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Theoretical Framework Model (TFM) for Examining the Professional Development of Teachers[1]

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There is no generally accepted model for the continuous professional development of teachers (CPD). Different education policies in different countries reflect the implementation of different practices, although the goal is the same: to improve the quality of education. The reasonable goal of this study is to contribute with an editable and content-wise validation of the Theoretical Framework Model (TFM) for further research, a model created on the base of central regulatory documents. To this end, researchers reconciled the dimensions and indicators of the TFM to the TALIS 2018 research tools, then filtered out the relevant Hungarian respondents from the OECD online database. Finally, the data of Hungarian teachers and those of the other 47 TALIS countries were subjected to secondary statistical analysis in order to show correlations with the TFM dimensions and indicators. Results show disproportion between the TFM dimensions and shortcomings of the indicator system, particularly in career management. Besides the weakness of the support system for CPD, data point to the dominance of monitoring. Statistics also show contradiction between the central expectations towards teachers in Hungary and their belief in their professional development.

Keywords: teachers continuous professional development, model of CPD, teachers belief in CPD, career management

INTRODUCTION

Several factors point out the significance and complexity of the problems in education (Dawson & Leytham, 2020; Luján, 2021). Similarly to the international situation, domestic researchers also established that (1) Hungarian students have underperformed

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in domestic and international competency measurements for years (Balázs et al., 2010); (2) It is now evident that teacher professionalism is significantly related to student performance (Darling-Hammond, 2000; Jackson et al., 2014). (3) Being a teacher is not considered an attractive career in Hungary (Kárpáti, 2008; Chrappán; 2010). Based on these factors, the question arises is that feasible to model the CPD and use it for further research? How committed Hungarian teachers are to their professional development? Is there a significant difference between teachers in Hungary and those in other countries concerning the attitude towards continuous professional development (CPD)?

In order to fill this gap, ELTE University researchers developed a multidimensional framework and indicator system (TFM) for the professional development of teachers, within the framework of the MoTel research project. The present research is intended to demonstrate the suitability of TFM.

CPD in literature

The source of the initiative to develop and renew the content of the teaching profession is not the educator but the wider system that provides the context of the teacher's activity. In the current theoretical framework, accountability is the focus (Evetts, 2011; Evans, 2014; Sachs, 2016), which makes the work of the educator “visible” through various standardization efforts.

The resulting culture of achievement (Evetts, 2011; Sachs, 2016) necessarily shapes the content of the profession. Learning starts, therefore, under the influence of an external set of motivating, supportive and controlling expectations. Some interpretations also attribute stronger legitimacy to the organizational profession. They believe that its content is determined by a broader, higher professional "authority" thinking on the system level, thus creating a clear set of expectations that make the work of educators accountable (Evetts, 2011). In the effects of the organizational profession it is also recognized that the frameworks thus created can be interpreted as support (Evetts, 2011; Sachs, 2016). The systems surrounding the individual thus have a dual effect, and their effectiveness depends on the accordance of this control-support activity (Evetts, 2011). However, this accordance may be a requirement in the relationship between the individual and the systems, as the educators can only develop themselves effectively and autonomously (and thus their organization and the entire public education system) only if the environment that determines and influences their development does not counteract its aspirations (Evetts, 2008).

The inefficiency of most professional development programmes is due to the failure to take into account the professional motivation of teachers and the process of change. Clarke & Hollingsworth (2002) describe teacher professional development as a complex, individual, natural and continuous learning process. The building blocks of the model are (1) external information or resources (2) personal field (teacher knowledge, views and attitudes), (3) field of experience and practice, and (4) field of results. Change can start in any field and change in any of the fields can lead to change in another field through the mechanisms of reflection. The model recognizes the importance of the context that sets constraints and affordances.

According to Evans's (2014) conceptual model of PD (professional development), professional development is the process by which individuals' professionalism is sustained. The concept of professionalism is primarily about "how individuals exist as practitioners of a profession", that is, what, how and why they do, know and confess. He seeks to capture this in three components: (a) the behavioural component is made up of the process, process, productive and competence dimensions, (b) the attitude component is perceptual, it consists of evaluation and motivation dimensions, and (c) the intellectual component is the epistemology of all. Hodkinson & Hodkinson (2005) identified national and school leadership, political and regulatory frameworks as well as interventions (e.g. achievement measurement systems) among the three key dimensions that determine the effectiveness of teacher learning. (Rapos, 2019. 20)

In Opfer & Pedder's (2011) model, the system of learning activities includes the learning activities, tasks and practices in which teachers participate. "Collective views and decisions about school-level learning have a profound effect on individuals' views and decisions, and they strongly determine access, support and incentive for the learning activities they choose." (Rapos, 2019. 21).

According to Desimone & Pak (2017) there is a consensus on the characteristics of effective CPD: the content element (activities focusing on how learners learn); active learning; coherence (with the teacher's current knowledge and school/state policies); duration and collective participation (Rapos, 2019).

In the background of current educational challenges, in particular, the expectations of quality renewal of teachers can be identified. The specific aspirations of national education policies illustrate to find solutions to global problems in a unique context.

One of the most significant educational policy developments in Hungary in recent years was the introduction of the teachers' career model for ISCED 0-1-2-3 in 2013. The career starter is the Trainee, who carries out his professional duties for two years with the support of a mentor, and after a compulsory certification exam enters Teacher Category I. Teachers in Category I. have a minimum of two and a maximum of nine years of professional experience. A long-term pursuit of the profession is a prerequisite to reach Teacher Category II. The highest levels of the teaching profession are embodied in the category of a Master Teacher with at least 14 years of professional experience and of a Research Teacher with a scientific qualification who carries out research activities. Despite the continuous adjustments of the career model it has not become popular since the launch of the teacher qualification system. (Lunczer, 2018).

The TFM

A theoretical framework model (TFM) developed within the framework of the MoTeL research project primarily aimed for exploring the national goals and expectations related to the professional development and learning of teachers, the tools providing support to achieve them and the control functions concerning them in the analysed strategic and legal regulatory documents. (Figure 1).

As a result, a multidimensional framework and indicator system for the professional development of teachers was developed, which helped the researchers to identify the environmental problems of the regulatory system.

Based on the analysis, it was concluded that the three pillars mentioned above are not equally identifiable with the professional development of teachers in the Hungarian system environment (Figure 1).

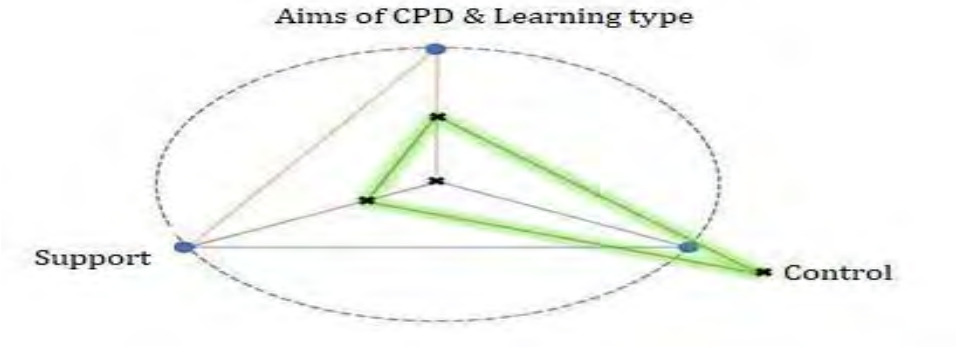

Figure 1
Professional development of teachers in Hungarian regulatory documents

The purpose and forms of learning as well as the processes and operational elements of support are unstressed and underdeveloped for the control system (school control, self-assessment and certification) regulated in all thoughts. The ratio shift between the pillars necessitated a review and modification of the TFM.

Figure 2
TFM and its indicator system with the dominance of control function

Finally, the model *includes* four dimensions (Figure 2), which are the purpose of CPD, the learning process implemented for CPD, the system that supports and monitors CPD. Each dimension captures the regulatory environment in terms of conditions it creates for

the professional development of teachers. Indicators to point the characteristics were assigned to each dimension. Considering that TFM would be used for large-sample national teacher research, the Hungarian-related data of the published TALIS 2018 provide significant help in verifying the model.

Hypotheses

Hypotheses were formulated along the four dimensions of TFM (i.e. development goals; learning; development support system; control mechanisms) from the aspect of the currently valid system of environment regulators induce significant differences between domestic and foreign teachers in terms of CPD (Kállai et al 2016; Korthagen, 2017; Lunczer, 2018; Dawson & Leytham, 2020).

H.1: The need of Hungarian teachers for *professional development* (learning) significantly exceeds that of teachers in TALIS countries, because compliance with the career model as an external coercive factor poses more serious challenges than ever before.

H.2: The *dominant form of the learning strategies* of Hungarian teachers is the participation in the postgraduate courses and organized professional training, as the support system in Hungary prefers these.

H.3: The *shortcomings of the system supporting professional development* are felt more strongly among Hungarian teachers than in the TALIS countries because continuous mentoring or counselling focuses on the period of starting a career.

H.4: *Control* has a more significant effect on the professional development of Hungarian teachers than learning motivation or interest.

H.5: TFM is suitable to serve as a *starting point for large-sample pedagogical research* in Hungary. Its dimensions and indicator system can systematize the data collection and processing of the large dataset, and the second analysis of TALIS 2018 thematic data confirms it.

METHOD

To achieve the research goal, a mixed-method research design had been used, as the researcher team found it correct to compare the data of TALIS 2018 with the Hungarian subsample while carrying out the content analysis of central regulatory documents (legislation, regulations, guidelines) required for TFM authentication.

The third TALIS survey was conducted in 48 countries in 2018. This analysis of the teaching profession (TALIS 2018) rests on five pillars: "The knowledge and skills required to teach; the perceived prestige of the profession; career opportunities; the collaborative culture among teachers (OECD, 14.09.2019).

In the sample of TALIS 2018, the countries are represented by 200 school leaders and 4,000 teachers based on random selection. Participants in the survey are educators at ISCED level 2. The database contains data from 3245 teachers and 182 principal from Hungary (OECD, 2019.b. 6).

TALIS 2018 research structure and results allowed TFM to be embedded not only in a domestic but also in an international context. Although TFM is based on the content analysis of Hungarian regulatory documents while TALIS 2018 uses quantitative data, their comparison can also point out the noticeable effects of recent Hungarian education policy measures and the causal backgrounds of some Hungarian-related data in TALIS 2018.

As the TALIS data on the knowledge and skills required to teach have been published, thus providing an opportunity for a statistical second-analysis of these according to TFM in Hungary. The secondary statistical analysis allows only joint investigation of the areas in which the TFM can represent the research concept of TALIS. These areas are included in the relevant sets of questions in the TALIS 2018 questionnaire as professional characteristic and pedagogical practise.

In the current research, a *thematic identification of TFM and the TALIS 2018 teacher questionnaires* was first performed to fit the questions of the TALIS questionnaire into the structure of TFM using content analysis and to allow filtering of the grouped quantitative data from OECD online database. Researchers created two groups for the *statistical comparison* i.e. the group of Hungarrian respondents and the other TALIS respondents from 47 countries.

Then, proceeding by the dimensions of the TFM, statistical comparisons were made between the answers of Hungarian teachers and the teachers of the TALIS countries to the questions of the topics on each dimension. This method enabled to supplement of the TFM indicator system and to identify early-stage effects of national education policy regulations underlying the TALIS results. The comparative statistical analysis included *frequency distributions, standard deviations, Chi-tests, and regression analyses* of subsamples. The calculations were performed with SPSS software.

Research Sample

In 2018, the basic population of ISCED 1-2 teachers in Hungary was 77 093 (KSH, 2020). So, the findings in present study are based on the 3245 (ISCED 2) Hungarian respondents as TALIS *stratified random sample*. Therefore, the researcher team might use these two subsamples (Table 1) for the comparative statistical analysis.

Table 1
Research subsamples

	HU (average 47,6 years)	TALIS-47 (average 43,4 years)
Number of respondents	N= 3 245	N= 258 181

The construction goal of the TFM was to theoretically explore the CPD of Hungarian teachers (ISCED 0-1-2-3), which is different from the goal and target group of TALIS 2018 (ISCED 2). Because of the significant number of Hungarian items (N= 3245) in the TALIS 2018 sample the difference does not exclude justification of the dimensions and structural elements of TFM.

FINDINGS

TFM Dimensions and Indicator System in the Light of Talis 2018

The TFM indicates the goals of professional development by the career picture, targeted development activities and their results. The content analysis of the TALIS tool highlighted the necessary additions to the existing indicators. Although some of the TFM indicators are not in line with the TALIS teacher questionnaires, it had to be analysed the TALIS tool for heads of institutions as well. The interfaces of the model and the two types of TALIS devices (teachers & principals) are shown in Figure 3, with green bubbles indicating necessary additions to the TFM.

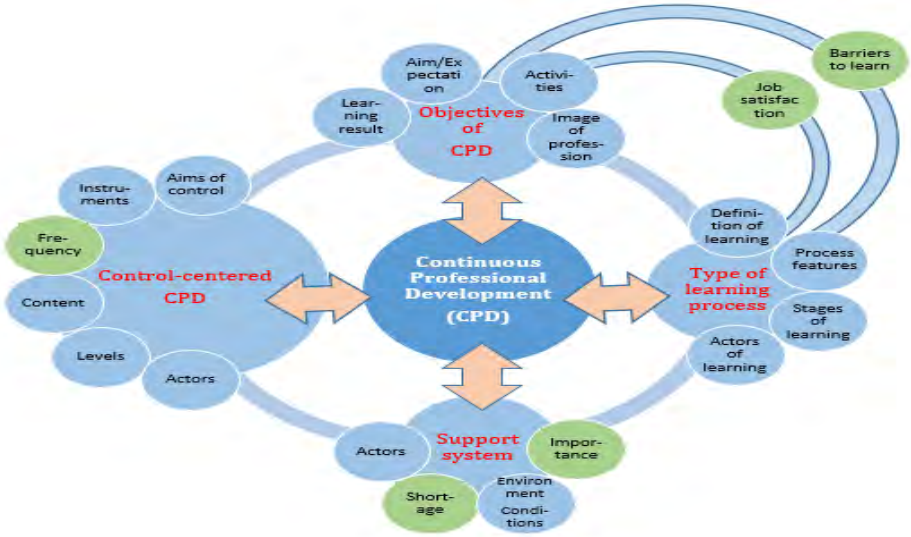

Figure 3
Interfaces between TFM and the two types of TALIS tools

There is a significant correlation between professional satisfaction and national affiliation [(χ^2 (1) = 335,665, p <.001, Cramer's V = 0.048)], which supports the necessary addition of professional satisfaction to the indicator system of the TFM. It refers to that each of the four dimensions must be associated with new indicators. (Figure 3)

Professional Development as a Learning Process and Outcome

Effective professional development is structured professional learning that results in a change in teacher competence and practice and the development of students' learning outcomes. Teachers' learning is influenced by cognitive, affective, and motivational factors as well. This suggests that all genuine learning activity can start only from the individual and that research, therefore, needs to pay more attention to the affective, motivational conditions that determine teacher development, as they are the actual

engines of learning (Darling-Hammond et al., 2014; Korthagen, 2017; Yaakob et al, 2020).

How prepared do Hungarian teachers feel to practice their profession? Statistically [F (3,138 449) = 26,431, p = .000] it was proved that, except for the first decade spent in teaching, Hungarian teachers consider themselves to be significantly more prepared compared to their foreign colleagues. If the belief of teachers in TALIS 47 countries about their preparedness is considered as a benchmark (Figure 4) it can be noted that 25% of *Hungarian teachers consider themselves better prepared* than their foreign colleagues participating in the study. Correlation between assessment of preparedness and national affiliation [χ^2 (3) = 75.253, p <.001 Cramer'sV = 0.023; Gamma (γ) = -0.079] was confirmed. Hungarian teachers feel the lack of their competence in only one field namely teaching multicultural or multilingual groups. (Figure 4)

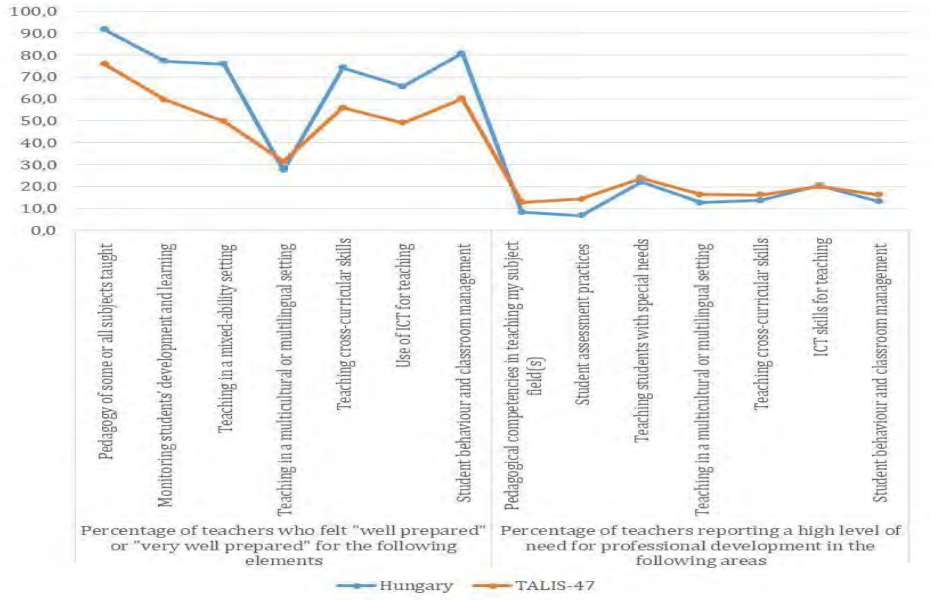

Figure 4
Professional preparedness and development needs in different areas

The hypothesis (H.1), in which it was assumed that the need of Hungarian teachers for professional development significantly exceeds the needs of teachers in TALIS countries, *could not be statistically confirmed*. Levene's test showed the equal variances except of teaching students with special needs (F = 0.122, p = 0.727) and teaching in a multicultural or multilingual setting (F = 2.250, p = 0.134). The independent samples t-score showed significant differences between subsamples except behaviours and classroom management [t (3295) = 1.541, p = .123].

However, there was found another surprising set of data. While only 77.2% of Hungarian teachers feel well or very well prepared in the field of monitoring student

development and learning, only 6.8% want to improve in student assessment practices. 65.7% of Hungarian educators consider themselves as prepared for the use of ICT in teaching, but 20.5% claim it is important to improve in this.

Effort in CPD is related to national affiliation [χ^2 (1) = 4.246, p = 0.039, Cramer's V = 0.004]. It can be seen that in Hungary online courses and forms of network learning are less common, while more people read literature than in TALIS countries. (Figure 5)

Figure 5
Fields of professional training

*Hypothesis (**H.2**),* stating that the dominant form of the learning strategies of Hungarian teachers is participation in postgraduate training and organized professional in-service training *was not statistically proven* [χ^2 (1) = 478,977, p <0.05, Cramer'sV = 0.043]. (Figure 5)

Finally, it can be concluded that the low social prestige of the career elicits a kind of self-justification from practitioners. They are expected to feel the need to develop – in the field of multicultural and/or multilingual learning groups – where they feel less competent.

Supporting CPD

Behind the similarities of approaches and objectives on the EU level, there are huge differences in practice. The influence of national educational traditions and cultures prevails, and therefore the implementation of the same educational policy goal is followed by very different practices in each country (Černak & Beljanski, 2021).

The induction activity for new entrants includes opportunities for horizontal learning, provided that it is supported by the particular institution and the education system. By analysing the regulatory documents for TFM, it is shown that the system of supporting the CPD of Hungarian teachers is not sufficiently elaborated, in contrast to the detailed description of the control system. The mentor's qualifications, as well as supervisor activity records and responsibilities in preparing the intern for the internship exam, are not properly regulated. TALIS data prove that institutions in Hungary are unlikely to consider new graduates as interns, probably due to increasing teacher shortages, meaning trainee status is not real career socialization. Analysing the characteristics of the participating subsamples in formal and informal induction activity, a significant correlation was confirmed with the national affiliation [χ^2 (1) = 724.103, p <.001, Cramer's V = 0.070].

As there are very few early-stage teachers in Hungary, it is no wonder that a significant number of respondents has not participated in mentoring programmes, since the introduction of mentoring programmes affects early-stage teachers of the last decade (Nopriyeni, Prasetyo & Djukri, 2019). This is also supported by the statement of the heads of institutions (Figure 6), according to which in Hungary two and a half times as many heads of institutions indicated that the mentoring programme is open to new graduates and through this, they socialize into the profession.

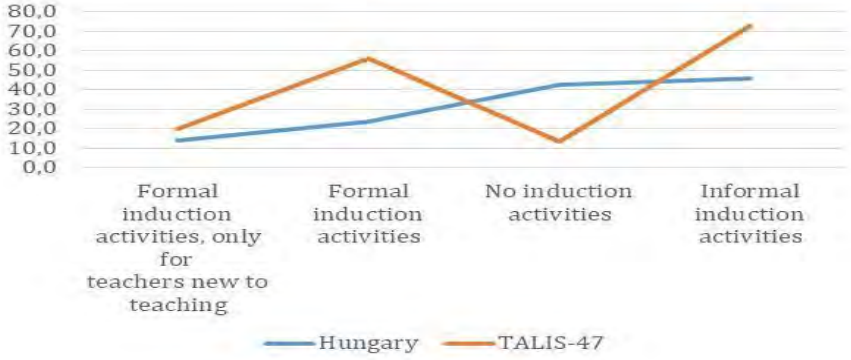

Figure 6
Stakeholders about the mentoring programmes

Nearly half of the Hungarian teachers (Figure 6) did not participate in any induction activity. One-fifth of them were involved in a formal type and only half of the respondents report informal induction activities. 2013, the year of legislative introduction of the induction programmes, may provide evidence for the explanation of this phenomenon.

Unfortunately, it was impossible to make a comparison in two fields (Barriers to teacher participation in professional development and support provided to teachers participating in professional development), because there are no Hungarian answers to these questions in the teachers' dataset of TALIS 2018. Therefore, we tried to find data in the

responses of headmasters on how they perceived obstacles to development and the support system. (Figure 7)

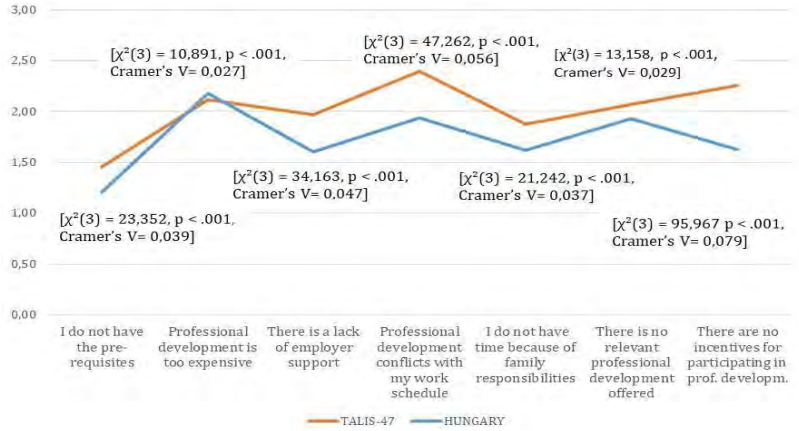

Figure 7
Opinion of the heads of institutions on the system supporting CPD

The most important values of mentoring according to the *heads of institutions* are the development of teacher (pedagogical) and collaborative competences (Figure 8). This opinion emphasizes the importance of preparing for the internship exam as the examining board assesses the level of teaching competencies during the procedure.

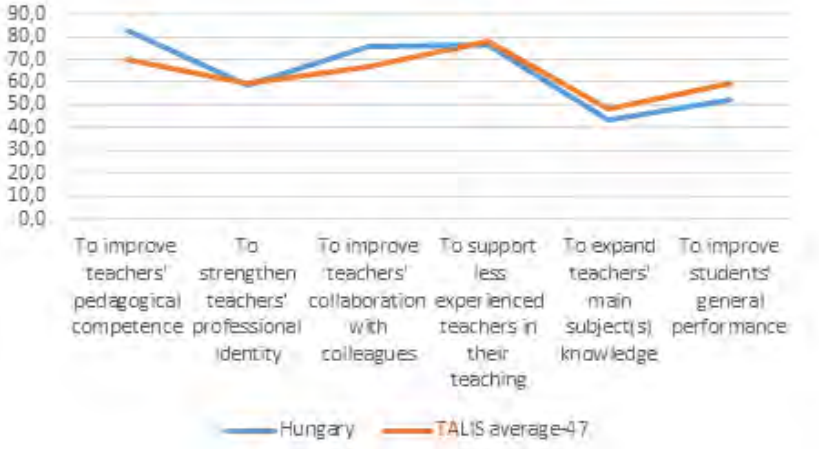

Figure 8
The most valuable elements of mentoring according to the heads of institutions

As a value in the mentoring process, strengthening the candidates' professional identity, expanding their subject knowledge or improving the general performance of students is

less important according to Hungarian school leaders, unlike other TALIS 2018 participants (Figure 8). *Consequently, our statement about Hungarian regulatory documents (TFM) that monitoring professional* development *is more important than supporting it is confirmed* (H.3).

Our statistical calculations (Figure 8) indicate a significant correlation with national affiliation in all examined fields. The gap between the two subsamples on the following issues is of particular importance: There is a lack of employer support or there are no incentives for participating in CPD.

Monitoring System for CPD

While constructing the TFM it became clear that in Hungary the central documents represent a definite control intention of the legislature. Comparing the TALIS 2018 data series with the answers of the Hungarian respondents, it is statistically proved that significantly more ($\bar{x}$=32,7%) Hungarian teachers receive feedback on their activities than in the TALIS countries ($\bar{x}$ =28,1%) (Figure 9).

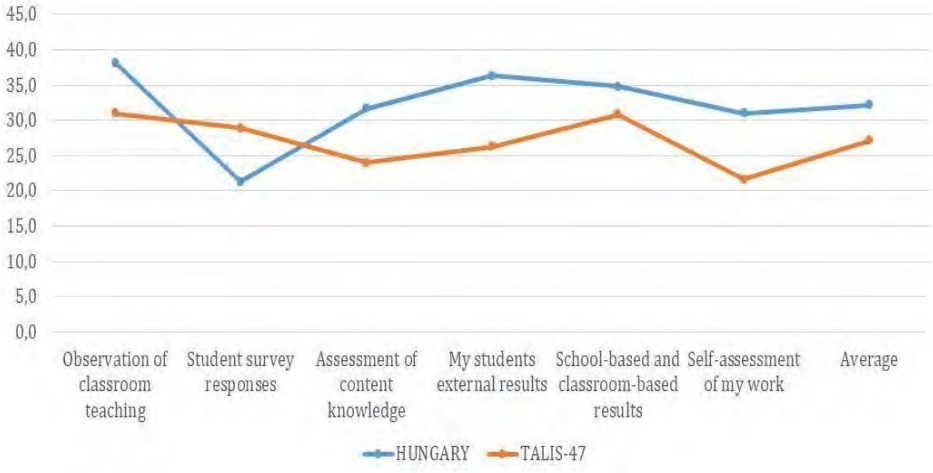

Figure 9
Subject of feedback

A significant correlation was found between national affiliation and self-assessment of the work in the case of external individuals or bodies [χ^2 (1) = 1772,702, p <.001, Cramer's V = 0.085]. However, it can be underlined that Hungarian teachers also receive feedback from the heads of institutions in most cases.

Since *there was not find any correlation*, the assumption cannot be substantiated that *control has a more significant effect on the professional development of Hungarian teachers than learning motivation or interest* (H.4).

Review of the TFM

The outcomes of the study on dimensions of TFM induced addition with some new indicators. Figure 10 shows the present state of TFM. The expansion of the control factor was necessitated by its dominant position in the Hungarian system. Indicators marked in green represent the new aspects of analysis as a result of the research.

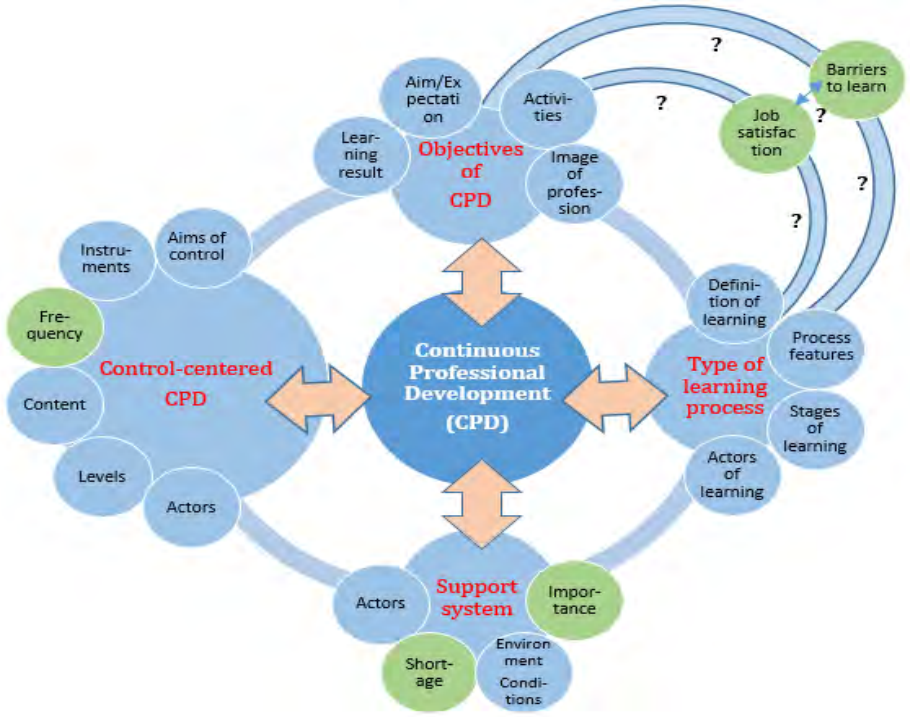

Figure 10
The corrected TFM

As the professional satisfaction has been incorporated into the dimensions of the TFM as a new indicator (Figure 10), we examined whether it relates to the needs of CPD. In the TALIS countries, results are correlated [χ^2 (1) = 134.287, p <0.05, Cramer'sV = 0.023], but for Hungarian respondents χ^2 (1) = 0.092, p = 0.761, Cramer'sV = 0.0761] complete independence was demonstrated between the variables.

Hypothesis (H. 5), stating that *TFM is suitable to function as a starting point for large-sample teacher research* in Hungary has been confirmed with the *above-mentioned corrections and metadata of H.1 - H.4.* Its dimensions and indicator system are indeed able to systematize filtering and processing of large datasets, as it is supported by the Hungarian-related findings through the secondary analysis of the TALIS 2018 data.

DISCUSSION

Traditionally, perspectives for the CPD of teachers require the systematic presence of at least three factors in a coherent, mutually supportive way: *(1)* clearly defined conceptual goals, expectations (learning outcomes) (Černak & Beljanski, 2021), *(2)* supportive learning processes that help meet expectations (Buatip, Chaivisuthangkura & Khumwong, 2019; Nopriyeni, Prasetyo & Djukri, 2019), and *(3)* a system for monitoring and evaluating the results (Evetts, 2011). The TFM presented in the study aims to complement the previous three classic factors with an intensifying paradigm of professional learning. Therefore, the researcher team undertook to prove five hypotheses to obtain evidence of the Hungarian and international embedding of the four-dimensional structure and indicator system of TFM.

Kállai, Sági & Szemerszki (2013) stated that, in Hungary, those under the age of 30 and those over the age of 50 participate in further training less often than others. The researcher team assumed that due to the newly introduced qualification system in Hungary, the attitude towards CPD generally changed, however, it could not statistically be confirmed that the motivation of Hungarian teachers for professional development significantly exceeded.

According to a recent study, one quarter of the teachers involved (N = 296) refuses postgraduate courses while three quarter of the respondents accept them (Simon & N.Tóth, 2016). It was not statistically proven that the *dominant form of the learning strategies* of Hungarian teachers is participation in the postgraduate courses and organized professional trainings, although the support system in Hungary prefers these.

Data of this research proved that the *shortcomings of the system supporting professional development* are felt more strongly among Hungarian teachers than in the TALIS countries because continuous mentoring or counselling focuses on the period of starting a career. Many researchers (Kárpáti, 2008; Rapos et al, 2020) claim that a "teacher-centred support is needed" in Hungary.

The researcher team assumed that the control has a more significant effect on the professional development of Hungarian teachers than learning motivation or interest because the introduction of a career model was thought to have the expected effect. Although if the content description of professional knowledge is formulated only at the level of expectations from the teacher's point of view it appears in the control function and it can also become a barrier to professional development. (Simon & N. Tóth 2016; Rapos et al, 2020)

While developing the TFM as a theoretical model of CPD, it was concluded that the rapid successive educational policy arrangements of the last decade have imposed a burden on the teachers, which has not increased the attractiveness of the career but rather it can lead to its decline in the long run (Chrappán, 2010). TFM is suitable to serve as a *starting point for large-sample quantitative research* in Hungary. Its dimensions and indicator system can systematize the data collection and processing of the large dataset, and a second-analysis of TALIS 2018 thematic data confirmed it.

CONCLUSION AND LIMITATION

The researcher team could not prove all of the hypotheses in the international environment but certified that TFM is adequate for data collection and processing with a little supplement. Based on the correlation analysis of the TALIS data with the TFM developed by the research group it can be concluded that the beliefs of Hungarian teachers differ in many respects significantly from the views of their foreign colleagues (i.e. professional preparedness; career image; social prestige of the profession; career opportunities; the retaining power of the profession). Due to the burden of the detailed Hungarian control system on teachers, the ageing Hungarian teacher population also accepts the need for professional development, regarding the recent drastic educational policy interventions in the system environment (introduction of the teacher career model, certification system.

*There is a significant difference among teachers p*edagogical beliefs about career choice and career retention suggest that unprecedented pressures (*expectations, compulsion to conform*) on professionals harm career popularity, motivation for CPD and career satisfaction. As a self-justification of the profession due to the low prestige of the profession, *Hungarian teachers, except for one field (teaching in the multicultural environment), consider themselves to be significantly more competent than TALIS-47 professionals*, but still do not focus their development needs on this deficient field. The contradiction may lie behind the compulsion to conform as they seek to prove the opposite of what society conveys to them.

What is hidden behind the opinion of the heads of institutions about the functions of the professional development (mentoring) system – that its most useful element is the development of teacher (pedagogical) competences – is the teacher qualification system, namely the obligate acquisition of teacher degrees as an unbearable burden for many professionals.

In this research, unfortunately, an extensive and comprehensive comparison of the TALIS questionnaires was hindered by the lack of Hungarian-related data in the TALIS database for many issues relevant to the depth of analysis (e.g. Support provided to teachers participating in professional development; Total support provided to teachers participating in professional development, by school characteristics).

The correlation between TFM indicators ‘Job satisfaction’ and ‘Barriers to learning’ *requires further investigation* because their emergence as an analytical aspect is undoubted, neither the previously examined Hungarian documentation nor the TALIS 2018 research made this possible (See Figure 10).

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