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Teachers’ Beliefs Regarding their Professional Role: a Gardener, Lighthouse or Circus Director?

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Abstract

The paper describes a study of teachers’ beliefs and conceptions of their professional role, investigated through metaphors. The Estonian lower secondary school subject teachers (N= 551) were asked to find a metaphor that characterises the teacher’s role and to explain the content of this specific metaphor. Metaphors were classified and analysed based on the model proposed by Beijaard, Verloop and Vermunt (2000). Significant differences were found in the conception of the role of mathematics teachers and teachers of English as a foreign language (EFL). At the same time, there were no relationships observed between role conceptions and teachers’ ages and length of teaching practice.

1. Introduction

A substantial body of research suggests that teachers’ beliefs and values about teaching and learning are related to their teaching practices (e.g. Kagan 1992). The research on teachers’ thought processes indicates that the beliefs teachers hold, have a significant influence on their behaviour (Pajares, 1992). Influencing teachers’ beliefs, therefore, may be one way to facilitate change in classroom practices. It is assumed that any inertia on the part of

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teachers can be attributed to their beliefs that act as a filter through which they interpret their education and experience (Stipek et al. 2001).

One way to study teachers’ beliefs is by using metaphors. According to previous research, metaphors reflect teachers’ beliefs regarding teaching and the teacher’s role, i.e. they illustrate teachers’ professional identity (Bullough 1991; Beijaard et al, 2000; Martinez et al, 2001; Saban, et al, 2007). Metaphors tend to exhibit coherent and internal consistency, providing insights into ideas that are not explicit or consciously held (Saban, 2004) and thus can serve as a tool, making implicit beliefs explicit (Leavy et al, 2007). Metaphors also play a central role in conceptualising and reflecting upon the nature of teaching and learning, and are used as a way to make connections between personal beliefs and educational theories (e.g. Martinez et al, 2001; Alger, 2009; Beauchamp & Thomas, 2009).

At the same time researchers also note, that while metaphors can guide teachers’ learning and practice, they can also limit the “thoughts, attitudes, and actions of prospective educators” (Martinez et al, 2001: 966). Thus, the metaphors that guide teaching provide implicit suggestions about the teacher-student relationships, the approach teachers take with respect to content, and the obligations, duties and responsibilities they will enact (Pinnegar et al, 2011).

In the present study, we have collected and analysed Estonian lower secondary school mathematics and EFL teachers’ metaphors. The aim of the study was to investigate teachers’ beliefs about their role conceptions expressed through metaphors. As we have previously studied pre-service teachers’ beliefs regarding their professional role (Löfström, et al 2010), the second aim of the present research was to further explore the applicability of the Beijaard, Verloop & Vermunt’s teacher’s identity model as a theoretical framework for analysing experienced teachers’ beliefs through metaphors. The research questions for this study were:

(1) What kind of metaphors do Estonian lower secondary school mathematics and EFL teachers use to describe a teacher and what role conceptions are reflected in their metaphors?

(2) What are the differences between mathematics and EFL teachers’ beliefs about the teacher’s role?

(3) Do age and length of teaching practice influence the teachers’ views about the teachers’ role reflected through metaphors?

A total of 551 lower secondary school teachers, selected randomly across Estonian schools, participated in the research - among them 241 mathematics teachers and 207 EFL teachers. 153 EFL teachers and 139 mathematics teachers wrote metaphors. The length of teaching practice varied, although there were more novice teachers among EFL teachers and more experienced ones among mathematics teachers. The average age of EFL teachers was 41.5 years and 46.5 years for mathematics teachers.

2. Method

As a part of a longer survey, teachers were asked to provide/write a metaphor characterising the teacher’s role. The respondents were prompted by the beginning of a statement: A teacher is like…. They were also asked to add a brief explanation of their metaphor.

We have analysed the metaphors using the dimensions of the teacher identity model developed by Beijaard, Verloop and Vermunt (2000) that captures teacher identity through beliefs of the teacher’s knowledge base, where teacher expertise is expressed by subject-matter expertise, pedagogical knowledge, and didactics expertise. More precisely:
1. **The teacher as a subject expert:**
   Emphasis is on subject matter knowledge signifying orientation towards an academic subject. The teacher is primarily seen as a person who has a profound knowledge base in his/her subject;

2. **The teacher as a didactics expert:**
   Emphasis is on the creation of a supportive learning environment with optimal use of teaching and learning methods. The teacher is primarily seen as being responsible for designing and guiding students’ learning processes;

3. **The teacher as a pedagogical expert:**
   Emphasis is on relationships, values, moral and emotional aspects of development. The teacher is seen as someone who supports the child’s development as a human being.

The above mentioned dimensions are not exclusive of each other; on the contrary, they all influence a student’s identity, but the knowledge base that the teacher primarily relies on in teaching may have implications for what is emphasised in teaching, and what is seen as the primary role of the teacher.

The metaphors together with their explanations formed the unit of analysis. They were classified into one or more of the three dimensions described above. The categorization was judged on a case-to-case basis using two independent graders (authors of the present paper) whose coding was compared at the end. When the categorizations did not match, an agreement was reached through negotiation. In most cases it was not difficult to reach consensus. The agreement rate for the original categorizations was 69.9% for EFL and 60.4% for mathematics teachers’ metaphors. The disagreement between the graders was connected with metaphors that did not fall into one of the ‘pure’ categories (subject specialist, pedagogue, didactics expert) but were a combination of them, i.e. hybrid. However, in several cases of disagreement there was a partial agreement (i.e. one of the categories matched) and when this was taken into account, the agreement rate was 82.4% for EFL teachers and 84.2% for mathematics teachers.

While categorizing, it became evident that there were a number of metaphors that did not subject themselves to the Beijaard & et al. Model; thus two new categories were created:

4. **Self-referential** (with reference to the teacher’s characteristics without reference to the role or task of the teacher);

5. **Contextual** (describing physically, socially or organizationally the setting in which the teacher works).

The main method we applied to analyse the collected metaphors was theory-driven content analysis. Additionally, descriptive statistical analyses were used to describe the frequency of teachers’ usage of different types of metaphors. The distribution of metaphor categories and differences in mathematics and EFL teachers’ metaphor-preferences was analysed using the Chi-Square analysis.

### 3. Results

In the following section, results together with examples of metaphors will be introduced. The examples of metaphors will be provided with the letter $M$ indicating a mathematics teacher and $E$ indicating an EFL teacher. The number corresponds to the teacher’s number in the database.

(a) There were 27 mathematics and 39 EFL teachers’ pure pedagogical expert metaphors. If pedagogue metaphors used as part of so called hybrids are also taken into account, one may conclude that 35.6% (i.e. 70) of all mathematics teachers’ metaphors and 50.6% (i.e. 51) of all EFL teachers’ metaphors belonged to this category.
These metaphors emphasised the caring role of the teacher and reflected the emotional aspects of teacher work. The task of the teacher was mostly seen as being a support for a student, both in and out of class, helping to deal with social problems as well. The most common metaphors of this type were mother, friend, guide and gardener.

**Mother** - who helps the child to grow, gives consolation when needed, laughs and cries with the student (M 123).

**Gardener** - who sows seeds, weeds, waters, cuts off branches when needed. And so it goes round and round every year, whatever flood or drought there might be, the gardener should always guarantee the blossoming of his/her garden with whatever effort it takes! (E 89)

Pedagogical expert metaphors also emphasised the guiding and supporting role of the teacher. A teacher is meant to be someone who develops the student, helps them to find their way in life, provides role models. In this respect metaphors like a lighthouse or a guide were used.

**Guide** - whose task it is to prepare his/her students for real life, guiding the child carefully and gradually into the grown-ups’ world (M 102)

Teachers using these types of metaphors tended to identify the teacher as a person who makes students feel comfortable supporting their development at school. The primary task for these teachers is to nurture children and to develop their personalities, not to teach them a certain subject.

(b) Pure didactics expert metaphors were given by 43 mathematics and 14 EFL teachers. If didactics metaphors from hybrids are also included, the numbers were: 70 (43.8% of the total) for mathematics and 51 (33.1% of the total) for EFL teachers. The teacher was described in connection to students’ learning, primarily as a person who plans learning strategies trying to make teaching/learning process as attractive as possible.

Two distinctive types of didactics metaphors emerged:

(1) Offering a variety of methodology in the learning process. The most common metaphors were actor, conductor, chameleon, builder, stage director.

   *The teacher must be like a good actor who catches the audience’s attention artistically. The teacher must be able to deliver the lesson with artistry, so that all students are interested and involved in learning the subject (M33)*

(2) Offering students’ help in finding the way in the learning process. The most common metaphors were compass, guidepost, sun, coach.

   **Guidepost** - showing the direction to knowledge - the speed and direction of movement is individual to a student, but the teacher should suggest the different ways to reach the destination (E76)

(c) There were 7 mathematics teachers’ and 10 EFL teachers’ pure subject expert metaphors. If these types of metaphors from hybrids are included, the respective numbers will be: 18 (11.3% of the total) for mathematics teachers and 27 (17.5%) for EFL teachers. The typical metaphors in the subject expert category described the teacher as a source of knowledge. The metaphors belonging to this category were mostly connected with a book, encyclopaedia, computer or a well of knowledge.

   *A living book whose task is to know absolutely everything (M122)*
**Well of knowledge** that is always ready to offer knowledge, like water, for students at whatever time and in whatever situation (E21)

In the *subject expert* metaphors the importance of the amount and depth of teacher knowledge was highlighted as well as concern about getting across information to the students, which was thought to expand their knowledge. The teacher in these metaphors was described as an intelligent person who knows a lot about her subject and students can learn from them. Not much was said about the deepening of understanding or creation of meaning. So, in the image concept of these teachers, subject knowledge and transmission of information to the students dominates.

(d) Many metaphors were a combination of different categories, 31.5% of mathematics teachers and 36.6% of EFL teachers’ metaphors were coded as hybrids. Mostly these metaphors involved two categories (45 and 47 respectively) and some, three categories (mathematics 4 and EFL 7). The most common hybrid for both mathematics and EFL teachers was the one having both categories of *pedagogical* and *didactics expert* (13 mathematics metaphors/17 EFL metaphors). For example:

**MacGayver and Mother Teresa in one person.** The teacher as MacGayver, should be able to produce quick mathematical solutions using whatever limited resources he or she has. And mother Teresa because he/she has to fight each day for the wellbeing and future of his/her students (M 150)

**Encyclopaedia, counsellor and intermediary:** The teacher should be a resource book that offers knowledge to students. From time to time you need to help students with their everyday problems, so teachers should be ready to become counsellors. At the same time, it is the task of a teacher to be an intermediary between the student and the subject, and teach so that all students understand what is learnt and why. So, many roles to combine! (E 23)

The fact that teachers see their professional role mostly as a combination of either *subject matter, pedagogical* or *didactics experts* might indicate that teachers who see their role as a mixture of several roles have a more balanced view about their profession.

(e) As mentioned above, not all metaphors could be divided between Bejaard et al (2000) categories and two new categories (*self-referential* and *contextual*) were created. Metaphors coded as *self-referential* did not refer to acts central to teaching, students or classroom instruction. This category contained similar features to the ‘self-referential’ metaphors in the study by Leavy et al. (2007) in which the metaphors focused on what teaching represented for the respondents as individuals. There were 22 mathematics and 32 EFL teachers’ *self-referential* metaphors that described what the teacher is like. The positive characteristics usually depicted the teacher as a *lifelong learner, bee, sunshine, good wine, candle*:

* A teacher is like **good wine** that gets better with years. (E 45)

Many *self-referential* metaphors were focused on potentially negative attributes, being mostly connected/represented in the form of animals, such as *camel, mule, sheep*:

* A teacher is like a **camel** whose burden increases all the time; but despite that, a teacher must tolerate everything and go on! (M 42)

(f) The other new category that emerged was labelled as *contextual*. Metaphors coded as *contextual* referred to characteristics of the environment (context). There were only 8 mathematics and 2 EFL teachers’ *contextual*
metaphors that described the working context of a teacher. All of them carried negative connotation and expressed the feeling that too much is demanded from the teacher at work (slave, paper worm, lemon without any juice left):

A teacher is like a paper worm - someone who must eat through the growing bureaucracy (curricula, work plans, analyses etc) at school (M 118)

(g) In addition to the qualitative analysis of the metaphors, the distribution of 159 mathematics and 156 EFL teachers’ metaphors between the categories was also analysed. The first step was to identify categories of hybrid metaphors among the five main categories for both respondents’ groups. This resulted in some metaphors being coded under several categories and as the result of that, the number of all analysed metaphors was greater than the number of teachers writing metaphors. The percentage distribution of metaphors of both groups between categories is presented in Figure1.

![Figure 1. Percentage of metaphors in each category](image)

A Chi Square analysis for independence was used to assess whether the frequency of metaphors produced by mathematics teachers varied by category. The Chi-Square analysis indicated metaphors reflecting the perspectives of a didactic expert and pedagogue were greater than that reflecting the perspective of a subject specialist (see Table 1). There was no difference observed between the didactic and pedagogue perspectives.

<table>
<thead>
<tr>
<th>Mathematics teachers</th>
<th>Chi-square</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject - Didactics</td>
<td>42.350</td>
<td>0.000</td>
</tr>
<tr>
<td>Subject - Pedagogical</td>
<td>26.456</td>
<td>0.000</td>
</tr>
<tr>
<td>Didactics - Pedagogical</td>
<td>2.209</td>
<td>0.137</td>
</tr>
</tbody>
</table>

The frequencies of the metaphors produced by the EFL teachers were compared using the Chi-Square test of independence. The most frequently occurring metaphor was the metaphor for pedagogue followed by the didactic expert. The metaphor for subject expert was produced at the lowest level (see Table 2).
Table 2. Differences in EFL teachers’ metaphor choices

<table>
<thead>
<tr>
<th>EFL teachers</th>
<th>Chi-square</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject - Didactics</td>
<td>9.815</td>
<td>0.002</td>
</tr>
<tr>
<td>Subject - Pedagogical</td>
<td>37.217</td>
<td>0.000</td>
</tr>
<tr>
<td>Didactics - Pedagogical</td>
<td>9.604</td>
<td>0.002</td>
</tr>
</tbody>
</table>

A third set of comparisons was made using the Chi-Square test for independence. This set of comparisons focused on whether or not there were differences in frequencies with which teachers from either mathematics or EFL responded with metaphors in each category. The results suggested that EFL teachers produced a greater frequency of metaphors of pedagogues than the mathematics teachers and that the mathematics teachers used metaphors for didactic expert at a greater frequency than EFL teachers (see Table 3). There was no difference in the frequency of production of subject expert metaphors.

Table 3. Differences in mathematics and EFL teachers’ metaphor preferences

<table>
<thead>
<tr>
<th>Mathematics and EFL teachers</th>
<th>Chi-square</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject expert</td>
<td>2.298</td>
<td>0.130</td>
</tr>
<tr>
<td>Didactics expert</td>
<td>4.261</td>
<td>0.039</td>
</tr>
<tr>
<td>Pedagogical expert</td>
<td>7.000</td>
<td>0.008</td>
</tr>
</tbody>
</table>

The relationship between teachers’ choices of metaphors and their age and number of years in the profession was tested by Spearman’s correlation. No significant relationships were detected between these items. So, EFL and mathematics teachers’ image concept as reflected in metaphor preference, depends neither on age nor experience in the profession.

4. Conclusion

According to our study, about one third of the metaphors that teachers used, were hybrid, thus including two to three categories. It shows that both EFL and mathematics teachers have rather a complex conception of their role. It became evident that mathematics teachers used didactics expert metaphors most frequently and the role of a pedagogue was used less frequently (there was no significant difference between these two). The role of subject expert was much less used (only by 11.3 % of metaphors). It might be that mathematics teachers need didactical and pedagogical skills to make mathematics, which is a difficult subject, accessible and interesting for students. On the other hand, EFL teachers use metaphors reflecting the pedagogue’s role most frequently, with self-referential metaphors and didactics expert’s role metaphors following almost equally. There were no significant relationships between the age of a teacher and years of working as a teacher in their metaphor preference.

In the context of an educational reform, teachers’ beliefs about teaching and learning serve them best when they shift in a direction that is coherent with the aims of reform. Given that one of the aims of a recent curriculum reform in Estonia is to promote more active and self-regulated learning by students, and that teachers are expected to gradually endorse a more student-oriented approach to teaching and learning, the role conception reflected through metaphors could be considered positive. Neither EFL nor mathematics teachers see themselves only as a subject specialist but value highly pedagogical and didactical expertise. On the other hand, negative emotions reflected especially among contextual metaphors show that teachers are not happy with their work conditions and it could be an indicator of teacher “burn-out”.
As this research is a part of larger study, the next step will be to compare the results of metaphor analysis with quantitative data analysis to find connections between beliefs and a preference for either a constructivist or traditional approach to teaching. Further research is needed to find the relationship between affective connotations of metaphors and teachers’ job satisfaction and “burn-out” level. Knowledge about teachers’ beliefs can provide important information for necessary pre-service and in-service teacher education or curricular reforms.

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References


