

# **The Effect of Postgraduate Studies on Elementary School Physical Education Teachers' Perceptions for Overall Pupils' Development Using Ten Teaching Styles**

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## **Abstract**

This study aimed at examining elementary physical education teachers' perceptions on ten teaching styles with regard overall pupils' development, including psychomotor, emotional, social and cognitive perspectives. Forty-two (23 males and 19 females) Hungarian teachers employed in the city of Budapest consented to participate in the interview conducted. Teachers' experience ranged from 5 to 35 years. Thirteen of the teachers have done postgraduate studies in a field of sport sciences, while 29 of them have their bachelor degrees. Chi-square tests of independence were performed to determine the trends among teachers with respect to their gender, teaching experience and postgraduate studies. Significant findings were found for the factor of postgraduate studies in all teaching styles but three cases. Results are presented in term of the reasons speculated to be crucial for such trends.

## **Introduction**

PE teachers have, in the course of time, developed their own personal teaching theories (Bromme, 1984) and compiled their own teaching repertoires of teaching styles that they prefer to use. Teachers are accountable for what happens in the class, and they are the primary decision makers. Teachers define the tasks for pupils (Pieron, 1994).

During the last two decades a great percentage of research studies have been focused on the investigation of teaching and learning behaviours (Gustart & Springings, 1989; Silverman, 1991; Fejgin & Haneby, 1999). A small but growing number of studies in PE have investigated the effects of teaching behaviour on pupil learning and the teaching styles' use in instruction (Goldberger, 1992; Byra & Marks, 1993; Ernst & Byra, 1997; Cai, 1998; Byra & Jenkins, 1998; Curtner-Smith et al., 2001). However, there has not been a published research with respect to teachers' perceptions on teaching styles in Hungary.

In similar fashion to others (Goldberger, 1992; Byra & Marks, 1993; Ernst & Byra, 1997; Cai, 1998; Byra & Jenkins, 1998; Curtner-Smith et al., 2001), who have been interested in studying teaching styles, this study relied greatly on the work of Muska Mosston (1981). Mosston's spectrum of teaching styles is a framework of teaching approaches derived from the chain of decision-making occurring in the teaching-learning interaction. Mosston and Ashworth (2002) theorized that specific teaching styles emerge based on whether the teacher or pupils make these decisions (Curtner-Smith et al., 2001).

This study aimed at examining, from the teachers' perspective, the contribution of each of the ten teaching styles on pupils' social, emotional, cognitive and motor developmental channels (Mosston and Ashworth, 2002). The teaching styles included in this study were: command, practice, reciprocal, self-check, inclusion, guided discovery, convergent discovery, divergent production, learners' individual designed program and learner-initiated styles. The description of teaching styles is presented in figure 1. The significance of such investigation stems from the

evidence that data-based linkages can be established between selected teaching styles and aspects of learners' development (Goldberger, 1983; Salvara, 2001).

**Figure 1 Teaching Styles**

- COMMAND: The teachers makes all the decisions; demonstrates or explains a task for the pupils to emulate, then directs pupils' practice by giving commands. Pupils 'shadow' the action of the teacher.
  - PRACTICE: The teacher demonstrates or describes a task. The pupils then practice the task at their own pace. The teacher provides pupils with feedback as they practice.
  - RECIPROCAL: The teacher demonstrates or describes a task. The pupils practice in pairs. One pupil (the doer) practices while the other pupil (the observer) provides feedback for his partner based on chart criteria given by the PE teacher.
  - SELF-CHECK: The teacher presents a task. Pupils practice at their own pace but are now responsible for analyzing their own performances. Teachers' role is to help pupils hone their self-evaluation skills.
  - INCLUSION: The teacher models a task with several levels of difficulty. Pupils choose the level of difficulty at which they feel more comfortable. Pupils are encouraged to decide when to change to a new level of difficulty.
  - GUIDED DISCOVERY: The teacher asks a series of questions or sets a series of physical problems that when answered or solved lead the pupils to discover a desired skill or concept.
  - CONVERGENT DISCOVERY: The teacher asks a question or sets a physical problem to which there is one possible answer/solution.
  - DIVERGENT PRODUCTION: The teacher asks a question or sets a physical problem to which there are many possible answers/solutions.
  - LEARNERS' DESIGN: Pupils perform a series of tasks organized into a personal program under PE teacher's guidance.
  - LEARNER-INITIATED: Pupils initiate a design, experience it, perform it and evaluate it together with the teacher based on agreed-upon criteria.
- Note: Parts of figures 3 was adopted from Mosston & Ashworth (2002) and Curtner-Smith et al (2001)

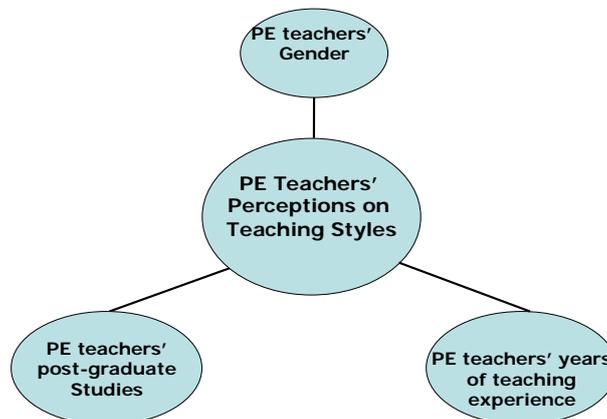
Because each teaching style delineates specific and differentiated behaviour, it is worthwhile to verify the possible development of the learner on various developmental channels (Mosston and Ashworth, 1994, p. 26).

### Objectives

The purpose of this study was to investigate the effect of postgraduate studies, teachers' years of teaching experience and the possible gender differences of Hungarian elementary school physical education teachers' perceptions on overall pupils' development using ten teaching styles. Figure 2 displays this study's speculations.

The main aim of this study was to provide with further insight regarding teachers' perceptions on Mosston's and Ashworth's teaching styles (2002) using a structured interview.

**Figure 2 Factors Influencing PE Teachers' Perceptions**



## Materials and method

Participants in this study were 42 Hungarian physical education teachers. From those 23 were males and 19 were females. The experience of these teachers ranged from 5 to 35 years. Throughout the period this study was conducted, teachers were teaching in 4<sup>th</sup>, 5<sup>th</sup> and 6<sup>th</sup> grades of elementary schools across Budapest. Thirteen (31%) of these teachers have had post-graduate studies and 29 (69%) had their bachelor degree.

Ten teaching styles were presented and described in detail to each physical education teacher. The format of the teaching styles description was reviewed by university experts (N=4) and school physical educators (N=11) for further clarity and the necessary revisions were made. Each session lasted for 30 to 40 minutes. For each teaching style a structured interview was conducted revealing its contribution to pupils' motor, emotional, social and cognitive development from the teachers' perspective. Teachers indicated the extent at which they believe a given style promotes pupils' development on a five-point scale. Overall, for the ten teaching styles, 40 answers were gathered from each teacher.

Every answer was treated as an independent categorical variable with five levels, given the range of the scale (0: at all; 1: a little; 2: enough; 3: much; 4: very much). Due to the nominal nature of this study data, chi-square tests of independence were performed to determine the significant trends among teachers with respect to gender, teaching experience and postgraduate studies.

Complete data were obtained from all 42 teachers, since the researcher, who was the first author of this study, was always present in the sessions. Initially the analysis was conducted to determine if a relationship existed between the teaching styles and teachers' postgraduate studies, years of teaching experience and gender.

The results of 3 x 2 chi-square analysis can only be interpreted generally (Harris, 1998). Therefore, the neutral category in each 3 x 2 analysis was omitted and 2 x 2 chi-square analysis tests of independence were conducted. This allowed for a more definite conclusion to be drawn about the differences with which teachers attributed each style concerning pupils' overall development.

## Results

Descriptive statistics are presented at Table 1, which includes modes and percentages for teachers' perceptions towards all ten teaching styles.

**Table 1 Descriptives**

Teaching Styles	Mode (%) Overall Pupil Development			
	Physical	Social	Emotional	Cognitive
<b>Command</b>	4(54.8)	1(47.6)	1(61.9)	1(52.4)
<b>Practice</b>	3(61.9)	1(54.8)	2(66.7)	2(50.0)
<b>Reciprocal</b>	2(71.4)	4(61.9)	3(64.3)	2(61.9)
<b>Self-check</b>	2(85.7)	1(66.7)	2(59.5)	3(57.1)
<b>Inclusion</b>	2(50.0)	2(59.5)	3(50.0)	2(45.2)
<b>Guided discovery</b>	1(73.8)	2(64.3)	2(59.5)	3(52.4)
<b>Convergent discovery</b>	1(88.1)	2(64.3)	3(50.0)	3(45.2)
<b>Divergent production</b>	1(81.0)	2(71.4)	3(71.4)	4(81.0)
<b>Learners' individual designed program</b>	1(88.1)	2(78.6)	3(64.3)	4(83.3)
Learner-initiated	1(85.7)	2(50.0)	4(64.3)	4(92.9)

Non-significant chi-square findings were found for the factors of gender and teachers' years of experience. Significant chi-square findings were revealed for the teachers' with postgraduate studies vs. the teachers without in all teaching styles but three cases: self-check, learner's designed program and learners' initiated styles.

The chi-square analyses comparing elementary teachers with vs. without postgraduate studies revealed significant differences for command, practice, reciprocal, inclusion, guided-discovery, convergent discovery and divergent production teaching styles.

Table 2 displays the chi-square analysis for teachers' beliefs with vs. without postgraduate studies on pupils' physical, social, emotional and cognitive development.

**Table 2 Chi-square analysis for teachers with vs. without postgraduate studies**

Teaching Styles		Physical		Social		Emotional		Cognitive	
		w	wn	w	wn	w	wn	w	wn
<b>Command</b>	Tot%	26.2	50.0	23.8	42.9	26.2	35.7	28.6	31.0
	Grp%	84.6	72.4	76.9	62.1	84.6	51.7	92.3	44.8
	$\chi^2$	<b>11.784,1,p&lt;.001</b>		<b>10.568,2,p&lt;.005</b>		<b>x</b>		<b>x</b>	
<b>Practice</b>	Tot%	14.3	42.9	23.8	48.3	31.0	35.7	19.0	31.0
	Grp%	46.2	62.1	76.9	33.3	100.0	51.7	61.0	44.8
	$\chi^2$	<b>6.828,2,p&lt;.05</b>		<b>10.386,2,p&lt;.01</b>		<b>x</b>		<b>18.179,2,p&lt;.001</b>	
<b>Reciprocal</b>	Tot%	14.3	54.8	26.2	26.2	26.2	38.1	28.6	33.3
	Grp%	46.2	79.3	84.6	37.9	84.6	55.2	92.3	48.3
	$\chi^2$	<b>x</b>		<b>11.786,2,p&lt;.01</b>		<b>x</b>		<b>x</b>	
<b>Inclusion</b>	Tot%	28.6	59.5	28.6	31.0	16.7	35.7	26.2	31.0
	Grp%	92.3	86.2	92.3	44.8	53.8	51.7	69.2	44.8
	$\chi^2$	<b>23.464,1,p&lt;.001</b>		<b>x</b>		<b>16.623,2,p&lt;.001</b>		<b>x</b>	
<b>Guided-discovery</b>	Tot%	26.2	40.5	31.0	33.3	19.0	38.1	21.4	31.0
	Grp%	84.6	58.6	100.0	48.3	61.5	55.2	69.2	44.8
	$\chi^2$	<b>10.910,2,p&lt;.01</b>		<b>x</b>		<b>10.338,2,p&lt;.01</b>		<b>x</b>	
<b>Convergent discovery</b>	Tot%	31.0	57.1	31.0	33.3	21.4	33.3	21.4	40.5
	Grp%	100.0	82.8	100.0	48.3	69.2	48.3	69.2	58.6
	$\chi^2$	<b>x</b>		<b>x</b>		<b>x</b>		<b>13.183,2,p&lt;.001</b>	
<b>Divergent production</b>	Tot%	16.7	50.0	16.7	38.1	23.8	47.6	28.6	52.4
	Grp%	53.8	72.4	53.8	55.2	76.9	69.0	92.3	75.9
	$\chi^2$	<b>x</b>		<b>13.011,2,p&lt;.001</b>		<b>x</b>		<b>x</b>	

Note. w denotes teachers with postgraduate studies, while wn denotes those without postgraduate studies; x denotes non-significant findings.

## Discussion and conclusions

The findings of this study indicated that those teachers having postgraduate studies tended to perceive differently the contribution of each teaching style to pupils' physical, social, emotional and cognitive development, compared to teachers without postgraduate studies.

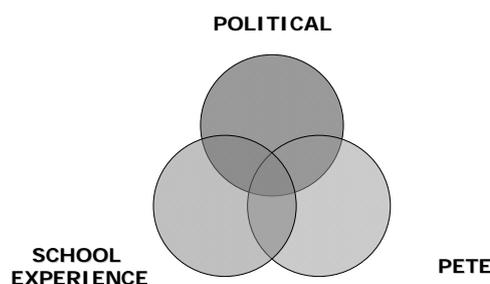
As the research literature increasingly demonstrates, well-educated teachers have a richer, more well-instantiated cognitive representations of subject matter, teaching styles and the nature of children (Housner et al, 1993). Teachers, as shown in Table 2, have different perceptions about what aspect of pupils' development each teaching style could possibly achieve with regard to pupils' development. Well-educated teachers tended to perceive that productive teaching styles are more appropriate for overall learners' development along with reproductive ones.

The major thrust of the data would support the notion that perceptions towards reproductive teaching styles appear to be strongly supported by both groups of teachers regardless to their education. Both groups denied that productive styles reinforce pupils' physical development. With regards to the other aspects of pupils' development, teachers' opinions showed great variations.

The fact that teachers perceived these dimensions differently is crucial to future study of what actually happens in the classroom (Lambdin and Steinhardt, 1991). Obvious questions arise; will teachers' perceptions match with what they employ during instruction?

As alluded to in the objective section of this study, we speculated that the reasons for the teachers' perceptions predominately investigated may have been the years of experience, the postgraduate studies and gender. Additional assumptions that could comprise possible reasons are presented in Figure 3; though for such substantial reasoning further research is warranted.

Figure 3 ADDITIONAL REASONS FOR PE TEACHERS' PERCEPTIONS



The political factor comprises the focus of the later NCC policy texts (1995), most notable the revised order for the new Hungarian National Core Curriculum. NCC is not a program with aims, targets, content, teaching methodology and evaluation, instead, it is a unified subscribing framework. Its main purpose is the development of physical condition. NCC is based on modern pedagogical thought of 'open' curricula that presuppose the active participation of PE teachers during instructional planning. Hamar (1998) stressed that within the NCC, PE is appointed as the 10<sup>th</sup> cultural domain. As a result, this newly contextual viewpoint asserts PE within the cultural significance of the country, "undertaking the roles of creating a

balance between healthy body and soul, educating healthy lifestyles, forming recreational and rehabilitative abilities” (Hamar, p. 70).

School experience including the influence of other colleagues might lead teachers’ styles of instruction, while PETE, i.e. Physical Education Teacher Education that some previous research (Salvara, 2001) and logical speculation suggest that it undoubtedly influences teachers’ beliefs and practices.

In conclusion, the main strength of this study was that it produced detailed data on Hungarian teachers’ beliefs about pupils’ development with 10 examined teaching styles. There were, however, a number of limitations which need to be acknowledged. It is important to emphasize that the data produced by this study simply tell us about teachers’ beliefs for pupils’ development rather than the employment of instructional styles. Future studies should examine teachers’ employment and the quality of instruction.

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