

## ESTONIAN TEACHERS' BELIEFS ON TEACHER EFFICACY AND INFLUENCING FACTORS

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**Abstract.** The teacher efficacy concept encompasses a collection of beliefs, attitudes and emotions that basically guide the work of individuals and accounts for individual differences in teaching effectiveness. Generally, teacher efficacy is the belief of a teacher that s/he can influence students' achievements. The aim of this paper is to analyse Estonian teachers' efficacy beliefs and the characteristics of teachers that have an impact on teacher efficacy. In the following study, we have measured practicing and student teachers' efficacy beliefs using the Teacher Efficacy Scale developed by Gibson and Dembo. Factor analysis of responses from 193 respondents yielded two groups of correlating scales that were similar to the scale composition of teacher personal and general efficacy factors found in Gibson and Dembo's study (1984). The Estonian teachers' beliefs in their personal teaching efficacy were rather positive, but their beliefs of general efficacy were less optimistic. It was revealed that teacher efficacy beliefs depend on a teacher's age, school level of teaching, level of professional preparation, speciality, subject taught, and on teaching experience.

**Keywords:** teacher efficacy, Teacher Efficacy Scale, school level, educational level, teaching experience

### 1. Introduction

Who is a good teacher? This is a question that researchers have long tried to answer. Up to the 1970s, the corresponding studies have been mainly positivistic. Researchers observed teachers' behaviour and tried to find relationships between teachers' behaviour and students' achievement. But good practical and professional skills alone do not „make” a good teacher.

During the last decades the attention of researchers has moved from the studies of teachers' external behaviour to the differences in teachers' thinking, beliefs and attitudes. Researchers now think that subjective beliefs have a big influence on a person's behaviour, because a belief in her or his own ability determines how this

person thinks and behaves. One of the best-documented attributes of effective teachers is a strong sense of efficacy (Henson 2001).

Teacher efficacy beliefs, and particularly their development, can be seen as one aspect of a teacher's professional development, and which has been one of the most frequently studied issues in teacher education research. The knowledge of teacher professional development regularities, including teacher efficacy beliefs, are necessary for understanding the developmental possibilities of student and practicing teachers.

Researchers have found strong relationships between teachers' efficacy beliefs, their behaviour and students' achievements (e.g. Gibson and Dembo 1984, Goddard and Hoy 2001). An important research finding is that teacher efficacy beliefs do not only positively correlate with cognitive learning outcomes but also with the learner's other important learning outcomes. A teacher with high self-efficacy beliefs promotes students' motivation, students' self-esteem, self-direction, pro-social attitudes and positive attitudes toward school (Pitkäniemi 2002: 135). Teachers and teacher educators should be aware that a teacher's success is not only a matter of mastering teaching techniques and methods, but it is also influenced by subjective powers.

In our study, we have investigated the efficacy beliefs of practicing and student teachers in Tartu, Estonia, by using the Teacher Efficacy Scale developed by Gibson and Dembo (1984). More specifically, this study examines the concept of teacher efficacy beliefs, analyses research findings of Estonian teachers' efficacy beliefs, and identifies major factors which influence a teacher's sense of efficacy.

### *1.1. The concept of teacher efficacy*

The construct of teacher efficacy has been the subject of numerous studies for approximately 25 years (Labone 2004). In the early 1970s, teacher efficacy was conceptualised as teachers' general capacity to influence student performance (van den Berg 2002:588). Since then, the concept has been continuously developed and now is frequently interpreted in the context of Bandura's (1977) concept of self-efficacy. Adjusted to the teaching profession, it emphasises the importance of teachers' beliefs in their own ability to bring about students' learning.

In more recent works, the notion of teacher efficacy is considered as a collection of beliefs, attitudes and emotions that basically guide the work of individuals and pertain to not only the achievement of students but also to cooperation with colleagues and others involved in the school (van den Berg 2002:588). The formation of teacher efficacy beliefs can be explained in the light of Rotter's theory of internal and external locus of control, Bandura's theory of self-efficacy, and many other concepts of motivation. Generally, teacher efficacy beliefs are considered as composed of two relatively independent components: personal teaching efficacy and general teaching efficacy (Deemer and Minke 1999, Gibson and Dembo 1984:570).

Personal teaching efficacy involves teachers' beliefs in their own capabilities to bring about students' learning. This is the belief of an individual teacher that s/he

possesses the skills necessary to bring about positive changes in students (Gibson and Dembo 1984:570).

General teaching efficacy reflects general beliefs that teachers, as a professional group, possess the power of teaching and the ability to control the learning environment and influence students' motivation and achievement despite external factors such as family background, IQ, or school conditions (Gibson and Dembo 1984:570, van den Berg 2002:587).

These two dimensions of teacher efficacy beliefs are relatively independent. Individuals who believe that teaching is a powerful factor influencing students' learning, in general, may believe either that they are effective or that they lack the ability to make a difference in their students' learning (Hoy and Woolfolk 1993: 357). These dimensions usually have an uneven impact on teaching and learning. Several studies have shown that teacher personal efficacy beliefs have a stronger impact on students' learning achievements than general efficacy (Coladarci and Breton 1997, Graham et al. 2001, Warren and Payne 1997). These studies have revealed also that teacher efficacy beliefs, when compared with such factors as a teacher's income and school climate, were the strongest predictors of a teacher's commitment to the teaching profession. Researchers assert that teacher efficacy beliefs are a major agent of productive schooling (Coladarci 1992).

In this paper we use measures of teacher efficacy for exposing the degree to which a teacher believes that s/he, personally and also as a representative of the profession, can positively influence students and their learning results.

### *1.2. Studying factors influencing teacher efficacy beliefs*

Teacher efficacy beliefs can vary depending on the situation or context of teachers' work. The social-economic status of students, their age, the size of class, and the achievements of students can all play a certain role in the formation of teacher efficacy beliefs (Raudenbush et al. 1992:152). The differences in teacher efficacy beliefs also depend on the nature of the school subject being taught (Raudenbush et al. 1992, Tschannen-Moran and Woolfolk Hoy 2002), the organization of the teaching and the teacher's gender (Anderson et al. 1988, Raudenbush et al. 1992), the school level being taught (Anderson et al. 1988, Evans and Tribble 1986, Greenwood et al. 1990, Raudenbush et al. 1992, Tschannen-Moran and Woolfolk Hoy 2002), the teacher's level of education (Hoy and Woolfolk 1993, Ross et al. 1996), and the extent of teaching experience (Allinder 1995, Hoy and Woolfolk 1993). Several researchers (e.g. Anderson et al. 1988:154, Raudenbush et al. 1992:165) have proved that the level of personal efficacy beliefs is higher among female teachers. Researchers have also found that the extent of teaching experience has a positive impact on personal efficacy beliefs and has a negative impact on general efficacy beliefs (Allinder 1995, Hoy and Woolfolk 1993:368).

Many studies have also shown that a teacher's level of education is positively related to her/his personal efficacy beliefs (Hoy and Woolfolk 1993:367). Yet, researchers in other studies have claimed the opposite: that teachers without

professional preparation have a higher sense of efficacy than qualified teachers. One explanation of this phenomenon is that the level of general education has a bigger impact on personal efficacy beliefs than the level of professional preparation in the case of kindergarten teachers (Ross, 1998). Generally, kindergarten and elementary school teachers have higher beliefs of efficacy (both personal and general) than teachers of middle and secondary schools (Evans and Tribble 1986, Greenwood et al. 1990:102, Tchannen-Moran and Woolfolk Hoy 2002). Conversely, Lee and his colleagues (Lee et al. 1991:203) have found that the sense of efficacy is higher among teachers of large secondary schools than the efficacy beliefs of teachers of elementary schools. So, not all authors affirm the higher efficacy beliefs among kindergarten and elementary school teachers compared with middle/high school teachers.

Despite these studies, many aspects of teacher efficacy beliefs remain unknown. The main instrument used thus far for investigating teacher efficacy beliefs has been the Teacher Efficacy Scale (TES) developed by Gibson and Dembo (1984). This instrument is able to measure teacher efficacy beliefs and reveal the impact of different teacher characteristics on these beliefs (e.g. Allinder 1995, Coladarci and Breton 1997, Enderlin-Lampe 1997, Graham et al. 2001, Hoy and Woolfolk 1993, Soodak and Podell 1993, Warren and Payne 1997, Wertheim and Yona 2002). TES has also been used as the prototype for developing many other similar instruments for measuring teacher efficacy beliefs (Henson 2001).

## **2. Research methodology**

### *2.1. Instrument*

The questionnaire used in this study consists of two parts. The first part includes questions on teachers' demographic data (sex, age, educational level, extent of teaching experience, school level of teaching, subject being taught, etc). Its second part consisted of 30 TES (Teacher Efficacy Scale) items presented in a Likert scale format. Responding teachers had to select a number from one (strongly disagree) to six (strongly agree) indicating their level of agreement with each individual statement. TES includes two types of statements: type one statements explore teachers' beliefs about their own ability to influence students' achievement. Type two statements explore teachers' general beliefs regarding their power and teaching in comparison with other impact factors and are expressed in a more general form. Seventeen statements, clustered into factors of personal and general efficacy beliefs on the basis of confirmatory factor analysis, are presented in Table 3.

In this study a translated and adapted version of TES developed by Gibson and Dembo (1984) was used. Next, for testing the translated and adapted version of TES we asked three teachers (of physics, human science and kindergarten) to fill in the questionnaire and to make suggestions for improving its clarity and intelligibility. The other researchers reported similar measures for adapting TES to

local conditions and context (e.g. Soodak and Podell 1993, Deemer and Minke 1999).

The inquiry of respondents was carried out at the end of 2003 and early 2004. The analysis of the internal reliability of TES yielded Cronbach's alpha coefficient of 0.82 (in Gibson and Dembo's study it was 0.78) for the personal teacher efficacy factor, 0.65 (0.75) for the general teaching efficacy factor and 0.77 (0.79) for the whole scale.

## 2.2. Sample

The size of the research sample was 255 persons. It involved 193 practicing and 62 student teachers. The underlying idea of this sampling was to involve at least 10 % of all teachers in Tartu and of pre-service student teachers (in their fourth or fifth year) studying at the University of Tartu. The potential respondents among practicing teachers were selected randomly, on a voluntary basis, from 9 schools and 10 kindergartens. The sample consisted of 54 kindergarten teachers (21 % of all respondents), 23 teachers of grades 1–4 (9 %) and 116 of grades 5–12 (46 %), and 62 student teachers (24 %). By gender distribution there were 178 women (92 %) and 15 men (8 %). The average age of the teachers was 36 years. The youngest respondent was 21 and the oldest 73 years old. Two percent of teachers had secondary education without professional training, 19 % had secondary education and teacher vocational training, 72 % had higher education with teacher training, and 7 % had MA degrees and teacher diplomas. Tables 1 and 2 give more details on the distribution of teachers by age and extent of teaching experience. The student teachers were all female; the youngest of them was 19 and the oldest 35 years old (mean age 22 years).

**Table 1. Distribution of practicing teachers' sample by age (N = 193)**

| Age category       | %  |
|--------------------|----|
| 21–29 years        | 24 |
| 30–39 years        | 22 |
| 40–49 years        | 26 |
| 50–59 years        | 21 |
| 60 years and older | 7  |

**Table 2. Distribution of practicing teachers' sample by the extent of teaching experience (N = 193)**

| Extent of teaching experience | %  |
|-------------------------------|----|
| 1–5 years                     | 25 |
| 6–10 years                    | 10 |
| 11–15 years                   | 12 |
| 16–20 years                   | 16 |
| 21 and more years             | 37 |

### 2.3. Data analysis

In data processing we used descriptive statistics, reliability tests, and factor analysis. Factor analysis was used for revealing the underlying structure of teachers' responses to the 30-item Teacher Efficacy Scale and for comparing the obtained factor compositions with the findings of Gibson and Dembo's (1984) study.

Analysis of variance (ANOVA) was used for the comparison of the distributions of mean ratings of different subgroups by respondents' sex, age and educational level, school level of teaching, speciality, subject being taught and extent of teaching experience. Finally, t-tests were used for assessing the statistical significances of differences between the mean values of ratings.

## 3. Results

### 3.1. The structure of teacher efficacy beliefs ratings

Factor analysis of responses to TES items, based on the principal components method followed by an axes rotation applying varimax criterion, was used. After the elimination of statements with low communalities and/or factor loadings, 17 items from 30 were submitted to further analysis (see Table 3). Two substantial factors emerged from this analysis accounting for 38.9 % of total variance. It is worth mentioning that in Gibson and Dembo's research 16 items were retained.

In this study, factor one included 12 items (scales 7, 8, 14, 15, 19, 20, 21, 24, 25, 27, 28, 29) and it accounted for 26 % of total variance (in Gibson and Dembo's study it accounted for 18 %). From these items, seven (scales 14, 15, 19, 21, 24, 25, 29) coincided with the items identified by Gibson and Dembo's as factor one (overlapping 58 %). Factor one, as Gibson and Dembo (1984) have labelled this collection of statements in their study, appears to represent a teacher's sense of personal teaching efficacy, or belief that one has the skills and abilities to bring about students' learning. These statements reflect the teacher's opinion of her/his own ability to cope with problems in school and to influence students' achievements, their formulations contain words like *I, me, my* in statements (e.g. "When *I* really try, *I* can get through to most difficult and unmotivated students"). In this study, factor one was identified as *Personal Teaching Efficacy* as well.

Factor two included five items (scales 2, 10, 16, 17, 23) and it accounted for 13% of total variance (in Gibson and Dembo's study 11%). Three of the items (2, 16, 23) were the same as identified in Gibson and Dembo's study (overlapping 60%). As Gibson and Dembo (1984) explained, the statements belonging to factor two represent a teacher's sense of general teaching efficacy or degree to which s/he believes that teachers generally can control the learning environment despite external influences that are out of their control, such as family background,

IQ, or school conditions. (e.g. "A teacher is very limited in what he can achieve because a student's home environment is a large influence on his achievement.>"). These statements reflect the teacher's belief about the general relationship between teaching and learning and how much teachers can influence a child compared with other influences. We named this factor as *General Teaching Efficacy*.

Consequently, a two-factor structure appeared in Estonian teachers' responses, which composition is quite similar to the composition of factors uncovered by Gibson and Dembo (1984) and other studies. The overlapping of the TES items, or scales, in these factors in comparison with Gibson and Dembo's findings was quite high (~ 60 %).

The mean values of teachers' assessments for TES scales clustered into these two factors are given in Table 3. The highest individual mean rating among the statements on the personal efficacy scales was 4.7 and the lowest 3.7. The mean rating of the entire sample of respondents was 4.0 or higher for 11 items of 12 in factor one. Seventy-three percent of the respondents obtained mean scores of 4.0 or higher on all scales. The mean score of all ratings for factor one scales was 4.3 (SD = 0.5). Thus, according to our findings, about 3/4 of teachers' mean ratings and almost all mean values of ratings for 12 statements were confirming positive beliefs (four or higher) on the six-point scale. In other words, we can say that Estonian teachers rather believe that they can cope with problems in school and can personally influence the students' achievements.

The highest individual mean rating for the scales of general efficacy was 4.1 and the lowest 2.0 (see Table 3). Two scales of five belonging to factor two had mean ratings higher than 4.0 and two scales had mean ratings below 3.0. Only 13% of respondents obtained mean scores on the scales of this factor above 4.0. The mean score of the respondents on the scales belonging to factor two was 3.2 (SD = 0.6). This score is just slightly below the midpoint for the six-point scale. So, according to these results and considering the notion of general teaching efficacy, we can say that teachers of our sample rather believe that teachers' impact on students' achievements is generally limited, and that the external influences (e.g. home environment) are stronger than teachers' influence.

In a similar study, Graham and his colleagues (2001) got a mean score of 4.6 for the scales of personal efficacy and 3.7 for the scales of general teaching efficacy. Although these results are significantly higher ( $p < 0.01$ ) than the mean assessments in our study, we can say that the general pattern is quite similar – personal efficacy beliefs are rather positive but general efficacy beliefs are less optimistic.

**Table 3. Teachers' mean assessments and standard deviations for the scales belonging to the factors of personal and general efficacy (N = 193)**

| Scales                                                                                                                                                                  | Mean | SD  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-----|
| <b>Statements for Factor One (personal efficacy)</b>                                                                                                                    |      |     |
| 7. I have enough training to deal with almost any learning problem                                                                                                      | 3.7  | 1.1 |
| 8. My teacher training program and/or experience has given me the necessary skills to be an effective teacher                                                           | 4.5  | 0.9 |
| 14. When a student gets a better grade than usual, it is mainly because I found better ways of teaching that student                                                    | 4.0  | 1.0 |
| 15. When I really try, I can get through to most difficult students                                                                                                     | 4.7  | 0.8 |
| 19. When the grades of my students improve it is usually because I found more effective teaching approaches                                                             | 4.3  | 0.7 |
| 20. If my principal suggested that I change some of my class curriculum, I would feel confident that I have the necessary skills to implement the unfamiliar curriculum | 4.5  | 0.8 |
| 21. If a student masters a new concept quickly, this might be because I knew the necessary steps in teaching that concept                                               | 4.4  | 0.8 |
| 24. If a student did not remember information I gave in a previous lesson, I would know how to increase his/her retention in the next lesson                            | 4.0  | 0.9 |
| 25. If a student in my class becomes disruptive and noisy, I feel assured that I know some techniques to redirect him/her quickly                                       | 4.0  | 0.9 |
| 27. The influences of a student's negative home experiences can be overcome by good teaching                                                                            | 4.0  | 1.0 |
| 28. When a child progresses after being placed in a slower group, it is usually because the teacher has had a chance to give him/her extra attention                    | 4.7  | 0.9 |
| 29. If one of my students failed a class assignment, I would be able to accurately assess whether the assignment was at the correct level of difficulty                 | 4.3  | 0.9 |
| <b>Statements for Factor Two (general efficacy)</b>                                                                                                                     |      |     |
| 2. The hours in my class have little influence on students compared to the influence of their home environment                                                          | 3.7  | 1.0 |
| 10. Some students need to be placed in slower groups so they are not subjected to unrealistic expectations                                                              | 2.3  | 1.1 |
| 16. A teacher is very limited in what he/she can achieve because a student's home environment is a large influence on his/her achievement                               | 4.1  | 1.1 |
| 17. Teachers are not a very powerful influence on student achievement when all factors are considered                                                                   | 4.0  | 1.0 |
| 23. If parents would do more with their children, I could do more                                                                                                       | 2.0  | 0.8 |



### 3.2. Teacher characteristics correlating with teacher efficacy beliefs

Analysis of variance (ANOVA) of distributions of replies by different teacher groups revealed that both the personal and general efficacy beliefs of Estonian teachers are dependent on the school level of teaching, speciality, and the extent of teaching experience (Table 4). However, only the personal efficacy beliefs correlated with a teacher's age, educational level and subject being taught, but not general efficacy. A teacher's gender did not correlate with teacher efficacy beliefs ratings given by different groups of our sample.

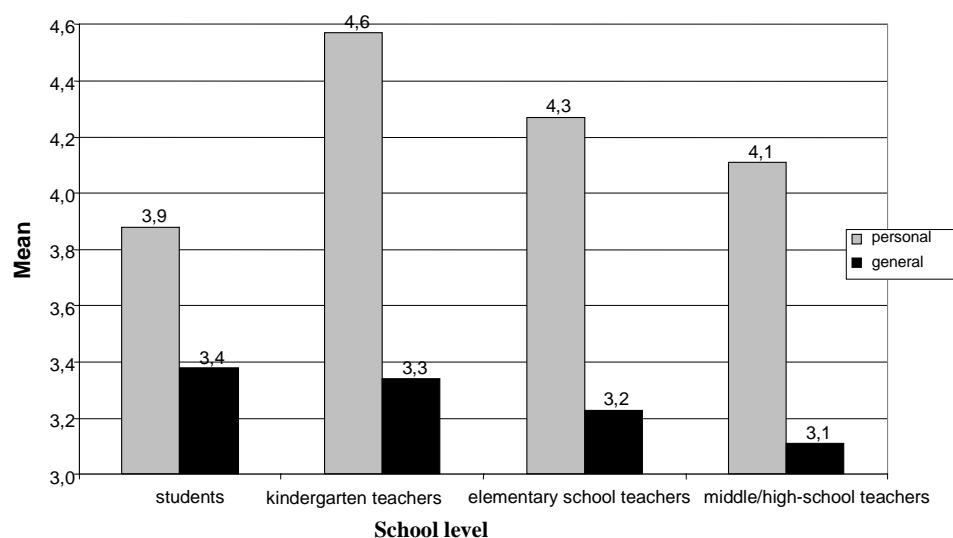
**Table 4. Analysis of variance for teachers' mean assessments of personal and general efficacy by the categories of respondents**

| Categories of respondents                             | F-value of variance for personal efficacy | Significance level $p < 0.05$ | F-value of variance for general efficacy | Significance level $p < 0.05$ |
|-------------------------------------------------------|-------------------------------------------|-------------------------------|------------------------------------------|-------------------------------|
| Sex (teachers)                                        | 1.0                                       | –                             | 0.1                                      | –                             |
| Age (teachers)                                        | 3.6                                       | +                             | 2.3                                      | –                             |
| School level of teaching (teachers and students)      | 21.0                                      | +                             | 9.9                                      | +                             |
| Educational level (teachers)                          | 3.0                                       | +                             | 1.7                                      | –                             |
| Speciality (teachers)                                 | 2.9                                       | +                             | 1.9                                      | +                             |
| Subject being taught (teachers)                       | 2.4                                       | +                             | 1.8                                      | –                             |
| Extent of teaching experience (teachers and students) | 8.5                                       | +                             | 5.6                                      | +                             |

Next we analyse in more detail the dependence of teacher efficacy beliefs on three teacher characteristics which caused statistically significant variance in the mean ratings of teachers belonging to the different categories: school level of teaching, level of professional preparation and extent of teaching experience.

#### *School level of teaching*

The school level at which a teacher teaches correlates in a significant way with both personal and general teacher efficacy beliefs. Kindergarten teachers have the highest (4.6) personal efficacy beliefs (Figure 1) and middle/high school teachers the lowest (4.1). Moreover, student teachers have the lowest personal efficacy beliefs (3.9) compared with all groups of practicing teachers. Statistically significant differences in the mean ratings of different groups in our sample for personal efficacy beliefs appeared between kindergarten and two other teacher groups ( $p < 0.01$ ), and also between student teachers and all other teacher groups ( $p < 0.01$ ).



**Figure 1. Influence of school level on teacher efficacy beliefs**

The middle/high school teachers have the lowest (3.1) general efficacy beliefs in comparison with other respondent groups (Figure 1). Student teachers differ from the other teacher groups – they have the highest general efficacy indices (3.4) and the lowest personal efficacy indices (3.9). Statistically significant differences appeared between the mean ratings of general teaching efficacy given by student teachers and by middle/high-school teachers ( $p < 0.01$ ), and also between the mean ratings of kindergarten teachers and middle/high school teachers ( $p < 0.05$ ).

#### *Teachers' level of professional preparation*

According to the findings of our study, the teachers' level of professional preparation correlates significantly with their ratings of personal efficacy (see Figure 2). Teachers with secondary vocational training had the highest (4.5) and teachers with MA degrees had the lowest (4.1) personal efficacy beliefs. Teachers with secondary and higher education had equal levels of personal efficacy beliefs. Yet, the mean personal efficacy beliefs of teachers with secondary vocational preparation were statistically significantly higher than the personal efficacy beliefs of teachers from other qualification groups ( $p < 0.05$ ).

#### *Teaching experience*

Both personal and general teaching efficacy beliefs correlated with the extent of teaching experience. The teachers with long teaching experience (6–10, 16–20, 21 and more years) had quite similar average levels of personal efficacy beliefs that are significantly higher than the levels of efficacy beliefs of less experienced

teachers (Figure 3). The mean values of personal efficacy beliefs for student teachers (3.9) and teachers with experience of up to five years (4.0) were lower than the indicators of personal efficacy beliefs for all the groups of practicing teachers with school experience over five years ( $p < 0.05$ ).

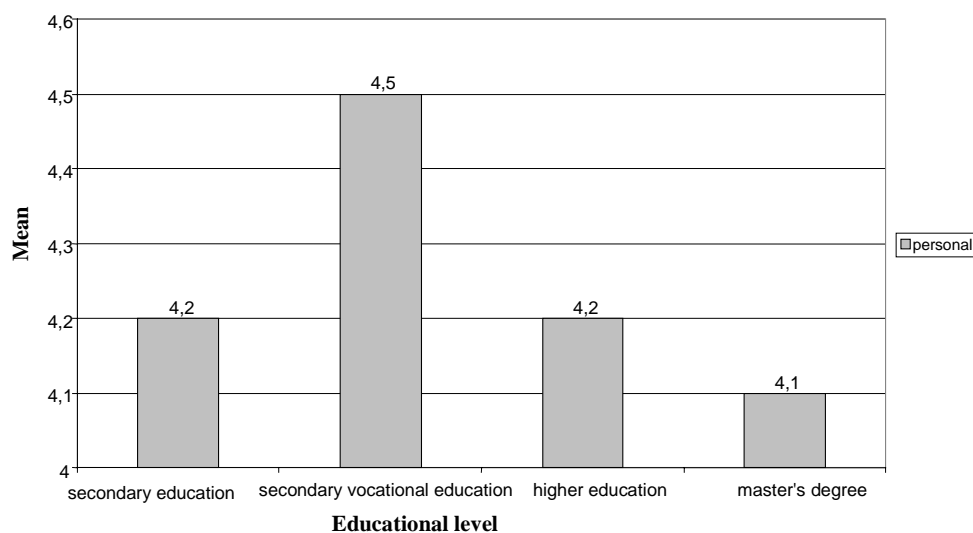


Figure 2. Influence of teacher's educational level on teacher personal efficacy beliefs

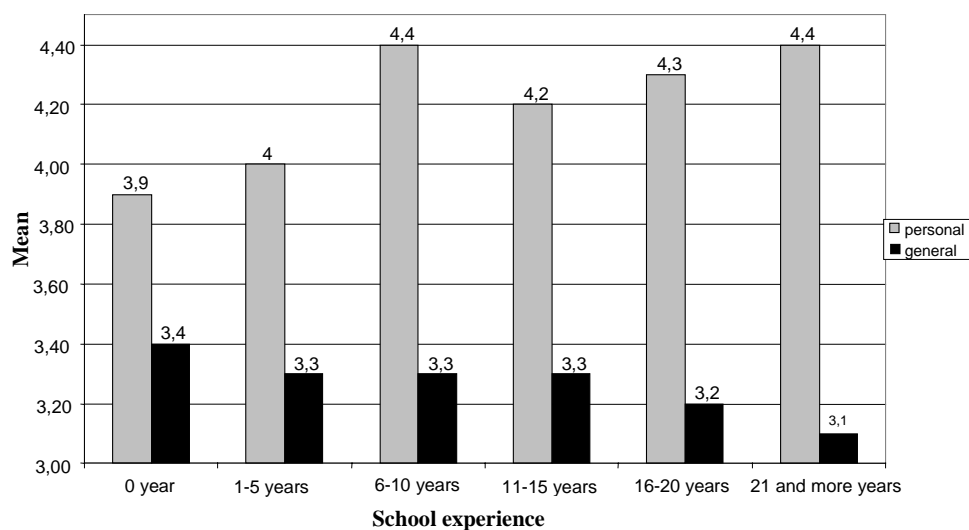


Figure 3. Influence of the extent of teaching experience on teacher efficacy beliefs

General efficacy beliefs remained approximately at the same level (3.3) for the teachers with school experience of 1–15 years (see Figure 3). Other teacher experience groups had lower general efficacy beliefs. The comparison of student teachers' (without experience) general efficacy beliefs with the mean indicators of the other teacher experience groups showed that student teachers always have higher general efficacy beliefs than practicing teachers. However, statistically significant differences appeared only between the mean ratings of general efficacy beliefs given by students and by teachers with experience of sixteen or more years ( $p < 0.05$ ).

#### **4. Discussion**

Many authors (Allinder 1995, Coladarci and Breton 1997, Gibson and Dembo 1984, Graham et al. 2001, Soodak and Podell 1993) have used the Teacher Efficacy Scale in their research. The data analyses of these studies have revealed that the scales of this instrument typically cluster into two factors. One of these factors is usually called personal teaching efficacy and the other, general teaching efficacy. Factor analysis of the respondent ratings in the current study confirmed the existence of a similar structure of factors, whose scale compositions significantly overlap with those found in previous studies.

The study also supports the main conclusions of other studies (e.g. Graham et al. 2001): that teachers give higher ratings to their personal teaching efficacy and tend to be more sceptical about their general teaching efficacy.

A more detailed analysis of the relationship between teacher efficacy beliefs and several teacher characteristics confirmed many already known facts from other studies, but it also revealed some differences. Both the personal and general efficacy beliefs of teachers in our sample correlated with school level of teaching, speciality and extent of teaching experience. It was found that a teacher's age, educational level and subject taught seem to have an influence only on personal efficacy beliefs. No relationship was found between teacher efficacy beliefs and gender, although several authors have claimed for its presence (Anderson et al. 1988, Coladarci and Breton 1997, Raudenbush et al. 1992). Yet, the failure to uncover this relationship in the present study can be explained by the insufficient number of male teachers in our research sample.

Many authors have proven that kindergarten teachers have higher personal efficacy beliefs in comparison with middle and high school teachers (e.g. Evans and Tribble 1986, Greenwood et al. 1990, Tchannen-Moran and Woolfolk Hoy 2002). Our study confirmed these findings, showing that kindergarten teachers gave higher ratings than schoolteachers for both personal and general efficacy scales. In the group of student teachers a reverse picture in the ratings of efficacy beliefs appeared in comparison with all the groups of practicing teachers. If practicing teachers had higher personal efficacy beliefs and relatively low general efficacy beliefs, then the student teachers had relatively low personal efficacy

beliefs and higher general efficacy beliefs. These differences and opposite trends in student and practicing teachers' efficacy beliefs are certainly related to and influenced by the big difference in their familiarity with the job of teaching in these two groups. As found in our study, the school level at which the teacher works correlates with the personal and general efficacy beliefs in the same manner (except with student teachers) as the teacher preparation level – both the teachers' personal and general efficacy beliefs decrease with the increase in school level and in the children's ages. Yet, Hoy and Woolfolk (1993) have proven the opposite: that the higher a teacher's education level the higher is her/his sense of personal efficacy. This contradiction in findings can be explained by the interference of the school level factor that the study by Ross (1998) revealed. In the Estonian study, the group of teachers with secondary vocational education consisted mainly of kindergarten teachers and teachers with masters degree working at the middle or high school level. It is thus quite possible that the positive impact of the professional preparation level was eliminated by the negative impact of the school level at which the teacher worked. However, the confirmation of this hypothesis calls for further studies.

Many researchers have also found that the extent of teaching experience is positively correlated with teacher personal efficacy and negatively with general efficacy beliefs (Allinder 1995, Coldarci and Breton 1997, Hoy and Woolfolk 1993, Lin et al. 2002, Tschannen-Moran and Woolfolk Hoy 2002, Wertheim and Yona 2002). In our study, the respondents with longer teaching experience also had higher personal efficacy beliefs and lower general efficacy beliefs. The student teachers' group had the highest general efficacy beliefs and the lowest personal efficacy beliefs. It is difficult to disagree with Ross (1998: 52) who claims that the discrepancy with experienced teachers in general efficacy beliefs may be caused by a naive ignorance of teaching difficulties and other problems in school by student and beginner teachers. After gaining some experience as teachers, they perceive that it is not so easy to be a teacher and they become conscious of the powerful influence of external factors (e.g. students' home environment), thus their general efficacy beliefs decrease. At the same time, because of their growing experience, their personal efficacy beliefs increase (Hoy and Woolfolk 1993). This applies especially to the first practice in school and to the early years of teaching, which are supported by advanced teacher training courses (Lin et al. 2002, Wertheim and Yona 2002).

The research of teachers' beliefs and attitudes, including teacher efficacy beliefs, serves for identifying important teacher characteristics influencing teaching quality. Teachers must be aware of the role and importance of their own subjective beliefs for their work, and to understand that it is not always enough to have professional skills and knowledge in order to be a good teacher. It is also important to realise that teacher efficacy beliefs are prone to change along with increasing teaching experience and that these teacher subjective characteristics may play an important role in teachers' professional development.

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