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Teaching Strategies of Secondary School Teachers according to their Thinking Style Profiles in District Sialkot

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Abstract

The study aimed to analyze the preferred teaching strategies used by the secondary school teachers having different thinking style profiles. The study was conducted in District Sialkot of Pakistan. Altogether 4895 secondary school teachers of district Sialkot constituted the population of the study.550 teachers of both genders were conveniently taken as the sample of the study. Self-develop observation record was used to collect data from 18 teachers for the teaching strategies: Brain Storming, Asking questions, Attaining Concept, Will to Work, Making things familiar and vice versa, Group discussion, Text reading, Direct Lecturing, Learning by Inquiring, Assessment Procedure, Learning through Activities, Teaching by using Models, Homework, using Real Objects, Rewarding were used by the teachers in the classroom at secondary level, conveniently taken from all the four Tehsils of District Sialkot. Frequency distribution was used to analyze the data. The results showed that the Attaining Concept, Brain Storming, Group Discussion, Learning by Inquiring, Use of Real Objects, Learning through Activities and Rewarding, were teaching strategies preferred by the teachers having creative inclination, Direct Lecturing, homework, Assessment Procedure, and Text Reading were teaching strategies preferred by the teachers having less creative inclination and degree of freedom.

Keywords Teaching Strategies, Thinking Style Profiles

Introduction

The expansion of understanding of human psychology has given us fresh perspectives on how people think and what they like based on their interests and aptitudes (Mushtaq, 2013). If Pakistan wants to stand out in the community of nations, where there is a race to improve in all spheres of life, it must create an educational system where teachers can play a key role. This is only possible when teacher professional development is updated on a regular basis in accordance with the demands of the modern world (Rizwan, & Masrur, 2018).

Thinking style (TS) influences how people behave. As the primary source of knowledge and motivation for students, teachers play a crucial role in the teaching-learning process in the educational setting. Through (IPs), teachers communicate and share their knowledge.

Quality learning outcomes are paved by ongoing professional development of pre-service and in-service teachers. In-service teacher training programmes are necessary on a regular basis to produce quality teachers at the worldwide level (Moss, & Brookhart, 2010). All teachers are subject to the same planning and execution of a training programme, which may not hold their interest due to a lack of motivation. Resources are wasted in this manner, and necessary goals are not met. According to the abilities, passions, and preferences of teachers who possess specific (TSPs), the Pakistani government must take such actions, design such strategies, and arrange such in-service teacher training programmes.

A thorough analysis of the literature revealed that the (IPs) of teachers are connected to their modes of thought, that knowledge of their (TSs) aids in the determination of sets of their preferred (IPs), that their (TSPs) are reflected in their preferences for using particular sets of instructions while teaching in the classroom, and that the teachers refine these sets of (IPs) as they reflect their interests (Khattak, Abbasi, & Ahmad, 2011).

Thirteen (TSs) are included in the (TMSG), each with five dimensions: three functions, namely the legislative, executive, and judicial; four forms, namely the monarchic, hierarchic, oligarchic, and anarchic; two levels, namely the local and global; two scopes, namely the internal and external; and two leanings, namely the liberal and conservative. Using a (TS) in teaching inventory, teachers were categorized into thirteen (TSs) in the field of education using the (TMSG) (Chang, 2014).

Pakistan regularly hosts pre-service and in-service teacher training programmes for the advancement of the teaching corps (Murphy, & Janeke, 2009). In general, all instructors receive the same training, and these training programmes are created with the understanding that all teachers require the same kind of training regardless of their preferences. The abilities and preferences of instructors are not taken into consideration while planning training programmes (Joshi, & Kalani, 2008).

A careful analysis of the literature indicated that educators impart knowledge in accordance with their beliefs. Understanding (TSs) offers insight into the (IPs) that teachers use the most. Teachers' (TSPs) are a reflection of their indulgence in employing particular sets of (IPs) based on their interests. The knowledge of specific (TSPs) and specific sets of (IPs) utilised by instructors of certain (TSPs) in the classroom will be made available if an association between (IPs) and the (TSs) of teachers is formed (Mills.& Gay.2019*)*.. As a result of this understanding, teacher training programmes may be created in accordance with the (TSPs) of instructors, potentially improving their individual sets of (IPs).

This study aimed to identify a relationship between secondary school teachers preferred instructional strategies (IPs) and their daily teaching practices (TSPs).The goal of this study is to better understand (TSPs) and the preferences of in-service teachers for certain sets of instructional practices they use on a regular basis in the classroom. It may also be helpful to explain the instructors on why they use specific sets of (IPs) and how these preferences arise from their specific (TSPs) if they are aware of the concept of numerous (TSPs) of teachers and their preferences for particular sets of (IPs). The instructors may find it useful in deciding on various training programmes components that are in line with their preferred teaching style and set of instructional practices (IPs) (Pasha, Smith, & Jeeva, 2019).

Review of Related Literature

The current state of affairs and the results of social change are key considerations for teachers' need-based ongoing professional development in the educational sphere of influence. Since Pakistan's founding, the importance of teachers' professional development has been recognized in all of the country's educational policies. However, it is questionable whether all instructors can be prepared through a single teacher preparation programme. Through (IPs), teachers demonstrate their interest.

The tendencies for a certain set of (IPs) reveal the (TSPs) of the teachers. In their experiential investigations, Yang & Lin (2004) and Song (2017) found a correlation between teachers' teaching strategies (TSs), which include critical thinking, discussion, and creativity. The process of thinking is intricate. Teachers organize their thoughts, apply critical thinking, and utilize logical reasoning in this setting based on their preferences, inclinations, and interests. It reveals a person's concept of (TS). According to Sternberg (1997), a (TS) is the preferred way of thinking rather than specific skills. A (TS) is versatile and distinctive. TSPs are created by combining two or more (TSs). The value of individual-difference characterization is argued by (TSPs).

Teachers' thinking processes, learning styles, problem-solving techniques, and interpersonal relationships are all demonstrated by their teaching strategies. Teachers can better grasp their favorite (IPs) by using their knowledge of (TSPs). They have a higher chance of success by employing these practices because they cater to teachers' interests, which are the (TSPs) that determine their preferences for putting particular sets of instructions into practice (Osamwonyi, 2011). If a correlation between instructors' (TSPs) and the (IPs) they choose to employ in their instruction is found, knowledge about a given (TSP) and a particular collection of (IPs) employed by them in the

classroom can be obtained. Teachers may view a certain scenario differently as a result of (TSPs) because they frequently function unconsciously and have only partially developed through socialization (Zhang, 2000, 2003, 2010). Three-fold model, created by Zhang & Sternberg in 2005, classified (TSs) profile as Type-I, II, and III.

The professional development of teachers is one of the most significant issues Pakistan faces in the area of education. Individuals with varied skills and interests make up teachers (TSs). Although it is assumed that a standard teacher training will be useful for the professional development of teachers, Chang (2014) reports that the training is unproductive and wastes a lot of time and resources.

The B. Ed. programme alone is insufficient for pre-service and in-service teacher training, according to Pasha, Smith, and Jeeva (2019). As these programmes are created similarly for everyone and teachers' preferences (IPs) are not taken into consideration, even occasionally M. Ed. and M.A. Education lack professional growth of the teachers. The outcomes of these demanding activities fall short of expectations since teachers don't find any enjoyment in them and instead feel stressed. (Mushtaq, 2013). This method has encouraged teachers to strengthen and concentrate on their personal interests (IPs) while instructing in the classroom.

Najam & Bari (2017) contend that teachers should be well-versed and prepared in accordance with their preferences and interests.

The results of training and the professional growth of the instructors are impacted by scientific breakthroughs on both sides. The acquisition and maintenance of knowledge has also grown as a result of new technologies and methods (Stevta, 2017). With the passage of time, teaching becomes a more difficult process. The way we teach in the classroom has completely altered because to modern technology and an increase in creative ideas (Hussain, 2018). The relevance of teaching has grown as a result of contemporary challenges and the necessity to stay current with needs and developments. A teacher's interactions with students in the classroom reveal his or her perspectives

Theory of Mental Self Government and Thinking Styles

Sternberg (1997) proposed the (TMSG).This theory incorporates every preceding model. According to the (TMSG), there were thirteen thought patterns with five dimensions, including two leanings (Liberal and Conservative), two levels (local and global), two scopes (internal and external), and four forms (monarchic, hierarchic, oligarchic, and anarchic). Using a (TS) in teaching inventory, teachers were categorized into thirteen (TSs) in the field of education using the (TMSG).

Thinking Style Profiles

Thirteen (TSs) were divided by Zhang & Sternberg (2005) into three (TSP) types: I, II, and III. Along with instructors' professional work experience outside of the classroom and in society, gender, age, and other characteristics, the (TSPs) are crucial in shaping the instructional content. TSPs are related to teachers' assessments of their students' quality, their ability to use group projects to gauge their students' development, and how much they adapt new course materials (Sternberg & Zhang, 2002).

Combining earlier theories, Sternberg (1997) created TMSG in an educational setting. For instructors, Sternberg and Zhang (2002, 2005) found 13 distinct thinking tendencies. The Mental Self-Government Theory has five dimensions, which are broken down into three functions, four forms, two levels, two scopes, two leanings, and three types (TSPs). The following characteristics apply to instructors, according to their (TSPs).

Conceptual Framework

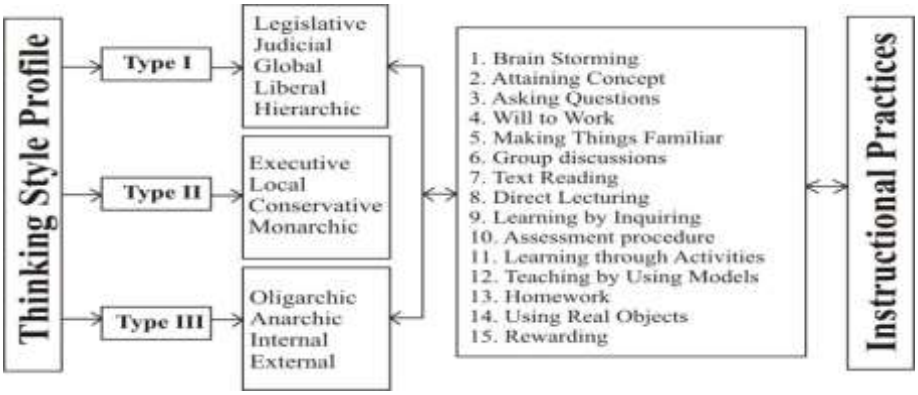


Figure: 2.3 Conceptual Framework

Research Methodology

The research had a quantitative and descriptive approach. Data were gathered from the research participants over the course of a single, relatively brief period of time using a cross-sectional survey research technique. This technique was used to determine whether there might be a relationship between the variables being considered. It enabled the researcher to examine elements like location and gender.

Research Questions

1. How many teachers belong to each of the three types of TSPs, Type-I, II, and III?
2. According to the nature of their (TSPs), what sets of (IPs) do the teachers use?

The Population of the Study

The population of the study comprised of 4986 public sector secondary school teachers belonging to different strata of district Sialkot. The details of Tehsil wise population are as follow:

Table 3.1: *Strata wise Tehsils of District Sialkot*

	Male Teachers		Female Teachers		Total
Tehsil	Urban	Rural	Urban	Rural	
Sialkot	353(7%)	658(13%)	218(4%)	477(10%)	1706 (34%)
Daska	167(4%)	491(10%)	163(3%)	505(10%)	1326(27%)
Sambrial	57 (1%)	281(6%)	55(1%)	304(6%)	697(14%)
Pasrur	93 (2%)	503(10%)	107(2%)	554(11%)	1257(25 %)
Total	670(14%)	1933(39%)	543(10%)	1840(37%)	4986(100%)

Source: School Education Department, Government of Punjab

Thinking processes are not based on location. Therefore, it makes no difference where in the world the sample is collected. Results can be generalized because the educational environment and recruitment policies are the same.

Sample of the Study

The study's sample and sampling methodology were as follows:

First, 550 secondary school teachers were chosen to gather data for (TSPs) in accordance with the proportionate sampling specified in the population table (Mills & Gay, 2019, p.153). To obtain better clarity, an extended sample was employed. Out of 550 teachers, 292 were male (urban 77, rural 215), and 258 were female (urban 55, rural 203). (TSs) are not location-specific. As a result, the sample's location is not important.

Table 3.2: *Proportionate stratified sampling of the study*

Tehsil	Male Teachers		Female Teachers		
	Urban	Rural	Urban	Rural	Total
Sialkot	39	72	22	5	187
Daska	22	55	16	55	148
Sambrial	5	33	6	33	77
Pasrur	11	55	11	60	138
Total	77	215	55	203	550

After the questionnaire was analyzed and the three (TSPs) were identified, 6 teachers from a group of 416 secondary school teachers were randomly chosen to participate in observations to gather data for (IPs) of teachers in the classroom. A total of 18 secondary school teachers (6x3) were observed over the course of four days (18x4), yielding a total of 72 observations.

Table 3.3: *Teachers from each (TSPs) for classroom observations*

(TS) profile	Participants				Total	observation	Total No. of observations
	Male		Female				
	Urban	Rural	Urban	Rural			
Type I*	1	2	1	2	6	6×4	24
Type II**	1	2	1	2	6	6×4	24
Type III***	1	2	1	2	6	6×4	24
Grand Total					18		72

* "Legislative, Judicial, Global, Hierarchic, and Liberal"

** "Executive, Local, Monarchic, and Conservative"

*** "Oligarchic, Anarchic, Internal, and External"

In all, 18 secondary school teachers were chosen (depending on the participants' willingness to participate) for observations of (IPs) in the classroom. Table 3.3 lists those six teachers, three male (1 urban, 2 rural) and three female (1 urban, 2 rural) from each (TSPs) Type I, II, & III. Each teacher underwent four days of (40-minute) daily observation while instructing the same subject in order to verify consistency in the usage of (IPs). 18 teachers were observed four times each for a total of 72 observations.

Instruments of the Study

1) The researcher utilized the (TS) in teaching inventory (TSI-R2) created by Sternberg, Wagner, and Zhang (2007) to categorize the teachers according to their (TSPs), i.e., Type-I, II, and III, following a thorough examination of the pertinent literature. A 7-point Likert scale was used in the (TSI-R2) to classify teachers into Type-I, II, and III (TSPs) on the basis of thirteen (TSs).
2) Data from teachers of various (TSPs) were gathered using a self-developed open observational record connected to (IPs).

Validity and Reliability

Expert opinion was used to ensure the open observation's construct validity and content validity (Frankel, Wallen, & Hyun, 2011). Using Krippendorff's alpha, the inter-rater reliability of the open observation was calculated.

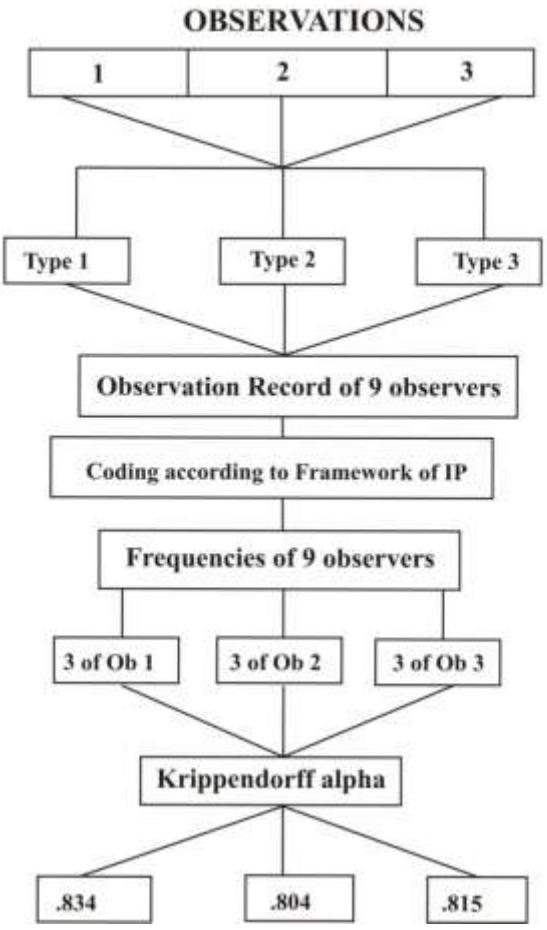
Pilot Testing

As the researcher was using (TS) inventory in teaching (TSI-R2) (Sternberg, Wagner, & Zhang, 2007) to classify teachers' (TSPs), its reliability was already ensured, and as the inventory was culture and context-independent, therefore, the known reliability was considered for the study.

Pilot Testing of Observation Records

The researcher developed an open observation tool for the study and to check its reliability one teacher from each (TSPs) i.e., Type- I, II and III was selected conveniently. The reliability of the open observation was calculated through inter-rater reliability by using Krippendorff's alpha

TOOL VALIDATION OF OBSERVATION



Tool Validation Process of Observation Records

Data Collection

The secondary school teachers were given the TSI-R2 standardized instrument to categorize the teachers into their (TSPs), i.e. Type- I, II, and III. The sample received 550 copies of TSI-R2 in total. To get the most responses, all measures were done, including sending a follow-up reminder. 416 of the 550 participants returned completed questionnaire copies. 76% of respondents responded. When n>300. coding framework (Given 3.5), according to Field (2016), the question of the veracity of the data in the self-reporting tool is answered. For Type I, II, and III (TSPs) observed (IPs), the frequency was estimated.

The researcher and trained helpers conducted observations in the next phase to gather data. Six instructors from each (TS) profile comprised the 18 teachers whose data were gathered. Each secondary school teacher underwent four days of continuous observation. According to the coding framework, each observation was axially coded in accordance with the statements connected to each (IP). For Type I, II, and III (TSPs) observed (IPs), the frequency was estimated.

Analysis and Interpretation of Data

To respond to the initial research question, "How many teachers belong to each of the three types of TSPs, Type I, II, and III? Frequency distribution was used as the basis for the analysis.

The second study question, "What sets of (IPs) are applied by the teachers according to the type of their (TSPs)?" must be addressed. Frequency distribution was used as the basis for the analysis.

Question No. 1

"What sets of (IPs) are applied by the teachers according to the types of their (TSPs)? The data were analyzed through frequency distribution.

Table 4.5.1: *Patterns of (IPs) within classified* (TSPs) *Type I*

Sr #		Case 1	Case 2	Case3	Case4	Case 5	Case6	Total
1	Brain Storming	0	4	0	0	0	1	5
2	Attaining Concept	12	12	8	24	16	4	76
3	Asking questions	3	8	0	1	1	20	33
4	Will to Work	2	3	0	0	4	0	9
5	Making things familiar and vice versa	12	3	4	8	4	4	35
6	Group discussion:	16	4	16	8	12	4	60
7	Text reading	3	3	8	0	4	0	18
8	Direct Lecturing	4	8	0	1	0	4	17
9	Learning by Inquiring	0	3	3	8	1	0	15
10	Assessment Procedure	4	4	0	4	8	4	24
11	Learning through Activities	8	0	0	8	4		24
12	Teaching by using Models	12	4	16	24	16	16	76
13	Homework	3	12	4	4	4	16	43
14	Using Real Objects	0	0	4	0	8	4	16
15	Rewarding	4	4	8	8	4	8	36

According to Table 4.5.1, six teachers (6 cases) with TSPs of type I were observed while instructing students in the same subject for 40 minutes each day over the course of four consecutive days. These incidents (IPs) were noticed throughout the course of six observations in four. The table also shows that the teachers primarily used Attaining Concept and Teaching by Using Models (IPs) (76 times), Group Discussion (43 times), Making Things Familiar and Vice Versa (35 times), Formative Assessment and Learning through Activities (24 times), Text Reading (18 times), and Direct Lecturing (17 times), among other strategies. Using Real objects (16), learning through inquiry (15), work ethic (9), and brainstorming (5). It shows a shift in the teachers' thinking patterns from high to low levels of freedom. The teacher had a greater degree of freedom in (IP), which was both higher and more complex. The teachers employed those (IPs) who demonstrated a propensity for coming up with new rules and regulations, developed fresh ways to enjoy exercising control, and were adaptable in any setting.

Table 4.5.2: *Patterns of (IPs) within classified* (TSPs) *Type II*

Sr #		Case 1	Case 2	Case3	Case4	Case 5	Case6	Total
1	Brain Storming	8	0	4	0	0	4	16
2	Attaining Concept	8	12	8	8	12	8	56
3	Asking questions	1	3	1	0	8	4	17

4	Will to Work	8	2	4	4	0	0	18
5	Making things familiar and vice versa	1	2	2	8	1	1	14
6	Group discussion:	2	12	2	0	4	0	20
7	Text reading	16	1	18	24	16	20	95
8	Direct Lecturing	12	8	12	20	24	16	92
9	Learning by Inquiring	4	8	4	1	0	1	18
10	Assessment Procedure	16	12	0	12	4	12	56
11	Learning through Activities	2	8	4	4	4	1	23
12	Teaching by using Models	2	4	2	0	0	4	29
13	Homework	8	10	4	4	3	1	29
14	Using Real Objects	1	1	0	0	0	0	2
15	Rewarding	4	4	12	2	4	12	38

Table shows that when teaching the same subject for (40 minutes) every day in the classroom for four consecutive days, six teachers (6 cases) of (TSPs) type II were observed. These incidents (IPs) were noticed throughout the course of six observations in four. In addition, the table shows that the teachers employed text reading (95 times), direct instruction (92 times), attaining concept and assessment procedure (56 times), rewarding (38 times), teaching by using models and homework & practise (29 times), learning through activities (23 times), group discussions (20 times), will to work and learning by inquiring (18 times) and asking questions (17 times), as well as relating unfamiliar concepts to familiar ones (14 times), brain storming (16 times), and using just real objects (4 times). It shows a shift in the teachers' thinking from thinking with little to no flexibility to thinking with a lot of freedom. Less freedom (IP) would be used in the classroom the less freedom (IP) the instructor possessed. The use of (IP) demonstrated the teachers' propensity to employ (IPs) that demand that they adhere carefully to the rules and directions supplied. It demonstrates the overwhelming preference of teachers for Executive and Conservative (TSs).

Table 4.5.3: *The Patterns of (IP) within classified* (TSPs) *Type III*

Sr #		Case 1	Case 2	Case3	Case4	Case 5	Case6	Total
1	Brain Storming	4	4	8	8	4	4	32
2	Attaining Concept	8	4	4	0	8	4	28
3	Asking questions	12	4	8	1	3	4	32
4	Will to Work	8	8	8	1	0	1	26
5	Making things familiar and vice versa	2	1	1	0	8	0	12
6	Group discussion	8	4	4	20	16	12	64
7	Text reading	12	12	12	12	8	8	56
8	Direct Lecturing	3	4	4	0	1	0	12
9	Learning by Inquiring	8	1	2	1	0	0	12
10	Assessment Procedure	4	16	16	4	4	4	48
11	Learning through Activities	1	1	0	0	4	4	10
12	Teaching by using Models	4	4	4	12	12	15	51
13	Homework	3	4	3	4	8	4	26
14	Using Real Objects	0	0	0	4	8	0	12
15	Rewarding	8	16	16	4	0	11	55

Additionally, Table shows that when teaching the same subject for (40 minutes) every day in the classroom, six teachers (6 cases) of (TSPs) type III were observed for four straight days. These incidents (IPs) were noticed throughout the course of six observations in four. In addition, the table shows that the teachers employed group discussions (64 times), text reading (56 times), rewarding (55 times), teaching by using models (51 times), assessment procedures (48 times), brain storming and questioning (32 times), attaining concepts (26 times), will to work and homework practice (26 times), direct lecturing, making things familiar and vice versa, and assessment procedures (48 times), Learning through Activities Only (10 times), Learning by Inquiry and the Use of Real Objects (12 times). It shows that teachers use (IPs) in a variety of ways and have distinct (TS) preferences. It demonstrates that teachers of (TSPs) type III possessed the traits of both (TSPs) type I and II teachers. The teachers of (TSPs) type III alternated or used both a high and low degree of freedom. It demonstrates the preference of teachers for both type I and type II (TSPs).

Table 4.5.4: *Sets of dominating (IPs) according to* (TSPs)

Sr. No	(TSPs)	(IPs)	Frequency
	Type I*		
1		Attaining Concept	76
2		Teaching by using Models	76
3		Group discussion	60
4		Homework	43
5		Rewarding	36
	Type II**		
1		Text reading	95
2		Direct Lecturing	92
3		Formative Assessment	56
4		Attaining Concept	56
5		Rewarding	38
	Type III***		
1		Group discussion	64
2		Text reading	56
3		Rewarding	55
4		Teaching by using Models	51
5		Formative Assessment	48

* "Legislative, Judicial, Global, Hierarchic, and Liberal"
** "Executive, Local, Monarchic, and Conservative"
*** "Oligarchic, Anarchic, Internal, and External"

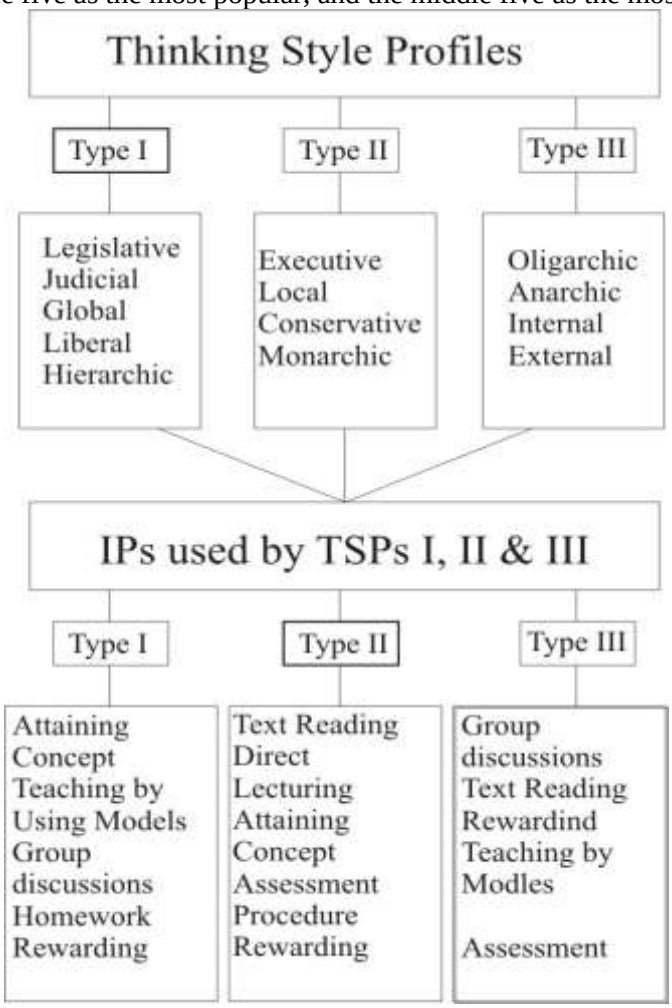
The dominant sets of (IPs) for (TSPs) Type-I, II, and III were shown in the table. The first five dominant (IP)s with high frequencies are the only ones displayed. Attaining Concept and Teaching by Using Models (76 times each), Group Discussion (60 times), Homework & Practise (43 times), and Rewarding (36 times) were the top five (IPs) that teachers of (TSPs) type I most frequently selected. Text reading (95 times), Direct Lecturing (92 times), Attaining Concept (56 times), Formative Assessment (56 times), and Rewarding (38 times) are the five (IPs) that teachers of (TSPs) type II most frequently choose. Additionally, group discussions (64 times), text reading (56 times), reinforcement and recognition (55 times), teaching by utilising models (51 times), and formative assessment (48 times) are the top five (IPs) that instructors of (TSPs) type III teachers most frequently choose.

Table 4.5.5 *Analyses of (IPs) according to (TSPs) Type- I, II and III.*

Profile Type	Most Preferred Common IP (Top 5)	Least Preferred Common IP (Lowest 5)	Average Common IP (Average 5)	Salient Most Preferred IP	Salient Least Preferred IP	Salient average Preferred IP
I & II	Attaining Concept	Brain Storming Will to Work	Hands-On-Learning			
I & III	Group discussion, Teaching by using Models	Direct Lecturing	Homework			
II & III	Text reading, Formative assessment	Making things familiar and vice versa				
I, II & III	Rewarding	Direct Lecturing Learning by Inquiring Using Real Objects				
I				Homework		Making things familiar and vice versa,

			Text reading, Formative assessment
II	Direct Lecturing	Asking questions	Group discussion, Teaching by using Models
III		Hands-on-Learning	Brain Storming, Attaining Concept, Will to Work

Table demonstrates the division of the (IPs) into three groups. Based on the frequency bases for each category. The top five were regarded as the most popular, the bottom five as the least popular, and the middle five as the most popular, and the middle five as the most popular.



Findings

First Research Question

1. 148 of the 416 instructors were categorised as (TSPs) type I. Legislative, Judicial, Global, Liberal, and Hierarchic (TSs) made up the (TSPs).
   i. The majority of the instructors (54) who had judicial (TSs) predominated the group, demonstrating that most teachers were prone to using words to critically analyse classroom assignments.
   ii. Thirty teachers used Legislative (TSs), which suggests that they like exercising authority and tend to make their own rules and innovative tactics.

iii. 29 teachers who employ hierarchical (TSs) prefer to concentrate on a list of priorities based on the importance of the assignment.
iv. 18 teachers used a Liberal (TS) response, indicating a predilection for handling novel concepts.
v. Teachers utilised a Global (TS) in verse 17. It demonstrates how people that fit this profile prioritise tasks based on their value, develop their own rules and regulations, come up with novel tactics, and love exercising authority.

2. 128 of the 416 teachers were categorised as (TSPs) type II. Monarchic, Executive, Conservative, and Local (TSs) made up the type II of (TSPs).
   i. The majority of the instructors, 42, used Executive (TS), indicating that they preferred to follow precise instructions.
   ii. 40 instructors utilised Conservatives to show their choice for resolving the issue in accordance with the prescribed rules.
   iii. 33 teachers used the local designation (TS) to indicate their preference for tasks that allow them to focus on certain facets of a problem.
   iv. Only 13 teachers employed a Monarchic, (TS), indicating that they preferred to do one assignment at a time.
3. In addition, 140 instructors out of 416 were designated as (TSPs) type III. Anarchic, oligarchic, external, and internal (TSs) made up the type III (TSPs).
   i. 58 teachers utilised the External (TS) to demonstrate their preference for teamwork and social interaction.
   ii. A study of 36 teachers using Internal (TSs) found that they frequently work alone. Because both (TSPs) type I and (TSPs) type II are characteristics of (TSPs) type III, the difference in how different types of preferences are used within the same group may result from that.
   iii. 28 teachers used an Oligarchic (TS) shoed teachers' propensity to work on multiple tasks concurrently without assigning them a priority.
   iv. Only 18 teachers favoured anarchy (TS), which showed that they were quick to adapt and become comfortable with the scenario.

It revealed that the majority of teachers liked to work independently as well as in groups, depending on the task at hand and the situation, work on multiple tasks simultaneously without assigning any tasks a priority, and became quite comfortable in a variety of settings.

Second Research Question

1. *Patterns of (IPs) within classified (TSPs) Type I*

Teachers at the (SSL) employ a variety of teaching techniques in the classroom. Judicial, Legislative, Global, Liberal, and Hierarchic are the components of (TSPs) type I. Teachers of (TSPs) type I preferred a particular set of pedagogical techniques. Following are the preferable (IPs) within type I classified (TSPs):

The findings indicated that Attaining Concept, teaching through models, group discussion, homework & practise, Rewarding were the (IPs) most frequently employed by the instructors of (TSPs) type I. Activating Prior, Will to Work, Inquiry Based Learning, Using Real Objects, and Direct Lecturing were the IPs that the teacher of (TSPs) type I used the least frequently. Hands-on-Learning and Homework & Practise were the IPs that the teacher of (TSPs) type I used most frequently. The use of these (IPs) revealed tendencies in instructors' thinking that went from being creative, complicated, and having more freedom to having less freedom.

2. *Patterns of (IPs) within classified (TSPs) Type II*

Teachers at the (SSL) employ a variety of instructional methodologies in the classrooms. Local, Executive, Conservative, and Monarchic make up (TSPs) Type II. A certain set of teaching strategies was favoured by the instructors of (TSPs) type II. Following are the preferable (IPs) within type II classed (TSPs):

It shows that the (TSPs) type II teachers mostly favoured (IPs) like text reading, direct lecturing, attaining concept, formative assessment, and reinforcement and recognition. Group discussion, hands-on learning, teaching by using models, homework, and practise were the (IPs) that teachers of (TSPs) type II used on average. Using real objects, willingness to work, inquiry-based learning, asking questions, making things familiar and vice versa, and brain storming were the (IPs)

that teachers of (TSPs) type II least preferred. a group of (IPs) that are straightforward, have little latitude, and must adhere to rules.

The teacher had a basic and lower level of freedom, which allowed him to use (IP) to a limited extent. The use of (IP) demonstrated the teachers' preference for (IPs) that required rigorous adherence to the rules and directions. It demonstrates the preference of teachers for a particular group of (IPs) with (TSPs) type II.

3. *Patterns of (IPs) within classified (TSPs) Type III*

Teachers at the (SSL) employ a variety of instructional methodologies in the classrooms. Anarchic, Oligarchic, and External, Internal make up (TSPs) type III. Teachers of (TSPs) type III valued a certain set of pedagogical techniques. Following are the preferable (IPs) within type III of classified (TSPs):

It shows that group discussion, text reading, reinforcement and recognition, teaching by employing models, and formative assessment were the (IPs) most frequently utilised by the teacher of (TSPs) type III. Additionally, Making things familiar and vice versa, Direct Lecturing, Inquiry-based Learning, Hands-on Learning, and Using Real Objects were the (IPs) that teachers of (TSPs) type III used the least. The (IPs) that teachers of (TSPs) type III teachers most frequently utilised were Brainstorming, Attaining Concept, Asking Questions, Will to Work, and Homework & Practise.

Discussion

The discussion of the study's primary findings in the context of its research questions elaborates on the strata-wise variations in secondary school teachers' TSPs, patterns of (IPs) within each Type-I, Type-II, and Type-III (TSP), and (IPs) of secondary school teachers.

Legislative, Executive, Judicial, Global, Local, Liberal, Conservative, Hierarchical, Monarchic, Oligarchic, Anarchic, Internal, and External (TS) types of thinking styles were identified in the study and sub-grouped into three (TSPs), i.e., Type- I, II, and III, supporting the study of (Zhang & Sternberg, 2005).

In the type I (TSPs), the following desired (IPs) were also included: Attaining Concept, Teaching by Using Models, Group Discussion, Homework & Practise, and Rewarding. These (TSs) included legislative, judicial, global, liberal, and hierarchical (TSs). A career in the arts, an abstract and global way of thinking, an intuitive and perceptive personality type, a reflective and conceptual tendency, a concrete mind style, innovative decision-making, and field-independent, perceptual, and divergent thinking were all identified as characteristics of teachers of (TSPs) type I.

Local, Executive, Conservative, and Monarchic (TSs) made up the (TSPs) of Type II, and the following (IPs) were preferred: Text reading, Direct Lecturing, Attaining Concept, Formative Assessment, and Rewarding. Surface-learning, analytic thinking, conventional professional mentality, impetuous conceptual propensity, concrete and rigorous mind style are all characteristics of teachers with TSPs type II.

The pattern indicated that the teachers of type III (TSPs) preferred (IPs) that, depending on the situation and the task, required both simple, creative, complex, and critical thinking at the same time to be used in the classroom as they used and changed their (IPs) according to the context of the (TSPs) given task. Zhang's research in 2003, which found that instructors of (TSPs) type III favoured teaching strategies that required both simple, creative, complex, and critical thinking, supported the study's findings (Rizwan,& Masrur,2018).

The study also showed that when teachers employ the lecture mode of education, the Executive and Hierarchic (TSs) are used in the classroom. Asking questions as a (IP) allows for a great degree of independence, which is better for the working styles of the judicial and legislative branches. Cooperative or group learning may be used and encouraged by a teacher with an External (TS. Group talks and conversations can be used by teachers with External, Judicial, Legislative, Global, and Anarchic (TSs) to encourage a high level of freedom and complexity of thought. (Budijanto, 2013).

The study also identified (IP) trends within Type-I, Type-II, and Type-III TSPs. Attaining Concept and Teaching by Using Models, Group Discussion, Homework, and Rewarding were the (IPs) that instructors of (TSPs) type I most frequently used. Additionally, Text reading, Direct Lecturing, Attaining Concept, Formative Assessment, and Rewarding were the most often employed set of (IPs) by the teachers of (TSPs) type II. Additionally, the group discussion, text reading,

reinforcement and recognition, teaching by employing models, and formative assessment were the most popular (IPs) employed by the instructors of (TSPs) type III.

These findings showed the preferences and areas of expertise of the (TSPs) type I, II, and III teachers for particular sets of (IPs) in the classrooms at (SSL). According to the study by (Zhang, 2011), teachers of various (TSs) used certain (IPs).

The study found a substantial correlation between the teachers' Type-I, Type-II, and Type-III TSPs and their IPs at the SSL. This conclusion was corroborated by research investigations done by Yang & Lin in 2004 and Song in 2017, which showed a correlation between the teachers' use of (TSs) and (IPs).

Conclusions

In order to answer the second question regarding the sets of (IPs) within classified (TSPs) Type-I, II, and III, it is determined that Attaining Concept, Teaching by Using Models, Group Discussion, Homework Practise, and Rewarding were the preferred set of (IPs) within classified (TSPs) type I (Legislative, Judicial, Hierarchic, Global, and Liberal).

Further, among the categorised (TSPs) type II (Executive, Conservative, Local, and Monarchic), Text Reading, Direct Lecturing, Formative Assessment, Attaining Concept, and Rewarding were the preferred set of (IPs), i.e., the teachers of (TSPs) type II have higher interest and skill to utilise Text Reading, Direct Lecturing, Formative Assessment, Attainment of Concept, Rewarding as (IPs) in the (SSL) classrooms

Additionally, instructors of (TSPs) type III have a higher inclination and skill for using Formative Assessment as (IPs) in the classrooms at (SSL) and Group Discussion, Text Reading, Rewarding, Teaching by Using Models, and Formative Assessment as (IPs). This is due to the classification of type III TSPs (Anarchic, Oligarchic, Internal, and External). TSP types I and II teachers mostly concentrated on conceptual attainment. The use of brainstorming was infrequent. Additionally, they occasionally incorporated hands-on learning into their instruction.

Further analysis revealed that instructors in (TSPs) types I and III frequently favoured group discussions and teaching through models, and that direct lecturing was only occasionally used. Additionally, it was found that teachers with TSPs types II and III preferred text reading and formative assessment over making unfamiliar concepts familiar, although they occasionally incorporated both homework and practice into their daily instruction.

Regardless of their TSPs, Reinforcement & Learning was the most popular (IP) among teachers. While inquiry-based learning was the least popular (IPs) among the I, II, and III TSPs teachers. Homework and practice was the salient most preferred instructional practice (IP) used by the teachers of (TSPs) type I, whereas Direct Lecturing was the salient least preferred (IP) used by the teachers of (TSPs) type II, and Asking questions was the salient average preferred (IP) of (TSPs) type III.

Recommendations For Further Research

Following are the further recommendations of the study:

1. Since student achievement was not considered in the current study, further research may be done to determine whether teacher TSs characteristics and student achievement at the secondary level are related.
2. Teaching experience was not taken into account in the current study as a possible source of variation in (IPs). To determine the relationship between teachers' TSPs, or Type I, Type II, and Type III, and their prior experience utilizing IPs, research may be done.
3. A study might be done to determine whether Type I, Type II, and Type III teachers' (TSPs) and their degrees are related.

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