**THINKING STYLES AMONG THE ARAB-MINORITY TEACHERS IN**

**THE ARAB EDUCATION SYSTEM IN ISRAEL**

Jamal Abu-Hussain

Al-Qasemi Academic - Israel

[*Jamal\_ah@qsm.ac.il*](mailto:Jamal_ah@qsm.ac.il)

This study examined the most common thinking styles of Arab teachers, given their status as members of a minority, in the Arab education system in Israel. Examination of thinking styles is of significant importance in predicting a person's behavior in different situations, and teachers' thinking styles predict some of their professional behavior when at work in school. The teaching profession demands certain personal characteristics, skills, and a wide professional knowledge base together with appropriate thinking and perceptions and thinking styles are considered to be an important aspect of the teacher's work.

A central aspect of a person's personality is their thinking style and another, somewhat parallel aspect, is their characteristics. Each of the two have their unique contribution and structure that defines them. A person's thinking style is influenced by culture and social characteristics and different cultures and societies have different thinking styles.

As members of a national minority in Israel, the thinking styles of Arab teachers have not been previously studied, despite the fact that Arab society is undergoing rapid change in the social, economic, political, cultural, and familial spheres and despite the fact that thinking styles of teachers have an important impact on their day-to-day work in school. Thus, this study is important in that it examines the most common thinking styles among Arab teachers, given their status as members of a minority, in the Arab education system in Israel.

The study was conducted among 185 Arab teachers who answered a questionnaire about thinking styles. Their responses were analyzed using the SPSS statistic program.

The principle findings showed that the most common thinking styles were Type 2 (executive, local, conservative, and oligarchic) and Type 3 (monarchic, anarchic, internal, and external.) The least common was Type 1 (legislative, judicial, global, liberal, and hierarchic.)

**Key words:** thinking styles, Arab teachers, Arab education system in Israel

**Introduction**

The main goal of an education system is to create a learning and education environment which enables maximal learning and development for students in the cognitive, social, emotional, and movement spheres. The teaching profession demands certain personal abilities and characteristics, a wide professional base, responsibility and appropriate thinking and perceptions. Teachers play an important role in developing the abilities, leanings, and thinking styles of their students and their own thinking styles impact their students. Sternberg (2002) notes that thinking styles are a group of strategies and methods used by people and professionals for problem solving and for task performing and therefore they are considered to be an important aspect of teachers' behavior at work.

1. **Theoretical Background**

Zhang and Sternberg (2006) state that a thinking style is a person's preference for using his cognitive abilities in a certain manner. Sternberg (2002) defines thinking styles are a group of strategies and methods used by people for problem solving and for task performing and they way in which they perceive, absorb, process, and conceptualize the information. People use a certain thinking style for a specific situation and they have a dominant style which may be changed to suit the situation. Students' thinking styles are influenced by their teachers' thinking styles. Thinking styles are the product of a socialization process, they change over a period of time and are measurable. There is no such thing as a preferred style, nor are there good or bad ones, there are only different ones. Each person has several different styles that are used depending on the circumstances.

Zhang and Sternberg (2005) note that culture influences a person's abilities, leanings and preferences. Culture reinforces creative thinking and thinking styles such as the legislative and the liberal styles. Smith (2002) adds that different cultures prefer different thinking styles. For example, in the culture in the USA, innovativeness and the liberal thinking style is preferred; in Japan's conservative culture, the conservative culture is preferred. The Arab culture prefers the executive, local, hierarchic and conservative thinking styles (Alkudath & ElMakdadi, 2008; Abu Hashem, 2015.)

Sternberg's (1997) Theory of Self-Government states that there are five categories that reflect a person's inner world, and each category includes a group of thinking styles. The main claim of this theory is that the different forms of self-government are a reflection of the ways in which we govern ourselves and are the external expression of our inner world. The theory tries to explain how we manage our daily cognitive activities. The thirteen thinking styles are divided among five categories:

Functional: legislative, judicial, executive; Forms: monarchic, hierarchic, oligarchic, anarchic; Levels: global, local; Scope: internal, external; Leanings: liberal, conservative (Sternberg, 1995.)

Based on these five categories, it is possible to define and evaluate people. People may change their thinking style both in terms of extremes and flexibility. For example, some people will be liberal in almost every situation, but others will sometimes be liberal and sometimes conservative.

Zhang, 2000; 2004 proposed a different categorization for thinking styles following analysis of the findings of various studies in different cultures. She proposed three groups of thinking styles:

Type 1 thinking styles: creative thinking and complex cognitive thinking. The group includes the following thinking styles: legislative, judicial, global, liberal and hierarchic.

Type 2 thinking styles: Activities with clear standards and a less complex cognitive thinking. The group includes the following thinking styles: executive, local, conservative and oligarchic.

Type 3 thinking styles: Includes all the other thinking styles: monarchic, anarchic, internal and external and were not included in the Type 1 and 2 styles. People with Type 3 thinking styles have characteristics from both Types 1 and 2 and use them according to the demands of their work and the circumstances.

A number of researchers note that thinking styles form a central part of a person's personality (Furnham et al., 1999; Jakson and Lawty-Jones, 1996) and other scholars claim that personality characteristics and thinking styles are parallel to each other to a certain extent but each one of them has a unique contribution and clear structure that defines them Larson, Rottinghaus and Borgen,, 2002; Riding and Wigley, 1997; Roodenburg, Roodenburg and Rayner, 2012; Zhang, 2006). Zhang (2002, 2006, 2008) conducted a number of studies and found that personality characteristics explain a high percentage of the differences between thinking styles. Additional studies found that personality characteristics explain an even higher percentage of the differences between thinking styles (Rosander and Bäckström, 2012). Chamorro-Premuzic and Furnham (2009) found that it is easier to change thinking styles than personality characteristics.

Thinking styles have an important role in predicting a person's behavior in various situations, such that they assist in understanding his professional behaviors.

In their research Zhang & Sternberg (2010) found that six personality characteristics of teachers correlated significantly with the thinking styles defined by the theory of mental self-government. These teacher characteristics are: gender, work satisfaction, adopting new teaching methods through projects, and autonomy in choosing study contents.

Yu & Zhu (2011) found that teachers with Type 1 thinking style preferred to use student-based interpersonal behaviors (leadership, friendship, understanding and freedom) methods in the classroom, whereas teachers with Type 2 and 3 thinking styles preferred to use non-student-focused interpersonal behaviors (profitable and lack of satisfaction).

Emir (2013) conducted a study in Turkey and found a positive correlation between teachers' critical thinking and the following thinking styles: judicial, anarchic, holistic and conservative. Bulus (2006) conducted another study in Turkey a ????

Zhang (2008) found that Type 1 thinking styles consistently encouraged efficient learning, but Type 2 thinking styles impeded effective learning.

A number of studies about the most common thinking styles among teachers have been conducted in the Arab world, but no study seems to have been conducted among the Arab-minority teachers in Israel. Hider and Sharif (2009) studied the common thinking styles of 153 student teachers at the Al Musol university in Iraq and found that the external, anarchic thinking styles were the most common and the least common was the global thinking style. Albaqii (2012) conducted a similar study among 109 student teachers in schools of education in Jordanian universities. The findings showed that the most common thinking styles were: executive, hierarchic, monarchic and external. Abu Hashem's (2015) study was conducted among student teachers in Egypt and Saudi Arabia and found that the anarchic and oligarchic thinking styles were the most common and the least common were the judicial, liberal and external thinking styles. It seems that the global, liberal and judicial styles that were not commonly seen indicates that they are not appropriate for the conservative culture in the Arab world and are more appropriate for the Western world. Grosbard (2013) notes that the participants belonging to the Arab sector in Israel have the external thinking style which does not encourage the development of Type 1 thinking style (legislative, judicial, liberal, global, and hierarchic) as much and encourages Type 2 and 3 thinking styles more.

A number of studies examined people's thinking styles with relation to background variables. Zhang (2002) notes that males showed a higher level of the legislative, judicial and liberal thinking styles than females. Fer (2012) notes that female students tend to display executive and conservative thinking styles whereas male students tend to display global and liberal thinking styles. Nobel and Abu Awad (2012) found that males tend to display the legislative and liberal thinking styles and females tend to display the executive and judicial styles. Hussein (2011) notes that female pre-school education students tend to use the judicial, monarchic and oligarchic thinking styles. Bushra and Omer (2013) conducted their study among students at the University of Assiyut in Egypt and found that female students prefer the external thinking style whereas male students preferred the hierarchic thinking style. Nasser and Yudak (2010) did not find any correlation between gender and thinking styles.

The Arab minority in Israel places greater emphasis on its collective identity which is formed by familial, ethnic and nationalist identity and less on the individual identity. The social values are expressed by a commitment to the family and by putting the needs of other people ahead of a person's own needs (Jaraisy, 2013.)

The majority of teachers in the Arab minority schools in Israel do not encourage creative thinking among their students (Abu Hussain, 2015) and do not enable their students to realize their potential, nor do they challenge their students or enable them to learn through trial and error. The teachers themselves do not make any changes and they are not curious to learn more (Mahamid, 2012; Abu Hussain, 2015.) The relationship between teacher and student is an authoritative one and students are expected to be obedient, conformist and show respect to their teachers.

The thinking styles of Arab teachers who are a minority in Israel, who are part of a developing society with unique characteristics has not been studied sufficiently. Arab society in Israel has recently been undergoing rapid change processes in the social, economic, political, cultural and familial spheres, and teachers' thinking styles and their influence on their work in schools is important and therefore it is important to examine what thinking styles are most common among Arab teachers who are a minority in the Arab education system in Israel.

Based on the literature review, this study will examine two hypotheses:

The most common thinking styles among Arab minority teachers will be Type 2 (executive, local, conservative and oligarchic) and Type 3 (monarchic, anarchic, internal and external). Type 1 (legislative, judicial, global, liberal and hierarchic) will be the least common.

Background variables (gender, seniority in the profession, stage of study) will influence differences in teachers' thinking styles.

**2. Method**

* 1. **Participants**

185 Arab teachers who work in the Arab education system in Israel in pre-school, elementary and high schools. The teachers were chosen in a random sample from lists of the Ministry of Education's Pisgah In-Service training centers.

* 1. **Study Design**  
     This is a correlative study that examines the most common thinking styles among Arab teachers in the Arab education system in Israel.
  2. **Study Variables**  
     Thinking styles, seniority in teaching, gender, stage of study
  3. **Study Tools**The study is based on data gathered from a self-reporting questionnaire distributed to Arab teachers in Israel. The first part of the questionnaire asked about their background variables, and the second part about the main thinking styles of the study.  
       
     The **thinking styles questionnaire** is based on Sternberg's (1997) Thinking Styles Inventory to determine the participant's thinking style. However, analysis of the findings was based on Zhang's (2000; 2004) classification. The questionnaire consists of 65 statements which characterize five categories of thinking styles. The respondents are asked to rate themselves on a scale from 1 to 7, with 1 indicating that they do not agree with the statement at all and 7 indicating that they fully agree. The questionnaire consisted of statements from Sternberg's (1997) questionnaire and includes all the thinking styles. Abu Hashem (2009) translated it into Arabic and validated the content. The Arabic version showed the following reliability coefficients of internal consistency (Cronbach's alpha) in the various categories:

First category (functional) α=0.92; second category (forms) α=0.89; third category (levels) α=0.93; fourth category (scope) α=0.96; fifth category (leanings) α=0.91.

In the current questionnaire, the reliability coefficients of internal consistency (Cronbach's alpha) of the different thinking styles showed:

Type 1 α=0.88; Type 2 α=0.74; Type 3 α=0.64. The entire questionnaire showed a reliability of α=0.79.

* 1. **Study Procedure**The questionnaire was distributed by the study author to teachers. They were given an explanation of the study aims, told that the data would remain anonymous and be used for study purposes only. All the teachers agreed to participate, they cooperated and completed the questionnaires during the first meeting. The data was analyzed using the SPSS statistical analysis software as well as theoretical statistics to examine the study hypotheses.

1. **Findings**

**First hypothesis:** The most common thinking styles among Arab minority teachers will be Type 2 (executive, local, conservative and oligarchic) and Type 3 (monarchic, anarchic, internal and external). Type 1 (legislative, judicial, global, liberal and hierarchic) will be the least common.

Table 1:

**Common Types and Thinking Styles Among Arab Teachers** (N=185)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **%** | **Mean (SD) per type for each type** | **Mean (SD)** | **Thinking Style** | **Style Type** |
|
| 62% | 4.34 (1.06) | 3.98 (1.13) | Legislative | **Type 1** |
| 4.56 (1.22) | Judicial |
| 4.78 (1) | Hierarchic |
| 4.17 (.82) | Global |
| 4.22 (1.13) | Liberal |
|  | 5.21 (1.05) | 5.28 (1.06) | Executive | **Type 2** |
|  | 5.05 (1.05) | Oligarchic |
| 74.42% | 5.56 (.9) | Conservative |
|  | 4.97 (1.2) | Local |
| 68.85% |  | 4.78 (1.01) | Internal |  |
| 4.82 (.95) | 4.73 (.91) | External | **Type 3** |
|  | 5.07 (.97) | Monarchic |  |
|  | 4.73 (.94) | Anarchic |  |

Table 1 shows that the most common thinking styles among Arab teachers are Type 2 (M=5.2, SD=1.05) and Type 3 (M=4.82, SD=.95) and the least common is Type 1 (M=4.34, SD=1.06).

**Second hypothesis:** Background variables (gender, seniority in the profession, stage of study) will influence differences in teachers' thinking styles.

**Table 2:**

**Differences in Thinking Styles Among Teachers Based on Seniority**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **New Teachers** | |  | **Senior Teachers** | | **Value** | **Statistical Significance** |
|  | **N=71** | |  | **N=114** | | **t(152)** |  |
|  | **Mean** | **SD** |  | **Mean** | **SD** |  |  |
| **Group 1** | 4.82 | 0.43 |  | 5.25 | 0.55 | 0.27 | 73.0 |
| **Group 2** | 4.93 | 0.55 |  | 4.84 | 0.64 | 0.45 | 0.62 |
| **Group 3** | 5.16 | 0.51 |  | 81.4 | 0.59 | 0.45 | 66.0 |

The data in Table 2 shows that there are no statistical differences in thinking style groups between the new and senior teachers. The senior teachers have the highest mean in the first thinking styles group, and the new teachers have the highest mean in the third thinking styles group.

**Table 3:**

**Differences in Thinking Styles Among Teachers Based on Gender**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | **Male**  **Teachers** | | |  | | **Female Teachers** | | | | **Value** | | **Statistical Significance** | |
|  | | **N=51** | | |  | | **N=134** | | | | **t(161)** | |  | |
|  | | **Mean** | | **SD** |  | | **Mean** | | **SD** | |  | |  | |
| **Group 1** | 4.95 | | 0.64 | | |  | | 5.21 | | 0.55 | | 0.22 | | 0.83 | |
| **Group 2** | 5.04 | | 0.68 | | |  | | 5.00 | | 0.65 | | 0.32 | | 0.74 | |
| **Group 3** | 5.06 | | 0.58 | | |  | | 4.94 | | 0.58 | | 0.92 | | 0.35 | |

The data shows that there are no statistical differences in thinking style groups between male and female teachers. The male teachers have the highest mean in the second and third thinking styles groups and the female teachers have the highest mean in the first thinking styles group.

**Table 4:**

**Differences in Thinking Styles Among Teachers Based on Study Stage**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Pre-School** | | **Elementary**  **School** | | **High School** | | **Value** | **Statistical**  **Significance** |
|  | **N=63** | | **N=67** | | **N=55** | | **t(2154)?** |  |
|  | **Mean** | **SD** | **Mean** | **SD** | **Mean** | **SD** |  |  |
| **Group 1** | 5.23 | 0.59 | 5.22 | 0.53 | 4.93 | 0.57 | 0.11 | 0.89 |
| **Group 2** | 4.82 | 0.63 | 5.03 | 0.67 | 5.09 | 0.70 | 1.22 | 0.29 |
| **Group 3** | 4.81 | 0.62 | 4.97 | 0.59 | 5.17 | 0.61 | 0.67 | 0.51 |

The data shows that there are no statistical differences in thinking style groupsbetween teachers at different stages of study. The teachers who teach in pre-school and elementary schools have the highest mean in the first thinking style group, and the high school teachers have the highest average in the second and third thinking styles groups.

1. **Discussion**

The aim of this study was to examine which thinking styles are the most common among Arab teachers in Israel. The findings of this study will be discussed and compared with previous studies. The limitations of this study as well as its theoretical and practical implications will be discussed.

The **first hypothesis** was that the most common thinking styles among Arab minority teachers would be Type 2 (executive, local, conservative and oligarchic) and Type 3 (monarchic, anarchic, internal and external). Type 1 (legislative, judicial, global, liberal and hierarchic) would be the least common. This hypothesis was verified. This finding is supported by other studies that examined thinking styles among Arab students in Jordanian, Egyptian and Iraqi universities. The studies found that the most common thinking styles were Types 2 and 3, for example the executive, monarchic, oligarchic and external styles. The least common thinking styles were Type 1 (executive, global, judicial, liberal and hierarchic). (Abu Hashem, 2015; Albaqii, 2012; Hider and Sharif, 2009.)

The verification of the hypothesis shows that Arab minority teachers prefer Type 2 and Type 3 thinking styles. This finding may be attributed to Grosbard's (2013) study which found that study participants from Arab society in Israel display an external thinking style that does little to encourage Type 1 thinking style (legislative, judicial, liberal, global and hierarchic) and encourages Types 2 and 3 thinking styles more. In addition, teaching in educational institutions in the Arab education system is mainly frontal, and does not develop creativity and higher order thinking skills. Thus, the Type 1 thinking style is not expressed in schools and Types 2 and 3 are more entrenched among students (Abu Hussain, 2015.)

This finding may be explained by Smith (2002) who notes that some cultures prefer a certain thinking style whereas other cultures prefer the opposite. Some cultures teach their children not to ask questions about certain core values in their religion or about other topics. Other cultures encourage children to ask questions. The social values in the Arab minority in Israel and the teachers who represent these values do not encourage innovativeness and creative thinking and do not encourage the students to ask challenging questions (Jaraisy, 2013; Mahamid, 2012.)

Teachers come to school with their personal thinking styles and teaching methods and these influence the learners' thinking styles. Some schools encourage independent thinking, asking of questions and development of problem solving strategies. Other schools only use frontal teaching and dictate to the students how and what to do and thus reinforce the executive thinking style (Abu Hussain, 2015; Smith, 2002.)

Sternberg (1997) claims that in order to create effective learning processes, we must provide the learner with a variety of activities and teaching methods so that at least some of the activities or teaching methods will be appropriate for his thinking style. Different teaching methods are appropriate for different thinking styles. For example, frontal teaching is appropriate for the executive thinking style, and asking questions is appropriate for Type 1 thinking style (legislative and judicial), group work is appropriate is appropriate for the external thinking style, learning through projects and study is appropriate for Type 1 legislative, solving given problems is appropriate for the executive thinking style, working in small groups to find answers for factual questions is appropriate for the external and executive thinking styles, and reading is appropriate for the internal thinking style, etc. This means that if the teacher does not have Type 1 thinking style (legislative, judicial, hierarchic, global and liberal) which is appropriate for certain teaching methods, he will find it very difficult to use methods such as asking questions, learning through projects and study and discovery. When a teacher has Types 2 and 3 thinking styles which is appropriate for traditional teaching methods, he will use these teaching methods.

In most cases, Arab teachers use frontal teaching methods which are more appropriate for the executive thinking style, because the student is not required to intervene but to accept the information that the teacher presents him. This method is also more appropriate for learners with the local thinking style (Sternberg, 1997; Abu Hussain, 2015.)

Compatibility between the teacher's teaching style and the student's thinking style improves the student's learning and achievements and therefore this compatibility is important. It is also important to check the learners' functioning through the use of various evaluation tools that are appropriate for different thinking styles. This recognition by researchers is very worrying because the current generation of children has very different thinking styles from their teachers, thanks to the 21st century technological revolution. Therefore it would appear that Type 1 thinking style (legislative, judicial, hierarchic, global, and liberal) which is very connected to innovative and varied teaching and evaluation methods is very important and is more appropriate for today's students (Zhang, 2001.)

The **second hypothesis** was that background variables (gender, seniority in the profession, stage of study) will influence differences in teachers' thinking styles. This hypothesis was not verified, and no differences were found in teachers' thinking styles based on background variables (seniority, gender and stage of study). This finding is supported by Nasser and Yudak (2010) who did not find any correlation between gender and thinking styles. However, the findings show differences that are not statistically significant in preferences for thinking styles based on background variables. Senior teachers with many years of experience in the profession preferred teaching styles from the first group, whereas new teachers preferred thinking styles from the third group. This finding may be explained by the fact that senior teachers are very experienced and are more professionally advanced than new teachers. This finding is supported by Bulus (2006.)

Male teachers preferred Group 2 (executive, local, conservative and oligarchic) and Group 3 (monarchic, anarchic, internal, and external) thinking styles, whereas female teachers preferred Group 1 thinking styles (legislative, judicial, global, liberal, and hierarchic.) This finding may be explained by the fact that the Arab society in Israel is undergoing a change process in many spheres of life (Abu Hussain, 2015). The female teachers living in a developing society have a greater will to be freed from the chains of the male-dominated society they live in. This finding is partly supported by Hussain (2011) who found that female pre-school education students tend to use the judicial, monarchic and oligarchic thinking styles.

Female teachers in pre-school and elementary schools preferred Group 2 thinking styles and male teachers in high schools preferred Groups 2 and 3 thinking styles. This finding might be explained by gender, because the percentage of females in pre-schools and elementary schools in the Arab education system is 90%, whereas is high school it is only 25%.

**Recommendations**

On the **theoretical and methodological** levels, we recommend further studies with a larger sample population which will include male and female, Arab and Jewish teachers and to carry out a comparative study with other traditional as well as modern societies. We also recommend examining the influence of teachers' professional development such as meaningful learning on their thinking styles and to use qualitative and quantitative research tools.

On the **practical** level, we recommend that teacher training colleges take into account the thinking styles of prospective teachers, and decision makers should consider candidates' teaching styles before accepting them for a teaching position in their schools. Appropriate professional development programs should also be implemented for fostering preferred thinking styles among teachers and for raising awareness about this important topic.

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