

## A New Measure of Generic Competencies

M. C. Dorinda Fung

W. Y. Winnie Lee

S. L. Philip Wong

*Student Affairs Office*



## Key/Generic Competencies

- ◆ Generic competencies – transferable, multi-dimensional, multi-functional knowledge, skills and attitudes (ECSPoLL, 2004; Rychen & Salganik [OECD], 2001).
- ◆ Proficiency in generic skills – the main requirement for the modern worker (ACCI & BCA, 2002).

## The SAARD Questionnaire

- ◆ Relatively few assessment resources/tools are available in the field.
- ◆ A newly developed self-assessment inventory for university students – the Self-Assessment of All- Round Development (SAARD) Questionnaire (Hong Kong PolyU, 2006) will be introduced.

## Objective

- ◆ To create a new inventory that can differentiate student groups exhibiting different kinds and levels of generic competencies.

## Development of the Questionnaire

- ◆ An initial draft of the SAARD Questionnaire with 84 items had been developed to probe into 14 areas of generic competencies:

Communication

Creative Thinking

Critical Thinking

Cultural Appreciation

EQ & Psychological Wellness

Entrepreneurship

Global Outlook

Healthy Lifestyle

Interpersonal Effectiveness

Leadership

Life-long Learning

Problem Solving

Social & National Responsibility

Teamwork

## Development of the Questionnaire

- ◆ Item pool – based on extensive literature review and feedbacks from students, relevant experts and employers.
- ◆ Rating scale – a 7-point scale for all items to enhance user-friendliness.

## Sample Items

- ◆ “Communication” is defined as:

The ability to apply oral and writing skills to communicate clearly, concisely, and effectively with others.”

## Sample Items

- ◆ How well do you think you are able to:

communicate messages clearly to other people in a well-organized manner?

1 = Not well at all

7 = Very well

## Sample Items

- ◆ “Social and National Responsibility” is defined as:

An orientation to help the underprivileged, a belief in the rights of all individuals, and a willingness to commit time and energy to resolve problems of one’s community and/or country.

## Sample Items

- ◆ To what extent can the following statement truly describe you?

I avoid talking on my mobile phone inside libraries or cinemas.

1 = Never true of me

7 = Always true of me

## Pilot Survey (Early 2006)

- ◆ Aim: To examine the reliability and validity of the new instrument.
- ◆ 35 classes from all seven Faculties, four levels of study, and both sexes had been approached, and we received 1,498 valid responses (response rate: 83 per cent).

## Data Analyses

- ◆ All valid responses were submitted to analyses using the SPSS and the AMOS statistical packages.
- ◆ Reliability: Internal reliability (Cronbach’s alpha values and mean inter-item correlations [MICs]) of the overall SAARD Questionnaire and its subscales.
- ◆ Validity: Exploratory factor analysis (EFA), confirmatory factor analysis (CFA) and known group differences.

## Results (Reliability)

- ◆ Twenty eight 'poorer' items were deleted first.
- ◆ The Cronbach alpha values/MICs of the more condensed 56-item SAARD Questionnaire were found to be:
- ◆ Overall scale: 0.95/0.25  
Subscales: 0.61 - 0.91/0.30 - 0.70
- ◆ Robinson, Shaver and Wrightsman (1991):

Indicator	Exemplary	Extensive	Moderate	Minimal
Alphas	≥ .80	.70 - .79	.60 - .69	< .60
MICs	≥ .30	.20 - .29	.10 - .19	< .10

## Results (Factorial/Construct Validity)

- ◆ Exploratory factor analysis (EFA) – principal axis factoring using the varimax rotation procedure.
- ◆ A 11-factor solution emerged, which accounted for 48.54 per cent of the item variance.
- ◆ A clear, interpretable factor structure that was generally consistent with our a priori hypothesised structure was observed.

## Results (Factorial/Construct Validity)

- F1 Communication
- F2 Cultural Appreciation
- F3 EQ and Psychological Wellness
- F4 Entrepreneurship
- F5 Global Outlook
- F6 Interpersonal Effectiveness
- F7 Social and National Responsibility
- F8 Cognitive and Learning Competence (Critical Thinking, Creative Thinking, Problem Solving, Life-long Learning)
- F9 Working in Groups (Leadership, Teamwork)
- F10 Healthy Lifestyle (Engagement in Physical Activity)
- F11 Healthy Lifestyle (Health Responsibility)

## Results (Factorial/Construct Validity)

- ◆ Confirmatory factor analysis (CFA):

CFI: 0.90

RMSEA: 0.040

in early 2006 AND August, 2006.

- ◆ The 11-factor solution fitted the data well.

## Results (Known Groups Validity)

- ◆ To test the hypothesis that certain subgroups of the students would report higher scores on some of the subscales of the SAARD.
- ◆ To the extent that the SAARD is valid, it should be able to differentiate student groups exhibiting different kinds and levels of generic competencies.

## Results (Known Groups Validity)

### 1. Level of study:

Hypothesis – Since those studying at a higher level would demonstrate better development in their Cognitive and Learning Competence (e.g. critical thinking, problem solving), they would therefore rate themselves higher than those studying at a lower level.

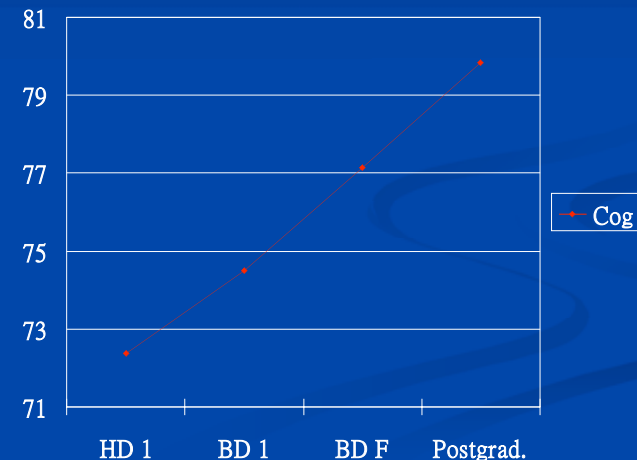
## Results (Known Groups Validity)

### 1. Level of study (MANOVA):

Level of study	<i>n</i>	Cog
HD 1	293	72.27
BD 1	622	74.48
BD F	228	77.08
Postgrad.	257	79.85
<i>F</i>		27.00
<i>p</i>		< .0001

## Results (Known Groups Validity)

### 1. Level of study:



## Results (Known Groups Validity)

2. Discipline of study (MANOVA):

a) Creative Thinking –

Design: 20.06 (Mean scores)

Others : 18.23

$F = 14.65, p < .0001$

b) Cultural Appreciation –

Design: 21.76 (Mean scores)

Others : 18.32

$F = 24.21, p < .0001$

## Results (Known Groups Validity)

c) Entrepreneurship –

Business: 19.88 (Mean scores)

Others: 19.21

$F = 12.12, p = .001$

3. Gender: Engagement in Physical Activities –

Male: 9.20 (Mean scores)

Female: 7.82

$F = 75.51, p < .0001$

## Conclusions

◆ In conclusion, results generated from:

1. Internal reliability analysis
2. Exploratory factor analysis
3. Confirmatory factor analysis
4. Known groups validity analysis

indicate that the 56-item SAARD Questionnaire is a reasonably reliable, valid and useful instrument for measuring the all-round development of students.

## Conclusions

- ◆ Extensive coverage of the major dimensions of 14 generic competencies in 1 tool.
- ◆ Behavioral skill items.
- ◆ Reasonably concise and user-friendly: only takes 15 minutes (on average) to complete.

## Recommendations

- ◆ The SAARD is designed for producing general profiles of all-round development at individual, programme/departmental/faculty, and institutional levels.
- ◆ Administer the SAARD to students during their entry and exit points.
- ◆ Student norms allow students to get useful individual guidance/feedback about their developmental status and needs.
- ◆ Uploading students' profiles to their e-Portfolios help them document their growth over time.

## Limitations

- ◆ The results of the present study are encouraging.
- ◆ But no single study can demonstrate, or refute, the validity of a new instrument.
- ◆ We still need to further examine the construct validity of the SAARD Questionnaire.
- ◆ The SAARD is NOT a substitute for direct measures.

Thank you!