Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 6, 1931-1941
2025
Publisher: Learning Gate
DOI: 10.55214/25768484.v9i6.8279

Teacher motivation and its impact on the quality of education especially in disadvantaged areas: Challenges and opportunities for education policy

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Abstract: Teacher motivation is a crucial component of educational quality and sustainability. In the face of 21st-century global challenges—including teacher shortages, digitalization, and increasing student diversity—the professional role of teachers is undergoing significant transformation. This study explores teacher motivation within disadvantaged educational environments, focusing on its drivers, consequences, and the implications for educational policy. Based on qualitative interviews with 24 practicing teachers, analyzed using Atlas.ti7, findings show that motivation is shaped by both intrinsic factors—such as self-fulfillment, a passion for teaching, and student-centered commitment—and extrinsic factors, including salary, career progression, social recognition, and institutional support. A lack of motivation significantly impacts teaching effectiveness, increases burnout, and leads to higher attrition, particularly in early career stages. Teachers with low motivation are less likely to apply innovative methods, show less responsiveness to student needs, and often contribute to weaker learning outcomes—especially detrimental for disadvantaged students, as it amplifies educational inequality. Furthermore, low motivation reduces collaboration among teachers and limits the school's adaptability to external changes. The study highlights the urgent need for policy interventions aimed at strengthening motivational resources, particularly in vulnerable educational contexts, to ensure equity, retention, and long-term resilience in education systems.

Keywords: *Educational policy, Educational quality, Teacher motivation.*

1. Introduction

The social and economic problems following the turn of the millennium must be answered by many areas, including education and research. The international competitive environment has taken on an even more pronounced form, so governments, the economy and education must adapt to all this together. During the globalization process, with regard to the knowledge economy, it can be observed that international innovation systems show development [1]. Adaptation, however, imposes a more significant requirement on those countries whose industry and education strategies are less innovative, and the actors in these fields have a weaker ability to cooperate [2]. The challenges of the 21st century, such as sustainability, globalization, digitalization, have opened up the opportunity for new areas of innovation. Education for the knowledge-based economy of the 21st century, as well as for the sake of a competitive society, it is the priority task of all actors in education to develop competences with the help of which employees with a modern, open-minded attitude and the ability to cooperate can become the driving force of development for all sectors of the labor market. All of this demands and results in the renewal of educational content and structure. Many countries in the world are facing this challenge, but improving the economic competitiveness of our country at the international level cannot be achieved without significant changes in education. Thanks to this, innovation policies are increasingly playing a prominent role in national development strategies, individual sectors are creating independent sectoral innovations. Examining the national innovation strategies, it is clear that they are present as a significant segment of economic and social development, and for the sake of development, internally

History: Received: 21 April 2025; Revised: 5 June 2025; Accepted: 10 June 2025; Published: 21 June 2025
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generated innovations within the education sector receive special support [3]. The comparison of the innovation performance of individual countries is present as an important indicator in domestic and international literature, which is monitored by several international publications - Global Innovation Index Report, Bloomberg Innovation Index Report, Innovators European Innovation Scoreboard, UNESCO's innovation statistics - which also indicates that the development of innovation activity is also of particular importance in an international context [4].

In recent decades, social transformation has confronted educational systems with a number of challenges that cannot be handled with traditional organizational, content, and methodological solutions. After the turn of the millennium, significant attention was paid to educational innovations. Schools all over the world are looking for new ways to improve their educational programs and improve student achievement. In 2010, the ministers responsible for public education of the OECD countries stated in a joint statement that innovation plays a decisive role in improving the effectiveness of the public sector. The key to the effective functioning of the education system is a good teacher. This is supported by the OECD research and action plan entitled "Teachers Matter" [5] which aims to attract teachers who are committed to quality education. It is important to notice that uniform answers cannot be given to deal with problems in the world of education. Taking special regional and local needs into account is essential for student success.

The starting point of theories dealing with innovations can be considered the concept of Schumpeter, who examined the phenomenon in the context of economic development. Other theories consider the role of diffusion to be decisive in the innovation process Rose [6]. Rogers [7] interprets innovation as a decision-making process. He assigns an important role to the individual, who, after acquiring knowledge about the innovation, undergoes an attitude change, as a result of which he makes an acceptance or rejection decision and promotes the spread of the innovation, involving other actors in society. The social acceptance and spread of an innovation also depends on the benefits it brings to potential users. The initial stage of diffusion research was marked by the spread of cultural changes in society. We can also observe the relationship of diffusion models with communication theory, in which interpersonal relationships are of great importance. At the societal level, during community learning, the community facing challenges finds the appropriate information regarding a given problem, while renewing itself and its environment. An overlap can be observed between social innovation and changes in education, as social aspirations coming from below change the face of schools, local needs become decisive in Europe even in those education systems where the centralized educational policy direction was previously dominant in recent decades [8]. Local communities [9] and educational institutions respond to solving social problems. Educators and pedagogical communities responding to challenges seek new ways to solve problems, thereby creating educational innovations that are disseminated within and outside the institution through networking.

In terms of Europe's teaching society, there are significant vacancies, and the number of elderly, near-retirement and retired teachers is also significant. All of this can be offset by the increase in the number of young people choosing teacher training. Signs of the shift are already noticeable, but the popularity of the teaching profession among young people choosing the career is still important. The fluctuation experienced in recent years has further complicated the professional operation of the profession. The strengthening labor market trends of recent years have not left the teaching profession untouched. In addition to professional knowledge, the acquisition of skills and abilities has come to the fore, which, beyond academic knowledge, enable the employee to cooperate inside and outside the school, even across national borders. The teaching career requires increasingly complex knowledge and skills from the employee. Furthermore, developing and utilizing collaborative skills is associated with teacher retention. Collaboration can help teachers become committed to their school and their teaching career, which strengthens their retention [10, 11].

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2. Theoretical Background

The international educational environment of the 21st century faces a number of complex challenges, such as adapting to global labor market expectations, ensuring equal access, and improving the quality of education for all social strata. Amidst these complex challenges, the role of teachers is decisive: they are the backbone of the education system, directly shaping the learning process and indirectly the future of society. In light of this, examining the motivation of teachers is not only relevant at the individual or institutional level, but also has strategic importance for education policy. Nowadays, it is increasingly becoming important how knowledge can be spread in space and time in the spirit of lifelong learning in order to achieve sustainable development in the long term. The structure of the education system and the characteristics of its progression are influenced by economic factors, social needs, and educational policy reforms, which have a negative impact on the level of education and employment of the population, and on the development of social differences. The competitive challenge of today's modern societies expects the education system to adapt quickly to innovations. In the global economy, effectiveness is mostly identified with the best-performing and fastest-developing education system. The education systems of countries are also looking beyond their borders for the most successful and effective solutions [12]. The question arises as to what potential educational systems responsible for investing in human capital have.

The fundamental condition for the development, spread and survival of innovation within an institution is the attitude of teachers towards innovations. Every change in a school requires a change in the attitude of the teachers of the institution [13]. If teachers are not committed to change, innovation cannot be integrated into the operation of the institution and only initiates temporary, slowly fading processes. Teachers' commitment to learning and the operation of knowledge sharing among themselves are also of great importance. Trust within the organization ensures that teachers are open to sharing their knowledge and want to learn from their colleagues. Due to the social, economic, technical and IT changes of the 21st century, continuous skill development, cooperation and strengthening of professional relationships within and outside the walls of the institution are essential for teachers. A collaborative or cooperative professional culture can be considered a behavior where teachers work in cooperation aimed at their professional development, regularly give each other constructive feedback, share their good practices and jointly try to find solutions to problems that arise during their work. The importance of professional cooperation in the Hungarian education system is also confirmed by the fact that it has been included in the qualification criteria of the teacher career model's promotion system. "Teachers matter," reports the OECD in its 2005 report, which states that 'teacher quality' is a variable that influences student performance.

Hanushek, et al. [14] draw attention to the fact that the difference in performance between schools is mostly due to differences in teacher quality. This is also confirmed by the McKinsey [15] which calls attention to the joint realization of three factors for the good performance of the education system, which emphasizes the quality of teacher work: the right people should be oriented towards the teaching career, they should become effective teachers during their training, and everything the system provides the highest quality education for the child. Hargreaves and Fullan also highlight in their professional capital theory that human, social and decision-making capital, which can also be applied to the teaching profession, is decisive for school effectiveness. Human capital means the sum of individual qualities, knowledge, and skills. Social capital refers to the resources in the relationship system, with a special emphasis on cooperation. Decision-making capital is a resource derived from gaining professional experience alongside experienced colleagues doing quality work. In addition to professional knowledge, the ability to cooperate is emphasized, as teachers must constantly make decisions in response to complex situations. Individual professional problem solving goes beyond the current situation, the teacher innovates, and thus makes a professional decision that is able to see the phenomena in a system beyond the one-time current problem solution, and to offer the acquired knowledge to others. Teacher effectiveness can therefore be derived from a complex capital model: the expansion of professional capital includes the acquisition of knowledge and skills (human capital), participation in networks of

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collaborative learning communities (social capital) and the ability to make professional decisions frequently (decisional capital).

For a country to achieve long-term results in the field of education, education cannot be viewed as a short-term investment, hoping for an immediate return, with only minimal expenditure planned. The key to the efficient functioning of the education system is a good teacher, who, with his/her appropriate professional knowledge, network of relationships between people and appropriate decision-making skills, is able to increase the human capital of the population as a long-term investment from early childhood education through lifelong learning. The quality of teaching work therefore has a significant impact on the success of students. Based on Hargreaves and Fullan [13] theory of capital applicable to the teaching profession, professional capital can be described along the following components: teachers' human capital, social capital and decision capital. The third defining element of professional capital is decision capital. Teachers must constantly make adequate decisions that respond to complex situations. These decision situations require sufficient professional preparation and appropriate judgment. Decision capital can also be interpreted as a resource derived from gaining professional experience alongside experienced colleagues who do quality work. The teaching profession involves a complex work process where, in the spirit of professionalization, the teacher himself as a professional must be able to navigate a complex, dynamic force field carrying numerous interactions and make adequate decisions based on the set of tools at his disposal. Of the three elements of professional capital, decision capital is the weakest in the domestic environment. The growth of the school's professional capital mostly occurs by feeding human capital. In the absence of new resources, i.e. without increasing social and decision capital, it carries the risk of human capital being exhausted.

It is a fact that the work of the teacher is very important, it has a great impact on the success of the students. Since competitiveness and the sustainability of knowledge-based societies are prioritized both on the international and domestic scene, there is an increase in the value of education, the key players of which are teachers. In possession of their human capital, they are able to react to changed situations with the help of their decision-making capital during their professional cooperation. Their continuous professional development is the source of their motivational base that can be activated. In addition to professional development, the literature links teachers' motivation to the existence of many other factors, separating external (extrinsic) and internal (intrinsic) motivations.

Internal (intrinsic) motivation can be identified with an internal tendency to seek novelty and challenge. During external (extrinsic) motivation, some sending factor plays a role in the motivation of the behaviour. In the case of both types, individual (individual) and motivational factors related to the teaching profession can be identified. Individual internal motivations include altruistic motivation: social contribution, the social shaping role of teaching, the self-rewarding nature of the career, self-realization, knowledge transfer its inherent beauty and the creation of lasting values. Factors of internal motivation related to the teaching career: the joy of working with children, helping students to achieve their success, having an impact on students' lives, the the joy of dealing with people. Among the individual external motivations, we find the possibility of professional development and building an intellectual career, compatibility with family and private life. The external motivational elements of the teaching career include positive experiences related to previous teaching, employer expectations and factors related to working conditions, a good faculty atmosphere, satisfaction with teaching work.

The question of this research is, which factors help teachers to make the decision to be able to make a professional decision, with the help of which their pedagogical problem-solving idea or ideas do not remain as isolated data, but are passed on to others. Furthermore, I investigated which factors can be identified as barriers to the development of innovations.

3. Methodology

During the domestic qualitative research, I conducted semi-structured interviews with teachers (24) teaching in secondary institutions in disadvantaged regions. I started recording the interviews in January 2021 and finished them in May. Life story narratives give interviewees the opportunity to look

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ISSN: 2576-8484
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DOI: 10.55214/25768484.v9i6.8279

back on the events of their own lives from the present, in the process of which they recreate themselves: they experience their own historicity in the defining events of their lives. Two prominent principles of empirical research are openness and communication. Communicative situations, such as observation and interview techniques, provide access to meaningful data. The advantage of semi-structured interviews is that they provide the opportunity for deeper, reflective responses to unfold, while also providing thematic frameworks for the research. The teachers' narratives provide insight into the formation of pedagogical identity, the sources of motivation, and how they experience their profession at the intersection of social and institutional expectations. The data is presented using verbatim quotes to support the exploration of connections.

The texts of the semi-structured interviews were subjected to a qualitative text analysis using the Atlas Ti.7 program. The method of content analysis made it possible to objectively analyze recurring motifs. Some sections of the text corpora were coded, but we did not intervene on the texts themselves. A mixed (inductive and deductive) procedure was used during coding. In accordance with the characteristics of the deductive theory-driven procedure, prior to the research, based on the examined dimensions, I developed the aspects that gave the code system of the later code network (deductive theory-driven coding). After that, I also applied an inductive procedure based on the mappings of the individual constructions of the life stories, the text segments belonging to the main codes were broken down, and subcodes were created (data-driven analysis). In accordance with the variable oriented/theme-centric analysis, I performed a classification along the research dimensions. In order to increase the reliability of the process, the main codes were coded twice (intracoding), the operation was carried out at different times according to the same logical system. According to grounded theory, we strive to create a dialogue between the data obtained during in-depth interviews. When analyzing the interviews, I focus on developing patterns. The exploration of similarities and differences is both important for grasping the phenomena. Based on grounded theory, research goes beyond the dense description of life stories, and we strive to study, compare, and systematize the investigated phenomena according to the category system of the previously established code network. In accordance with the principle of theoretical saturation, data collection and analysis takes place as long as the interviewees and the developed codes add some information to the research, and the codes still have explanatory power. When significant new information no longer appears, theoretical saturation is reached and the process of data collection, coding, and analysis is completed. According to Glaser and Strauss-theory, saturation is determined by the following aspects: the empirical limits of the data (information that can be relevantly extracted from the data), the density of the theory (a dense network of different categories and codes forming among themselves), the theoretical sensitivity of the analyst.

4. Results

First, I examined the texts expressed by the teachers who submitted the educational innovations using the text analysis program Atlas Ti.7. The presence of individual and work-related factors related to external and internal motivation revealed in the literature was observed in their case, and I also identified additional determining factors in the development of registered innovations Table 1.

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Table 1.
Motivational factors among those developing educational innovation.

Super factor	Factor	Subfaktor	Informative quote
Internal (intrinsic) motivation	Individual internal motivation	Career opportunities for teaching	"It was important to organize a program at school that interested me and that I could bring my children with me."(T12)
		Self-realization, variety	„I've always wanted what I do to be both interesting and effective.."(T20)
		Knowledge transfer	"It gave us a good opportunity to showcase our best practices in a project. I'm always excited about the delivery of the curriculum, how it all comes together."(T17)
		Inheritance of permanent values	"This was an opportunity, an opening of doors, an opening of windows to other schools, to other children, in a foreign language, but representing national cultures."(T13)
	Internal motivation linked to work	The joy of working with children	"It was important to me to make learning experiential, so that it was not seen as learning, but as an experience."(T16)
		Helping students achieve success	"I, those I was able to motivate, entered competitions and achieved success." (T24)
		To have an impact on students' lives	"Everything was done to motivate the children and prevent them from dropping out of the system." (T13)
		Possibility of parental contact	"(…) we also invited parents, or students in lower and higher grades, siblings, so from that perspective it was very important."(T21)
		Promotion of the school	"(…) we opened precisely to influence school choice, so that when we have an open day, we perform the best plays and they can watch them."(T19)
External (extrinsic) motivation	Individual external motivation	Opportunity for professional development	"Because I did so many things in school, it taught me a lot and also fostered my openness to innovation. You always had to invent something."(T15)
		Keeping a job	"The principal really encouraged all of us to participate in the work. (…) She made us do everything, there were times when I didn't like it because there was so much work involved, but she said, believe me, there is competition and you have to meet the expectations too."(T19)
		Financial benefits	"In the years after the change of regime, inspiration was available, and the background for this was created in terms of both training and financial resources." (T21)
		The possibility of building an intellectual career	"Meanwhile, we were also developing a relationship with Lower Austria. In Vienna, I was also able to meet the minister in connection with a delegation (…). At that time, they connected us with the experts, and I represented the education sector (…)."(T15)
	External motivation	Positive experiences related to previous learning and teaching	"After that, I had an idea, with the help of which we broke out of the school walls, and practically anyone from the entire

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	linked to work		country and beyond our borders could access it." (T23)
		Employer expectations	"The school management was open and innovative. It opened up opportunities for teachers through applications that they could take advantage of." (T16)
		Employer support	"The institution's leadership agitated very strongly."
		Professional contact with other institutions and organizations	"After I started attending trainings and workshops at civil organizations, I learned methods there that I could then bring to school." (T15)

Internal individual motivational factors confirmed in previous research results were identified during our investigation: the rewarding career nature of the field, the need for self-realization, variety, the natural beauty of knowledge transfer, the transfer of lasting values, the joy of working with children. In the case of work-related internal motivational factors, in addition to helping students achieve success and influencing their lives, the interviewees attributed an important role to the possibility of parental contact and the promotion of the school. Among the external individual motivational factors, we identified the possibility of professional development, the important role of job security, the importance of financial benefits and the possibility of building an intellectual career. In the case of work-related external motivational factors, the interviewees considered the role of positive experiences related to previous learning and teaching, the stimulating role of employer expectations and employer support to be important. Furthermore, we identified another motivational factor in this circle, which was the stimulating effect of contact with other institutions and organizations for the development and registration of educational innovations. Motivation is an internal driving force that directs, maintains, and influences behavior. Teacher motivation specifically refers to the internal and external factors that encourage teachers to be committed, persistent, and effective in their teaching work. Intrinsic motivation can be derived from, for example, the need for self-actualization, the joy of teaching, or the desire to help students develop. Extrinsic factors include compensation, career opportunities, and social recognition. High levels of teacher motivation directly contribute to student achievement, improved school climate, and innovative teaching methods. Motivated teachers are more likely to use differentiated instruction, technology-based solutions, and respond more flexibly to students' individual needs. At the same time, burnout, job dissatisfaction and career abandonment are more common among teachers with low motivation levels, which have a significant negative impact on the education system as a whole in the long term.

Next, I investigated which lack of motivational factors hindered the development of educational innovations and their registration. The lack of stimulating factors revealed in the first stage of our research on motivation cannot be identified in all cases, we discovered the existence of new factors related to the lack of motivation Table 2.

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ISSN: 2576-8484
Vol. 9, No. 6: 1931-1941, 2025
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Table 2.
Lack of motivational factors for the development of educational innovations.

Superfactor	Factor	Subfactor	Informative quote
Internal (intrinsic) motivation	Lack of individual internal motivation	Lack of need for self-realization and variety	"I don't consider myself an overly creative, innovative teacher."(T5)
		Lack of self-confidence	"As a teacher, I don't feel confident enough to bring something untried into my lessons. I prefer to rely on the path well trodden by others." (T2)
		Burn-out	"The experimental spirit died out in me, a kind of disappointment, frustration, burnout or resignation developed. Over the past 20+ years, these experiments and ambitions have worn me out. I have become a worn-out, stale, disappointed teacher." (T1)
		Personal crisis	"It was mentioned several times, they put pressure on me about it, but that period was also very bad for me personally." (T4)
	Lack of external motivation related to work	Have not an impact on students' lives	"Children are exposed to so much stimulation today that we can't really compete with it."(T6)
		Differences between generations	"The shift between the current generation and my older colleagues is very strong. They don't really know what to do with them, I can see that. I also feel that this interoperability between me and the students is getting narrower and is starting to break down." (T9)
External (extrinsic) motivation	Lack of individual external motivation	Lack of opportunity for professional development	"When I went back to work after having my second child, the good practice I had been involved in had worn off. After that, it just fell away." (T3)
		Lack of material benefits	"After a while, you just do it, and the children's material is different, but the lack of financial respect is a big problem." (T10)
	Lack of external motivation related to work	Negative experiences related to previous learning and teaching	"Our big problem is that people work more than they present. (…) all that high-quality work hasn't received enough publicity." (T4)
		Exaggerated employer expectations	"After a while, you realize that these new methods and experiments are very time-consuming, so you don't progress with the requirements and expectations as much as they are required of you." (T2)
		Workplace conflicts	"We fought for recognition even within our own school." (T9)
		Lack of interest from colleagues	"I made several materials in English, for example, and then I made an environmental material, which I also presented to my colleagues, but there was no interest in it. They took note that I might have such whims, but there was no interest in it." (T7)
		Different direction of professional interest among colleagues	"I see the history teachers at my own school as not really moving towards the kind of interest that I like. I haven't really made an effort to share these thoughts in the field of history." (T8)

In addition to the lack of self-realization, lack of need for variety, and lack of self-confidence, which represent a lack of individual internal motivation, difficulties caused by burnout and personal life crisis were identified. As a lack of motivation linked to the individual workplace, we encountered a low degree of effectiveness on the students' lives, and also generational differences, methodological deficiencies, and a lack of subject-methodological challenges appeared among them. We also identified the lack of professional development and financial benefits as barriers to individual external motivation. As a lack

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of external motivation related to work, negative experiences related to previous learning and teaching, excessive employer expectations, a non-fertilizing, hostile workplace atmosphere appeared, and we identified other negatively influencing sub-factors such as overload, lack of interest from colleagues, different professional interests in the between colleagues and the lack of information. Lack of teacher motivation has serious negative consequences for the quality and sustainability of education. In the case of unmotivated teachers, teacher commitment decreases, learning and teaching effectiveness deteriorates, and the likelihood of burnout and dropout increases. As a result, not only educational outcomes deteriorate, but also the school climate becomes less favourable, which negatively affects students' motivation to learn and psychological well-being. In addition, a persistent lack of teacher motivation undermines the willingness to innovate, so that education systems cannot respond effectively to the challenges of the 21st century. The increasing shortage of teachers, especially in disadvantaged regions, further deepens educational inequalities. Loss of motivation is therefore not only an individual problem, but also a structural challenge that directly affects the strategic goals of education policy and social development.

5. Discussion

In the case of both groups of teachers, both internal and external motivational factors related to the individual and workplace were identified. This research (investigating the life path of teachers in the dimensions of the accumulation of human and social capital) showed that the extracurricular undertakings of higher education, and the open, diverse (inter-institutional and cross-border) network of professional relationships, the rich interpretation of roles enhanced by professional self-realization, activity predicts belonging to the type of teacher who registers innovation. By comparing the results obtained during our investigation into the motivational willingness of teachers, we came to the conclusion that our previous finding was confirmed, according to which the motivational lack of registration is based on the lack of work-related external motivational factors that were already identified in the earlier years of their lives in the narrow professional network, regarding the lack of professional self-fulfillment. The key to student success in disadvantaged areas is for teachers to be able to activate their decision-making capital, and thereby respond adequately to challenges and create renewable good practices. The basis of the motivational base related to the registration of innovations is based on individual factors, which includes both individual and workplace motivational factors. Comparing our results with previous life course studies, we found among the registered teachers that they are inspired by a strong internal motivational base, while they are able to make their professional decisions thanks to their external professional relationships, thus self-realization. This research also highlighted that parental involvement in pedagogical work encourages teachers to develop educational innovations.

A broad study of the collaboration skills of teacher education students seems to be justified in the future in terms of renewed teacher education. It also draws attention to the need to develop a training structure in which students' collaboration skills develop effectively. Trainings and the practice-oriented course called School Career Socialization Practice, introduced at the University of Nyíregyháza in cooperation with the university's partner institutions, can contribute to this.

Today's labor market expectations require employees to become effective members of a community in addition to their subject and professional knowledge and to be able to establish effective professional relationships. All this greatly increases the effectiveness of work, and for the teacher, a strong professional network provides retention power in the career.

6. Conclusion

International educational trends – such as the focus on PISA results, the rise of digital competences and the problem of teacher shortages – are putting the issue of teacher motivation in a new light. Teachers around the world are facing increasing workloads, administrative tasks and often inadequate social recognition, which undermines their commitment to the profession. In developed countries, there

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is also an increasing trend of turning away from teaching, especially among younger generations, which further exacerbates the teacher shortage. In order to prevent such trends, systemic interventions related to motivation are essential.

An important task of education policy is to create the right environment and conditions for maintaining and developing teacher motivation. Mapping motivation allows policymakers to design targeted interventions to make the teaching profession more attractive, such as developing competency-based pay systems that encourage professional development, supporting beginning teachers through mentoring programs that help strengthen their professional identity, reducing teachers' workloads, especially in administrative tasks, providing continuous professional development opportunities that enhance not only professional competencies but also a sense of self-efficacy, and strengthening teacher autonomy that increases professional control and the prestige of the profession.

The issue of teacher motivation therefore plays a key role in the sustainable development of international education systems. As teachers are the primary determinants of the quality of public education, their motivation influences learning outcomes, the functioning of schools, and the future of society as a whole. For education policy, empirical mapping of teacher motivation provides information that enables targeted, effective and sustainable interventions. Without this, education systems will not be able to meet global challenges and ensure continuous improvement of the quality of education in the long term.

Transparency:

The author confirms that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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