

University of Pécs
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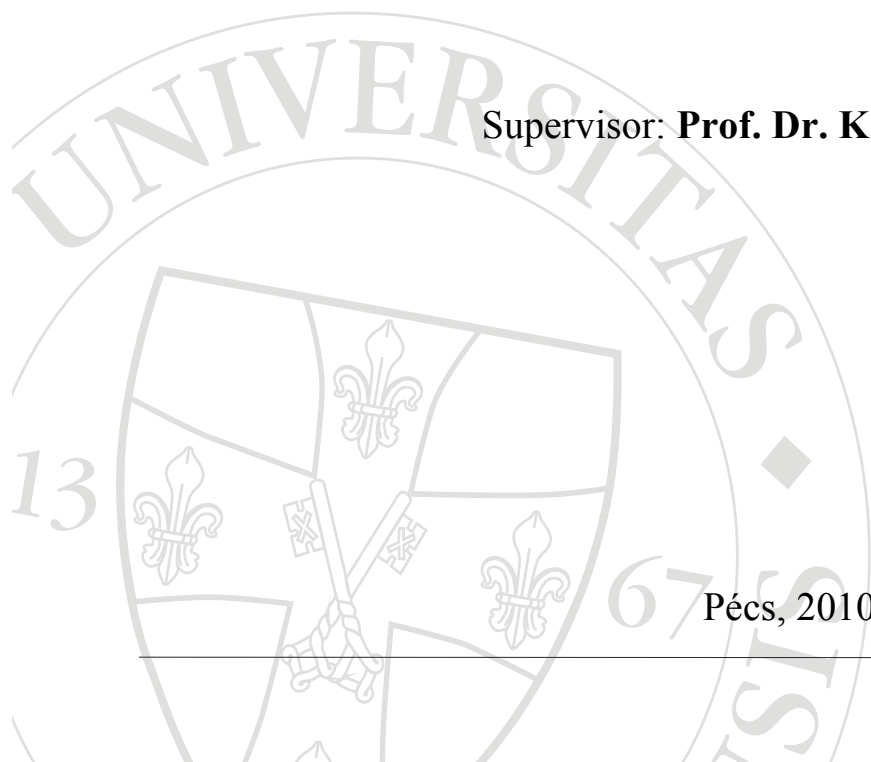
PhD Dissertation

The Stories We Are
A contain analysis of life stories of students in teacher education by
data visualization driven data mining

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Summary of PhD dissertation

Narrative paradigm influenced education in the last decades of the 20th century. In fact, it seems to be inescapable taking into account that modern and postmodern do exist simultaneously nowadays, and postmodern can be identified with narrative paradigm in some sense. Narrative paradigm is present in pedagogy in many ways: as a method, as an approach, and as a research methodology. The role of narrative is to maintain culture and to structure individual life. Moreover, it has a major role in structuring the identity too.

I would like to facilitate the commitment of students of teacher education by developing their self-knowledge via their narrative identity, which adds to the development of their work socialization. To this end I analyzed life stories of young students by mixed methodology. I mingled qualitative and quantitative methods by applying data mining techniques. Data visualization driven data mining has never been employed in text analysis so far. I have used this novel method to find connections between the narrative identity and vocational choice. Vocational choice reflects both the self and the professional identity. I could clearly show that this novel approach and methodology can successfully be applied for text analysis. All related findings have been verified by triangulation. These seem to infallibly and unambiguously confirm the connection between the self-story and the choice of teaching professions. Deeper understanding of different student “types” helps in teacher training to classify work socialization.

Hypothesis of dissertation:

- Life stories can be analyzed by mixed methods using data visualization and data mining techniques. Results which are already known in the literature can be reproduced with this new approach, which is as well capable to discover new results with. Unforeseen patterns and results may pop up. In many cases a hypothesis is unnecessary, connections and patterns can be found by using the software only.
- I assume that vocational choice for teaching professions is influenced by life events. This makes vocational choice for teaching professions predictable.
- I assume that vocational choice of a person is influenced by the awareness of his/her personal competences.

Research Design

Data Mining

We are living the „Age of Information”. Local information becomes accessible everywhere due to continuously growing large networks. We are facing with a rich spectrum of abundant information, and this poses new questions together with an urging need for developing methods which are capable to treat this huge amount of information. According to John

Naisbitt, the famous futurist, the biggest contradiction of our age is that “we starve for knowledge despite the huge amount of available information”. The term “data mining” was coined by mathematicians to express that only a fraction of the information carries useful knowledge, parallel to the tiny amount of treasures with respect to the tons of stones treated in real mining activity. My research has been performed by using data mining. This provided with a tool for a throughout investigation of my data, and as well the opportunity to show the applicability of data mining in text analysis.

Description of Research

My aim was to find out which students in teacher education are motivated for teaching professions. Which attributes does motivated and less motivated students have? Do life stories help in answering problems in vocational choice? What facts prove the use and advantages of mixed methods in education science? Do most up-to-date softwares applicable to support mixed methods in specific problems of education science, where the mutual independence of a large number of variables has to be investigated? Multi-variable statistical methods are, of course, applicable, but their application can be difficult for researchers who are not entirely familiar with mathematical statistic. Are there any qualitative methods supported by computers which are suitable for setting up a “bricolage” with? My descriptive and interpretive analysis refers to the macro-structure of life stories and leaves their micro-structure untouched. The life stories that have been used for research are reduced bibliographies, since they

were written with the aid of a few given associating words which referred to significant life events and human attributes. The analysis of life stories was done in 2009. Out of 300 life stories I used 51 for the analysis.

Research Results

The first hypothesis about the applicability of data visualization driven data mining in analyzing life stories has been verified. My second hypothesis about the correlation of certain life events and vocational choice for teaching professions seems to have been verified too. Empirical results justify the strong connection between certain narrative elements in life stories and both the identity state of the person and his/her motivation for teaching professions. The most important integrative forces of students in teacher education are:

- self-knowledge,
- contentment,
- evaluation of childhood,
- relationship with the mother,
- purposeful and hopeful attributes,
- conflict-solving ability,
- adaptability,
- relationship.

Outlook

András T. Hegedüs visualized the process of becoming teacher as an ocean full of icebergs. He underlined how much it would mean to have evidence at hand supporting that certain personal property configurations aid the work of teachers. Such configurations can be identified in life stories. Fact is, different individuals require somewhat different training. Their professional motivations are different too. Therefore, in our opinion, a tighter cooperation between subjects of teacher education would be desirable in which self-knowledge oriented subjects would take a bigger role. Another important issue nowadays is what personal property configurations teachers have, and at least as importantly, how efficient teachers are in school? Efficiency of teachers yields success of pupils and students, and as well a positive attitude for learning which, in turn, influences their social competences. Life story constitutes only one component of teacher efficiency, which is a multi-dimensional concept. Teacher efficiency has an integrative effect for the functioning of personality.