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Title	Changing perspectives: Adapting "CAPTA" for studying the attitudes of student P.E. teachers
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Source	<i>ERA Conference, Singapore, 24-26 September 1992</i>
Organised by	Educational Research Association of Singapore (ERAS)

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# CHANGING PERSPECTIVES: ADAPTING "CAPTA" FOR STUDYING THE ATTITUDES OF STUDENT P.E. TEACHERS

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## INTRODUCTION

It has been suggested that *the development of a good attitude toward taking part in physical activity* is one of the most important, and in some cases the most important, objective of a PE programme (Carre, Mosher, and Schutz, 1980). Earlier studies in Singapore have revealed that despite continuing academic pressure, attitudes amongst students are generally high (Aplin, 1990), and that Secondary girls are less enthusiastic than their Canadian counterparts in activities involving risk (vertigo subdomain) and sacrifice of time (ascetic subdomain) (Aplin and Saunders, 1991).

The present study attempts to examine how well student physical educationalists in Singapore are in tune with the underlying beliefs of pupils concerning physical activity. To understand the attitudes and associated behaviours of their prospective pupils, teachers tend to make assumptions about what the pupils believe. Attempts to initiate appropriate changes to behaviour will be more successful, if the teacher understands, that the pupils do not necessarily hold the same enthusiasm for physical activity as they do themselves. The CATPA inventory has been used here to see firstly, how well PE teachers can predict the attitudes of the children towards established subdomains (see Figure 1), and secondly, what are their own attitudes as participants. Variables of sex and teaching orientation (Primary or Secondary) were also examined.

SOCIAL GROWTH	PHYSICAL ACTIVITY FOR SOCIAL GROWTH (a chance to meet new people)
SOCIAL CONTINUATION	PHYSICAL ACTIVITY TO CONTINUE SOCIAL RELATIONS (a chance to be with friends)
HEALTH & FITNESS	PHYSICAL ACTIVITY FOR HEALTH AND FITNESS (improving health and getting into better shape)
VERTIGO	PHYSICAL ACTIVITY AS A THRILL BUT INVOLVING RISK (risk with speed, change of position and location)
AESTHETIC	PHYSICAL ACTIVITY AS THE BEAUTY IN MOVEMENT (involvement in beautiful and graceful movements)
CATHARSIS	PHYSICAL ACTIVITY FOR THE RELEASE OF TENSION (to reduce stress or to get away from problems)
ASCETIC	PHYSICAL ACTIVITY AS LONG AND HARD TRAINING (sacrificing spare time in order to improve by means of long and hard practices)

**Figure 1** Revised CATPA Inventory: Subdomain Descriptions

Some part of teacher training should be devoted to enlightening the students as to how the students develop their beliefs and attitudes towards the different subdomains of physical activity. It would seem that greater emphasis should be placed on *vertigo* activities for girls (Aplin and Saunders, 1991) *Ascetic* activities present a problem because of conflicting demands for time. Academic pressure is considerable and parents are reluctant to allow their children to devote too much time to developing their potential in ECAs.

Heuristics may play a part in structuring the PE teachers perceptions of children's beliefs. "We all enjoyed gymnastics when I was at school, so I'm sure these children do too" will probably lead to unjustifiable conclusions and perhaps inappropriate curriculum planning.

### THE DEVELOPMENT OF CATPA

Kenyon (1968b, 1969c) developed an inventory to assess attitudes towards physical activity (ATPA). It was based on his multidimensional model of physical activity (Kenyon, 1968a). He used a semantic differential form of inventory which enabled each subdomain to be quantified through the use of a 7-point scale for each of eight bipolar adjectives (e.g. good----bad).

Simon and Smoll (1974) modified ATPA and subsequently a revised instrument was developed and administered as part of the British Columbia Physical Education Assessment project (Carre, Mosher and Schutz, 1980). Utilising the results of Wood's study (1979) the CATPA inventory incorporated five adjective word pairs (instead of eight) and the Health and Fitness dimension was scored as two separate components (these factors being identified as 'value' and 'enjoyment'). The social subdomain was split into a 'growth' dimension and a 'continuation' dimension, enabling different attitudinal dispositions to be revealed, viz. participating gives the opportunity to *meet new people* and participating gives the opportunity to *be with friends*.

### VALIDITY AND RELIABILITY OF CATPA

Factor analysis was used to support the original multidimensional conceptual model of Kenyon (1968a). Subsequently the CATPA inventory and its modifications were supported also (Schutz, Smoll and Wood, 1981b). Construct validity of the *physical activity* as an attitude object was provided by Schutz, Smoll and Wood, (1981a). Concurrent validity of CATPA relative to ATPA was established by Schutz and Smoll (1977). Only modest concurrent validity exists in the relationship between CATPA as a measure of attitude and the behaviour of the subjects. And according to Schutz, Smoll, Carre and Mosher (1985), although there is little empirical evidence for predictive validity, it is possible to give some support to the claim for convergent validity.

It has been found that, in terms of internal consistency CATPA is reliable. Schutz and Smoll (1977) and Schutz et al.(1981b) established Hoyt reliabilities of .80 and .90. Test-retest reliability was brought into question when the original CATPA was administered to elementary school children by Simon and Smoll (1974). However the revised version achieved higher median reliability coefficients (.71 for a two week interval, and .67 for a nine week interval).

Schutz et al.(1985) conclude by recommending that the CATPA inventory is reliable for assessing group status and change, but not for individual assessment.

### USE OF CATPA IN SINGAPORE

Aplin and Saunders (1991) validated the use of CATPA within the Singapore context, obtaining values which ranged between .637 and .863 for eight subdomains. Factor analysis was also undertaken in the present study, with the findings basically supporting the previous set of results.



**RESULTS<sup>1</sup>**

The scale means and standard deviations for the current survey are shown in Table 1, with selected comparisons in Tables 2-4. The results show that the students were able to predict the general trend of pupils responses as illustrated by the figures for 1991 ie. there is generally a positive attitude to all subdomains except *Ascetic* - as indicated by a scale mean of less than 15.00 (see Figure 2). See also selected graphic comparisons in Figures 3 and 4. [NB. No tests were run to produce a statistical comparison between the 1991 group and the SPE student teachers.] There were no significant differences between: (a) male and female student teachers, and (b) Primary and Secondary student teachers.

**Table 1 Means, SD and rank for each perspective**

Perspective		Teacher predicts children's attitude	Teacher as participant	CAPTA (1991)
Social Growth	Mean	21.28	21.80	20.70
	SD	3.19	2.65	3.43
	Rank	4	4	4
Social Continuation	Mean	22.27	22.82	21.71
	SD	3.21	2.70	3.76
	Rank	1	2	2
Health & Fitness V	Mean	21.75	24.03	23.60
	SD	4.61	2.43	2.83
	Rank	2	1	1
Health & Fitness E	Mean	19.69	22.31	19.63
	SD	5.06	3.28	4.50
	Rank	5	3	6
Vertigo	Mean	16.54	18.54	16.09
	SD	3.95	3.37	5.46
	Rank	7	7	7
Aesthetic	Mean	18.87	19.92	19.85
	SD	4.76	4.61	4.66
	Rank	6	6	5
Catharsis	Mean	21.60	21.39	21.02
	SD	3.52	4.28	4.62
	Rank	3	5	3
Ascetic	Mean	13.97	17.00	13.74
	SD	4.80	3.49	4.88
	Rank	8	8	8
N		67	72	794

Table 2 Comparison between teachers' prediction and CAPTA

Perspective		Teacher predicts children's attitude	Difference	CAPTA (1991)
Social Growth	Mean	21.28	+0.58	20.70
	SD	3.19		3.43
	Rank	4		4
Social Continuation	Mean	22.27	+0.56	21.71
	SD	3.21		3.76
	Rank	1		2
Health & Fitness V	Mean	21.75	-1.85	23.60
	SD	4.61		2.83
	Rank	2		1
Health & Fitness E	Mean	19.69	+0.06	19.63
	SD	5.06		4.50
	Rank	5		6
Vertigo	Mean	16.54	+0.45	16.09
	SD	3.95		5.46
	Rank	7		7
Aesthetic	Mean	18.87	-0.98	19.85
	SD	4.76		4.66
	Rank	6		5
Catharsis	Mean	21.60	+0.58	21.02
	SD	3.52		4.62
	Rank	3		3
Ascetic	Mean	13.97	-0.23	13.74
	SD	4.80		4.88
	Rank	8		8
N		67		794

Scale means of CATPA (SPE)  
SPE student teachers and CAPTA 1991

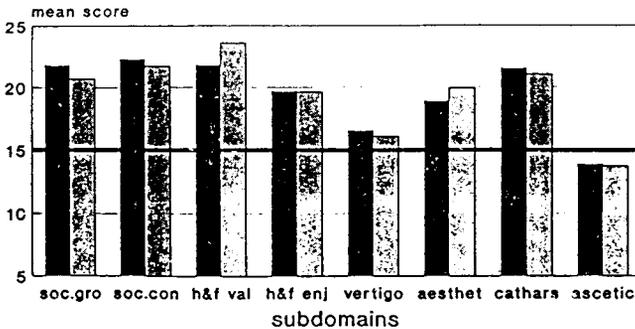


Fig 2

Teacher-perspective CAPTA 1991

Table 3 Comparison between teacher as participant and CAPTA

Perspective		Teacher as participant	Difference	CAPTA (1991)
Social Growth	Mean	21.80	+1.10	20.70
	SD	2.65		3.43
	Rank	4		4
Social Continuation	Mean	22.82	+1.11	21.71
	SD	2.70		3.76
	Rank	2		2
Health & Fitness V	Mean	24.03	+0.43	23.60
	SD	2.43		2.83
	Rank	1		1
Health & Fitness E	Mean	22.31	+2.70	19.63
	SD	3.28		4.50
	Rank	3		6
Vertigo	Mean	18.54	+2.45	16.09
	SD	3.37		5.46
	Rank	7		7
Aesthetic	Mean	19.92	+0.07	19.85
	SD	4.61		4.66
	Rank	6		5
Catharsis	Mean	21.39	+0.37	21.02
	SD	4.28		4.62
	Rank	5		3
Ascetic	Mean	17.00	+3.26	13.74
	SD	3.49		4.88
	Rank	8		8
N		72		794

### Scale means of CAPTA (SPE) SPE student teachers

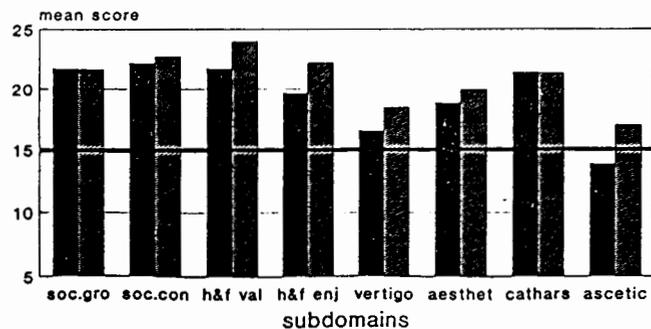


Fig 3 Teacher-perspective Participant-perspective

**Table 4** Comparison between teachers' prediction and teacher as participant

Perspective		Teacher predicts children's attitude	Difference (F Prob.)	Teacher as participant
Social Growth	Mean	21.28	-0.52 (.2998)	21.80
	SD	3.19		2.65
	Rank	4		4
Social Continuation	Mean	22.27	-0.55 (.2744)	22.82
	SD	3.21		2.70
	Rank	1		2
Health & Fitness V	Mean	21.75	-2.28 (.0003)	24.03
	SD	4.61		2.43
	Rank	2		1
Health & Fitness E	Mean	19.69	-2.62 (.0004)	22.31
	SD	5.06		3.28
	Rank	5		3
Vertigo	Mean	16.54	-2.00 (.0017)	18.54
	SD	3.95		3.37
	Rank	7		7
Aesthetic	Mean	18.87	-1.05 (.1901)	19.92
	SD	4.76		4.61
	Rank	6		6
Catharsis	Mean	21.60	+0.21 (.7626)	21.39
	SD	3.52		4.28
	Rank	3		5
Ascetic	Mean	13.97	-3.03 (.0000)	17.00
	SD	4.80		3.49
	Rank	8		8
N		67		72

Scale means of CATPA (SPE)  
SPE student teachers and CATPA 1991

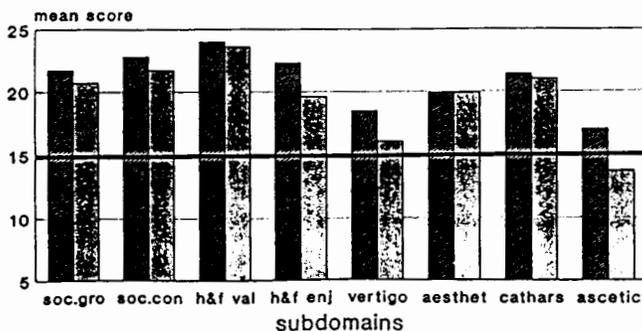


Fig 4

Participant      CATPA 1991

### Student Predictions

*Social Continuation* ranks first in the order. There was little difference between the two student groups.

*Health and Fitness: Value* has a high ranking of 2, but the anticipated score is significantly lower than the Participant group (F Prob.=0.0003, see Table 4). A comparison with the 1991 survey indicates that the SPE students seem to underestimate the value placed on Health and Fitness activities by pupils.

*Catharsis* proves to be the next highest subscale, and although the 'participant' group placed it lower in rank order, there was no significant difference. The results were similar to the 1991 group.

*Social Growth* is the fourth subdomain to achieve a mean score of more than 20, indicating that the students felt that pupils would show high positive attitudes towards this area. There was no significant difference between the 'Teacher' and the 'Participant' groups.

The *Health and Fitness: Enjoyment* category produced the closest prediction of the mean score (a difference of only +0.06) and a significant difference (F Prob.= 0.0004) between the SPE student groups.

The *Aesthetic* subdomain produced no significant difference between the SPE groups. The 'Participant' group compared closely to the 1991 group. Whilst the 'Teacher' group slightly underestimated the value placed on aesthetic activities by the 1991 group.

The *Vertigo* and *Ascetic* subscales produced the lowest scores which closely approximated to the scores of the 1991 group.

### Factor Analysis

The assumption was made that the relationship between the correlated measures and the underlying dimensions (subdomains) would be as found in the 1991 study. This was not totally the case. The 'Social Growth' area was sub-divided in the rotated factor matrix. The bi-polar concepts 'nice-awful' and 'happy-sad' were seen as comprising a different factor from the other concepts. In addition it must be noted that the Health and Fitness subdomain, previously subdivided in the 1991 factor analysis, became a discrete entity again. In view of the difficulty in getting students to 'predict' pupil responses, it is therefore reasonable to suggest that there are problems with the internal consistency of the test when administered to groups of different ages.

### DISCUSSION

This study raises a number of interesting questions about the function of beliefs and attitudes. Is it valuable or even necessary to know what children's attitudes are towards the physical activities that presented to them in schools? Should teachers consider these attitudes when planning the curriculum? Do teachers assume that they know best anyway and plan accordingly?

It would seem that there are a number of obvious benefits from encouraging an awareness of pupils attitudes. From the present study it appears that PE students can predict quite accurately that there are differences in the respective ways that teachers and participants view the separate subdomains (notably in the Health and Fitness, Vertigo and Ascetic areas). With the aid of this

information it should be possible for teachers to make more thoughtful assessments of the PE requirements of their pupils. One specific recommendation would be that teachers consider placing greater emphasis on activities which enhance 'vertigo' qualities, for example, gymnastics and adventure type of activities.

It seems reasonable to suggest that the process of teacher training should include greater awareness of children's attitudes by means of school-based studies. There is a danger that new teachers make false assumptions based on their own school experiences. Conceivably they start with the notion that everyone enjoys and benefits from the PE programme. Perhaps they assume the children have quite well refined ideas about concepts such as fairplay. Clearly this may not be the case.

It is recommended that students should undertake informal studies as part of their teaching practice. The inventories that they might present to the pupils could be designed to answer questions about such topics as:

- a) perceived benefits of physical activity,
- b) differences between boys and girls attitudes to PE,
- c) attitudes towards competition,
- d) the influence of parents on pupil participation, and
- e) the value of participation in team and individual games.

This exposure makes the students more aware that the children they are teaching are not homogeneous in their beliefs; that individual needs must be considered sometimes. The students will also discover that most pupils have a very narrow appreciation of the value of different subdomains.

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## Appendix 1

## FACTOR ANALYSIS

## Rotated Factor Matrix

SUBDOMAIN	F1	F2	F3	F4	F5	F6	F7	F8
SocGroA	.164	.073	.231	.230	-.037	.273	.629	.101
B	.137	.065	.232	.245	.062	.023	.763	.071
C	-.040	.069	.154	.132	.042	.109	.769	.301
D	.124	.159	.086	.206	.143	.227	.396	.640
E	.014	.007	.055	-.001	.076	.280	.389	.752
SocConA	.016	.109	.206	-.038	.000	.686	.305	-.292
B	.032	.034	.139	.230	.180	.749	.184	-.024
C	.006	.027	.096	.086	.730	.733	.187	.113
D	.086	.120	.009	.143	-.030	.841	-.068	.207
E	.076	.028	.033	.020	-.041	.813	.144	-.138
FitnessA	.337	.061	.004	.741	.164	.010	.126	-.068
B	.362	.172	.077	.657	.109	.112	.202	-.258
C	.163	.110	.187	.816	.017	.050	.304	.022
D	.119	.129	.195	.829	.082	.133	.053	.119
E	.143	.027	.177	.766	.104	.229	.077	.302
VertigA	.118	.073	.115	.074	.794	.119	.072	-.066
B	.306	.049	.140	.163	.675	.045	.257	-.201
C	.058	.126	.120	.049	.779	-.045	.104	-.010
D	.023	.086	.172	.082	.797	.093	-.124	.217
E	.133	.045	.197	.056	.780	.129	-.119	.190
AestheA	.835	-.024	.062	.255	.073	.113	.034	.077
B	.834	.064	.064	.140	.088	.052	.108	-.109
C	.851	-.029	.059	.159	.142	.028	.111	-.027
D	.883	.077	.086	.135	.132	.004	-.037	.071
E	.875	.120	.110	.096	.057	.019	.027	.114
CatharA	.034	.856	-.049	.062	.122	.033	.020	.005
B	.060	.805	.019	.066	.200	.041	.109	-.128
C	-.048	.892	.110	.067	.099	.027	.191	-.047
D	.075	.871	.125	.104	-.012	.074	.111	.173
E	.103	.861	.085	.078	-.028	.099	-.141	.106
AscetiA	.036	.084	.840	.101	.059	.174	.121	-.020
B	.119	-.040	.705	.143	.243	.019	.196	.013
C	.102	.027	.806	.151	.127	.069	.213	-.004
D	.062	.069	.862	.111	.163	.014	.065	.074
E	.076	.132	.840	.032	.141	.116	-.040	.056