the final year occupational therapy students who qualified in 2002.

Table 3: Correlation between achievement percentages and the second-order factors as defined in the Value Scale Manual for the sample as a whole (N=154)

Second-order factors in terms of the Value Scale Manual	Correlation (r) Significance (p)	Achievement Percentage
Inner-oriented needs	Pearson Correlation	-.035
	Sig. (2-tailed)	.668
Autonomous life style	Pearson Correlation	-.169(*)
	Sig. (2-tailed)	.036
Humanism and religion	Pearson Correlation	.047
	Sig. (2-tailed)	.563
Social needs	Pearson Correlation	.053
	Sig. (2-tailed)	.518
Physical needs	Pearson Correlation	-.159(*)
	Sig. (2-tailed)	.048
Material needs	Pearson Correlation	-.021
	Sig. (2-tailed)	.798

* Correlation is significant at the 0.05 level (2-tailed)

Of the 22 measured values of the VS, 21 were above an acceptable level of 0.07 with 10 values having an internal consistency reliability coefficient of 0.80 or higher. The six second-order factors were also above the acceptable level of 0.70 with two having a reliability of higher than 0.80. In measuring the students' values to determine whether there was a relationship between any of their values and their achievement percentages, no general positive correlation could be determined. A negative correlation however, was found between two specific values; these were *autonomous life style* and *physical needs*, compared to the students' academic achievements. The possible reasons for these results will be discussed next.

Autonomous life style

A very meaningful result was obtained in this area. For the sample as a whole there was a negative correlation between **autonomous life style** and achievement percentages ($r = - 0,169$; $p = 0,036$). This result indicates that the higher the

students rated independence of action within their work, as well as creativity, diversity, change of activities and risk incurred in projects proposed, the lower their average grades tended to be.

An intrinsic factor that could have influenced the results was that those students who had been of the opinion that they were able to work independently did so without realising that they needed guidance in performing clinical reasoning. This lack of insight into their level of clinical reasoning and subsequent intervention skills could have had an effect on the effectiveness of their performance. This result seems to be in line with research conducted by Hills et al. (2012) who reported that Generation Y students seem to be overconfident about their skills level and not interested to learn from their educators' feedback.

Another factor that could have influenced the students' performance was the communication between educator and student. Where an interpersonal communication struggle existed the educator may not have wanted to deal with a student who is not achieving the learning outcomes (Magnuson, Wilcoxon & Norem, 2000). Furthermore, the effectiveness of supervision seems to hinge on the willingness of those who are supervised to share their concerns with the supervisor (Sweeney et al., 2001b).

Physical needs

For the sample as a whole there was a negative correlation between **physical needs**, that is for students to participate in activities which demand physical strength and to be physically active, and achievement percentages ($r = -0,159$; $p = 0,048$). This indicates that the higher the students rated being respected for their physical strength and fitness, the lower their average grades tended to be. Although some areas of occupational therapy practice do require physical strength and activity, this skill is not necessarily valued in occupational therapy.

Inner-orientated needs

For the sample as a whole there was no significant correlation between the students' achievement percentages and **inner-oriented needs** such as ability-utilisation, economic security, personal development, advancement and achievement.

Sternberg (2002) indicated that students who excel are those who are taught in a way that best fits their learning style. He is further of the opinion that students' ability to perform optimally requires memory, creative, analytical and practical teaching and learning methods. Owing to the nature of occupational therapy education all modes of teaching and learning are employed.

Humanism and religion

For the sample as a whole there was no significant correlation between the students' achievement percentages and **humanism**, and their spirituality such as the person's spiritual orientation and altruism. Since the client-centred approach in occupational therapy is a blend of competence and caring (Pelequin, 2002), a respect for self, empathy for others and personal integrity, one would expect that there would be a relationship between humanism, spirituality and achievement. These qualities, however, did not seem to dominate the occupational therapy students' motivation to strive for excellence in their clinical reasoning, and consequently in their patient care.

Social needs

For the sample as a whole there were no significant correlations between achievement percentages and **social needs**. Since social values are characterised by virtues such as respect kindness and friendliness (Sharf, 1997; Zanna & Olsen, 2010) which are all important in the practice of occupational therapy, this raises questions about the extent to which occupational therapy students are understanding and directed towards people. This finding seems to be in line with Hills et al.'s (2012) research findings of practice educators who were concerned with students' attitude and professional behaviour.

Material needs

For the sample as a whole there was no significant correlation between **material needs** such as authority, prestige, economic reward and achievement percentage. This result is in line with research conducted by Super and Šverko (1995) who concluded that people at higher occupational levels express a greater degree of orientation towards self-fulfillment, whereas people at lower occupational levels value material rewards more and are therefore more extrinsically orientated.

Extrinsic factors

From an external point of view the reliability and validity of the assessment procedures could be a contributing factor in the evaluation of students in the clinical field.

Recommendations

It is recommended that the autonomy and creativity of occupational therapy students in the clinical field be researched by means of a qualitative method since the declared values by means of self-report measures in quantitative research may not reveal a student's operational value system. At times students

may not even be aware of their values and sometimes they may perhaps even try to gain social approval by hiding their true motives. It is further recommended that qualitative research methods be employed such as observation of and interviewing students, appraising their written work, and employment of focused groups to determine how their values influence their creativity.

Conclusion

On entering fieldwork settings it is required of occupational therapy students to develop professional behaviour that includes clinical reasoning skills. To acquire these skills students need to observe therapists in practice, should practice under supervision, critically reflect on their own reasoning skills and receive constructive feedback from occupational therapy educators. Once students are familiar with the process they should be prepared to act autonomously and be creative in clinical reasoning. An efficient structure and graded teaching process should be ensured to enable students to achieve this goal.

Acknowledgement

We would like to thank the participants who willingly took part in the study and Prof Charl Vorster for his reflections on the results.

References

- Allen, M.J. & Yen, W.M. (2002). *Introduction to Measurement Theory* (pp. 72--94). Long Grove, IL: Waveland Press.
- De Bruin, G.P. (2001). Personality assessment. In C. Foxcraft, C. & G. Roodt, (Eds.), *An Introduction to Psychological Assessment in the South African Context* (pp. 227-247). Cape Town, South Africa: Oxford University Press.
- Du Toit, V. (2009). *Initiative in Occupational Therapy* (4th ed.) (pp. 1-19). Pretoria: The Vona & Marie du Toit Foundation.
- Higgs, J. & Jones, M.A. Jones (2008). In Higgs, J., Jones, M.A., Lotus, S. & Christensen, N. (Eds.), *Clinical Reasoning in the Health Professions* (pp. 3-17). Philadelphia: Elsevier.
- Hills, C., Ryan, S., Smith, D.R. & Warren-Forward, H. (2012). The impact of 'Generation Y' occupational therapy students on practice education. *Australian Occupational Therapy Association*, 59, 156-163.
- Koski, K.J., Simon, R.L. & Dooley, N.R. (2013). Valuable occupational therapy fieldwork educator behaviours. *Work*, 44, 307-315.
- Langley, R., Du Toit, R. & Herbst, D.L. (1995). *Manual for Values Scale* (pp.1-25). Pretoria, South Africa: Human Sciences Research Council.

Occupational therapy students' values and their levels of achievement 395

Magnuson, S., Wilcoxon, S.A. & Norem, K. (2000). A profile of lousy supervision: Experienced counselors' perspectives. *Counselor Education and Supervision*, 39, 189-202.

Mattingly, C. & Fleming, M.H. (1994). *Clinical Reasoning: Forms of Inquiry in a Therapeutic Practice* (pp.119-291). Philadelphia: FA. Davis Company.

Meulman, J.J. & Heiser, W.J. (2001). *SPSS Categories® 11.0* (pp. 1-330). Chicago: SPSS Inc.

Pelequin, S.M. (2002). Reclaiming the vision of reaching for heart as well as hands. *The American Journal of Occupational Therapy*, 56(5), 517-525.

Polit, D.F. & Beck, C.T. (2010). *Nursing Research: Appraising Evidence for Nursing Practice* (7th ed.) (pp. 305-333). Philadelphia: Wolters Kluwer Health/ Lippincott Williams & Wilkins.

Sharf, R.S. (1997). *Applying Career Development Theory to Counselling* (2nd ed.)(pp. 62-89). New York: Brooks/Cole. Smith, M.

Smith, M., Higgs, J. & Ellis, E. (2008). Characteristics and processes of physiotherapy clinical decision making: A study of acute care cardiorespiratory physiotherapy. *Physiotherapy Research International*, 13(4), 209-222.

Sternberg, R.J. (2002). Raising the achievement of all students: Teaching for successful intelligence. *Educational Psychology Review*, 14(4), 383-393.

Sternberg, R.J. (2005). The theory of successful intelligence. *Interamerican Journal of Psychology*, 39(2), 189-202.

Super, D.E. (1973). The Work Values Inventory. In D.G. Zytowski (Ed.), *Contemporary Approaches to Interest Measurement* (p. 190). Minneapolis: University of Minnesota Press.

Super, D.E. & Šverko, B. (Eds) (1995). *Life Roles, Values and Careers: International Findings of the Work Importance Study* (pp. 3-21). San Fransisco, California: Jossey-Bass.

Sweeney, G., Webley, P. & Treacher, A. (2001b). Supervision in occupational therapy, Part II: The supervisee's dilemma. *British Journal of Occupational Therapy*, 64(7): 337-334.

Zanna, M. & Olson, J.M. (Eds) (2010). *Advances in Experimental Social Psychology* (pp. 1-33). San Diego, CA: Academic Press.