

HUMAN CAPITAL MANAGEMENT IN A SECONDARY SCHOOL IN VUCA TIMES

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Purpose: Human capital management in a volatile and unpredictable reality poses a challenge for all organisations. This is particularly important in the case of secondary schools, educational institutions preparing young people for final secondary education exam and entry to the job market. The article aims to present the opportunities and limitations related to managing human capital in a school in the context of VUCA, i.e. Volatility (V), Uncertainty (U), Complexity (C) and Ambiguity (A).

Design/methodology/approach: The present discussion is based on the literature of the subject, as well as the expertise and practical experience of the authors, who are academic and secondary school teachers. The article analyses studies on VUCA in Polish and foreign publications, employs quantitative analysis of existing statistical information and monitors trends present in secondary schools.

Findings: The VUCA reality demands a fresh outlook on human capital management in a school with a poor employee succession rate, staff shortages and, sometimes, reluctance to change. In a knowledge-based organisation, VUCA primarily means lifelong learning, investing in new competences, flexibility, openness and creating a well-defined growth vision. For head teachers/school managers, this entails developing a suitable management style, which will be beneficial both for different generations of teachers and a new generation of students, working and learning in a complex reality.

Practical implications: Each educational institution is committed to achieving and maintaining strong results, prestige, and a distinguished reputation in the educational market. Today, the volatile and unpredictable reality requires a novel approach to human capital management and the implementation of a growth strategy which will determine the school's path of development. This also necessitates the introduction of a specific management model.

Originality/value: The present article discusses the problem of human capital management in a complex reality. Headteachers are faced with the challenge of developing a defined vision and management style for their schools. For teachers, this means a new outlook on education, didactics and teaching methods.

Keywords: human capital, secondary school, VUCA.

Category of the paper: viewpoint, literature review.

1. Introduction

Running a school is one of the more important aspects pertaining to the functioning of an educational institution on the educational market. The headteacher's management style determines the future of the school's teaching staff and students, and is affected by such factors as first grade enrolment, educational innovations implemented by teachers or the quality of instruction. In addition, it also includes the method of managing human capital, i.e. school staff.

In Poland, headteachers' responsibilities are stipulated e.g. in the Education Law Act of 14 December 2016 (Journal of Laws 2017, item 59), the Teachers' Charter Act of 26 January 1982 (Journal of Laws 1982, no. 3, item 19), the System of Education Act of 7 September 1991 (Journal of Laws 1991, no. 95, item 425), the Regulation of the Minister of Education of 27 October 2009 on the criteria to be met by a person working as a headteacher or a different managerial position in various types of public schools and educational institutions (Journal of Laws 2009, no. 184, item 1436).

The role of a headteacher gains special importance in the context of human capital resource management in the VUCA reality, characterised by volatility, unpredictability and complexity.

Secondary schools were selected as the subject of this study for a number of reasons. First, it is students who decide if they wish to enrol in a particular secondary school, e.g. a general secondary school, a technical college or a vocational school. In Poland, secondary schools prepare students for the final secondary education examination (*matura*) or for work in an occupation. At this stage, young people become adults and are able to make their own decisions.

The article aims to present the opportunities and limitations related to managing human capital in a school in the context of VUCA, i.e. Volatility (V), Uncertainty (U), Complexity (C) and Ambiguity (A).

The authors formulated the following hypotheses:

1. Human capital management in a school is riddled with uncertainty, unpredictability and ambiguity.
2. As a learning organisation, school must face multiple contemporary challenges.
3. There is no single universal human capital management model for schools.

2. Methods

The article refers to publications on managing human capital in school, discussing problems such as school feminisation, staff shortages, generational diversity, knowledge management or teacher upskilling. The issues are global in scope and need to be handled by the authorities which run schools.

The VUCA reality in schools is far from a novel phenomenon. There are many studies on the aspects of the functioning of educational institutions. The publications attempt to provide solutions in crisis situations.

The present article discusses selected issues faced by secondary school headteachers in VUCA times. The authors highlight matters pertaining to the development of teachers' competences, investing in digital knowledge and skills essential for innovative teaching. Opportunities and limitations related to teaching staff knowledge management are also outlined.

The study also identifies human capital management areas both directly controlled by the headteacher (e.g. encouraging teachers to study further, implementation of educational innovations or experiments, teamwork, knowledge sharing) and those beyond the headteacher's control, such as the aging faculty or staff deficiency. It is also a reflection on constructing a human capital management model which would be compatible with the unique characteristics of secondary school.

The authors present VUCA-related problems from the perspective of practicing teachers. There is a scarcity of publications examining the volatile realities of secondary schools and the issues requiring attention from teachers and headteachers.

The following methods were applied in this article:

1. Analysis of texts and studies on VUCA published in Poland and abroad.
2. Quantitative analysis of existing statistical information.
3. Monitoring trends in secondary schools.

3. Human capital at school – characteristics and possibilities

“Human capital” eludes a single definition. As an interdisciplinary term, it is present in many sciences. Nevertheless, when analysing this concept, one may notice certain tendencies. Firstly, human capital is the most fundamental asset of every organisation regardless of its line of business. Secondly, human capital is an investment in employees, aimed at building a team of experts in a given discipline. This is of particular importance in the context of working in a secondary school. Thirdly, human capital is unique in each organization, since it is generated by persons characterised by individualism.

J. Fitz-Enz described human capital in the context of economic activity as a combination of the three following factors:

1. traits contributed by a human being: intelligence, energy, positive attitude, credibility, involvement,
2. the employee's learning capabilities: mental receptiveness, imagination and creative abilities, as well as common sense,
3. employee's motivation to share information and knowledge: team spirit and focus on the target (Fitz-Enz, 2001, p. 9).

A school is a learning rather than economic organisation (Fazlagić, 2005; Fura, 2007; Rabiej, 2013), which means that its employees should invest in their knowledge and skills. Article 12 of the Teacher's Charter stipulates that the teacher should broaden their general and vocational knowledge using the right to participate in all forms of professional training at the highest level (Teacher's Charter Act). Therefore, the headteacher should enable the teacher to develop and improve themselves, since it also affects the quality of instruction. Studies by Hyseni Duraku, Blakaj, Shllaku Likaj, Boci, Shtylla showed that early-education teachers' knowledge and skills had increased after the completion of training and that such projects support personal and professional development of the faculty (Hyseni Duraku, Blakaj, Shllaku Likaj, Boci, Shtylla, 2022). Graduating from a university is prerequisite for employment, although it is no longer sufficient. Today, it is a stepping stone to further skill improvement, updating knowledge on teaching methodology or a broadly-defined classroom work. However, the three factors referred to by Fitz-Enz strongly correspond to the human capital management process in a secondary school. Each employee carries a specific set of characteristics, competence and skills. In the case of vocational schools, this list should also include practical knowledge. Commitment and attitude to work in an organisation providing services to young people often determine the quality of a given educational institution. Employee's abilities translate into the effectiveness of teaching, adaptability, flexibility and openness to the need to enhance their competences. Working in a school entails participation in subject-based and interdisciplinary teams, which also means sharing knowledge and experience. Otherwise, it would be impossible to achieve the expected outcomes. Therefore, encouraging employees to work in teams should be one of the responsibilities of a headteacher (Polega, Neto, Brilowski, Baker, 2019).

As a learning organisation, a secondary school has specific features (Fig. 1).

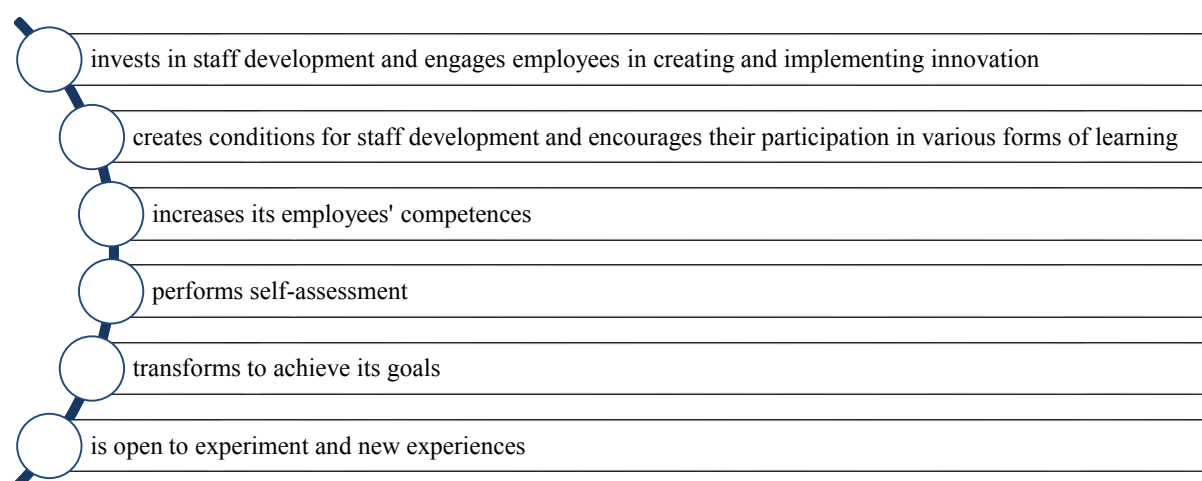


Figure 1. Selected features of a learning organization.

Source: Illustration by the authors, based on Pasieczny, Rosiak, 2021.

In a school, pedagogical innovations are innovative solutions implemented by teachers to improve work quality, support students in learning (Budirahayu, Saud, 2023) and facilitate their educational and job-related decisions. This also includes searching for new teaching methods (Çelik, Baturay, 2024). Introducing innovations entails effort and commitment on part of the teacher. Yet, every educational institution needs an innovative approach to teaching and working with students. This is particularly important in a secondary school, which is by definition intended to prepare a young person for tertiary education or entry on the job market.

Teacher's self-assessment is an intentional and systematic collection of information on the teacher's own work.

"Self-evaluation is intentional and systematic collection of information on one's own work. It is necessary to compare the results with the expectations of other participants in the education process, i.e. school as a workplace (management and other teachers), parents and, last but not least, students" (Kapuścińska-Kozakiewicz, 2021).

Self-evaluation is relevant for the teacher's further professional development (Ross, Bruce, 2007), constitutes a key component of managing a school, affects the efficiency and performance of teaching staff, as well as its professional development (Hašková, Lukáčová, Noga, 2019).

At school, openness to experiments and new experiences lies at the core of VUCA. This involves the introduction of new methods of working with teenagers, methodological experiments, teaching young people to think critically, openness to change, creativity. Another aspect of this openness is encouraging teachers to create interactive lessons to enhance their digital skills. Thus, secondary schools face a further challenge of learning to manage change (Gayef, 2014; Niculescu, Voicu, 2018).

Managing teachers and investing in their expertise contributes to an improvement in teaching quality, enables extensive support for students in their educational and job-related choices, grows their key competences and the ability to cope in a changeable and demanding environment.

4. Human capital at school – challenges

According to data from the Ministry of National Education, as of 10 October 2024, Polish schools employed 690,821 teachers – 580,387 women and 110,434 men – highlighting strong gender imbalance in the profession, with women making up 84% and men just 16% of the teaching workforce (Ministry of National Education..., 2024).

In Poland, and elsewhere, teaching as a job has the face, personality and individuality of a woman. In other countries, teaching is considered a female profession (Gromkowska-Melosik, 2013; Guy-Evans, 2024). The feminisation of the profession is global in scope (Piróg, Wiejaczka, 2020). Primary schools, in particular, face a shortage of male teachers.

Additionally, many schools are managed by women. Based on studies by Can Coco He, female leaders enhance team cohesion (He, 2025). Research by Al-Mughyirah, Abunaser, Al-Taher, Al-Otaibi, in Saudi Arabia demonstrates that every female leader has a unique method of working with people, which reflects her vision that she attempts to promote in school culture (Al-Mughyirah, Abunaser, Al-Taher, Al-Otaibi, 2023).

Teachers' age is one of the challenges for education in Poland. The mean age of a female teacher is 45; the corresponding figure for male teachers is 47 (according to data from the Ministry of National Education..., 2024). They are people several or over a dozen years before retirement, with experience and practical competences that could be transferred to younger generations of teachers, were it not for the issues with generational succession in Polish schools. The older generation has well-developed teaching methods, yet they may find challenging working with modern technologies such as artificial intelligence or the use of interactive platforms (Ratiu, 2023; Fahmiyah, Utami, Ningrum, Fakhruzzaman, Pratama, Triangga, 2023). Currently, Polish schools are witnessing a clash between multiple generations of teachers with a young generation of students raised as digital natives. On the one hand, the mature faculty have stable personal lives and good rapport with teenagers. However, it should be noted that new technologies used by young persons may present a difficulty for older staff. As a result, leading a multi-generational team means balancing the expectations of both faculty and students. Undoubtedly, it is a taxing situation for headteachers, who need to show understanding and adopt an appropriate management style. Nonetheless, generational diversity also creates enormous added value for every organisation (Bailey, Owens, 2020), fostering the capacity to recognize and utilize the varied capabilities across generations (Pitout, Hoque, 2022).

Staff shortages are another problem in Polish secondary schools. Figure 2 shows the number of teachers in secondary schools in the years 2021-2025.

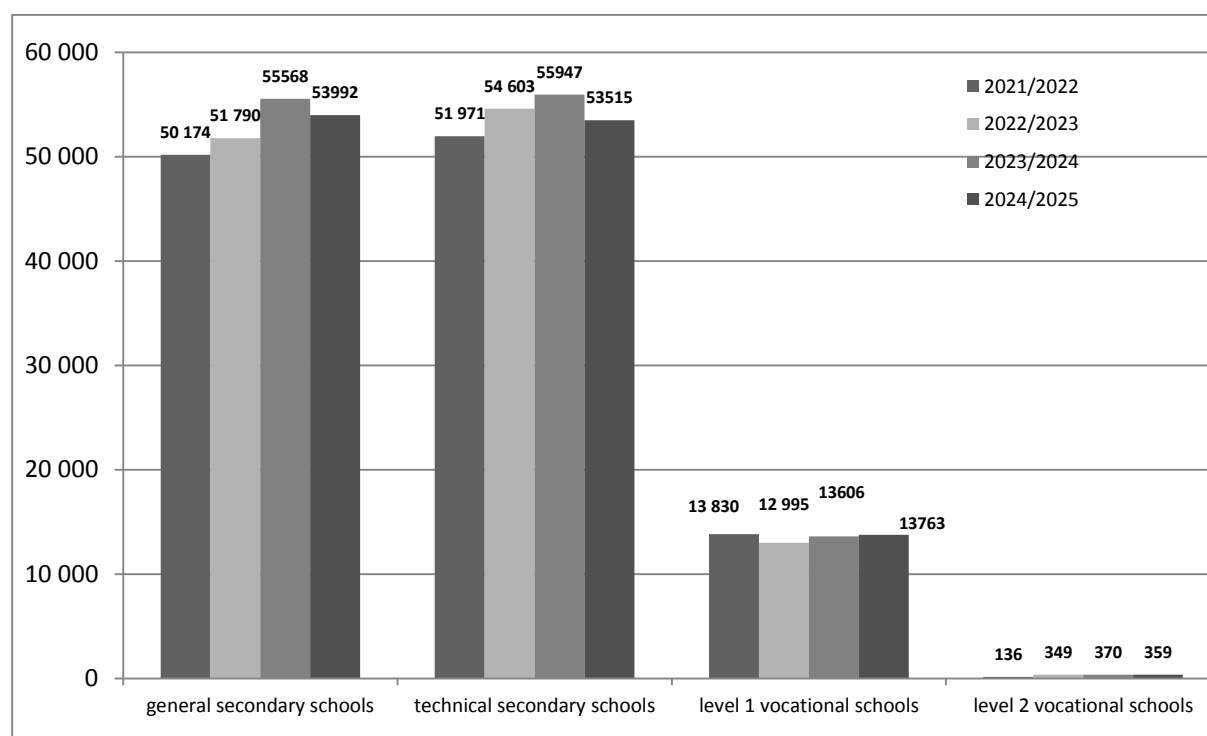


Figure 2. Number of teachers in secondary schools in 2021-2025 (school positions).

Source: Illustration by the authors, based on: *Edukacja w roku szkolnym 2022/2023 (wyniki wstępne)*, GUS, <https://stat.gov.pl/obszary-tematyczne/edukacja/edukacja/edukacja-w-roku-szkolnym-20222023-wyniki-wstepne,21,1.html>, 12.07.2025; *Edukacja w roku szkolnym 2024/2025 (wyniki wstępne)*, GUS, https://stat.gov.pl/files/gfx/portalinformacyjny/pl/defaultaktualnosci/5488/21/3/1/edukacja_w_roku_szkolnym_20242025_wyniki_wstepne.pdf, 12.07.2025.

The number of teachers in all types of schools is decreasing. Teacher scarcity most severely affects level 1 and 2 vocational schools. The situation is caused by several factors, e.g. low pay, very low prestige of the profession, burnout, stress, high accountability for student's results, and working conditions. The lack of well-educated and qualified teaching staff can be observed globally (Global report on teachers..., 2024; Symeonidis, Guberman, Cooper, 2025). This issue creates challenges for headteachers, particularly in secondary schools, forcing them to adopt an extremely flexible approach to managing human resources, which involves hiring retired teachers (especially teachers of vocational subjects), encouraging working teachers to commence post-graduate studies, hiring teachers working for other schools to work part-time, introduction of flexible timetables or hiring university students to teach classes.

5. VUCA and the reality of Polish schools

The acronym VUCA stands for volatility, uncertainty, complexity and ambiguity. In order to function on the educational market, perform well and be recognisable, every organisation, including school, must respond quickly to changes and implement them, deploy a specific human capital management style, allowing the organisation to work faster, more easily and more effectively. This also involves building a growth strategy for the school on the basis of several pillars, which include:

- competences,
- access to new technology,
- life-long learning.

Among key competences of the management staff and teachers in a secondary school are:

- the ability to make decision flexibly and adapt quickly to new conditions,
- communication skills,
- the ability to create teams,
- motivation to work (Tokarski, 2024).

In the VUCA world, it is imperative to manage competences in a way which will make the educational institution a recognisable brand to all stakeholders, both internal and external. This means selecting the right staff, managing through results, conducting appraisals, developing human resources and managing payroll (Kacała, Kacała, 2013).

VUCA also necessitates investing in new technologies and the students' and teachers' ability to apply them. In a secondary school, which prepares young people for the job market, access to the digital world and its responsible use is a basic core skill. However, if its mission is to succeed and yield benefits, teachers must be trained and classrooms properly equipped. Technology is a powerful tool which may support education, help teachers create didactic materials and offer a new way to learn and cooperate (How Has Technology..., 2024). Education must reflect and adapt to the new reality so as to successfully prepare students for life, and the teaching staff should be able to use modern technology effectively (Kiryakova, Kozhuharova, 2024).

Life-long learning is a competence which has gained significance in the VUCA reality, affecting all human activities. Even the best school will fail to meet students' and teachers' expectations if it does not respond to changes in the world, remain flexible in teaching methods or provide young people with suitable competences. VUCA is a concept describing a specific reality but for schools it primarily means a new outlook on managing the institution and human capital.

6. Knowledge management and its use in the context of Polish secondary schools

Knowledge management is another term which does not have a single definition. Assuming that a secondary school is an organisation wherein knowledge is a fundamental component, we may argue, in line with P. Murray and A. Myers, that knowledge management is a sum of processes enabling the creation, dissemination and use of knowledge to advance the organisation's goals (Jagielski, 2018, p. 101).

For a secondary school, the goals include: well-qualified teaching staff, final secondary education exam results and first-grade enrolment. As knowledge-based organisations, school make an effort to maximize intangible resources on their path to systematic growth. In this type of organisation, intellectual capital is a source of competitive advantage (Skrzypek, 2014).

On an employee level, benefits related to knowledge management mainly include:

- constant growth and increase of competences,
- forming a bond with the organisation to keep staff turnover to a minimum,
- easy access to sources of knowledge, translating into streamlined and more efficient work,
- saving time required to access the desired data,
- creativity, leading to generating new value for the organisation,
- boosting employees' self-esteem, fostering mutual trust,
- self-realisation,
- a sense of belonging to the organisation, forming, maintaining and reinforcing long-term bonds with staff,
- being satisfied with work,
- increasing employee competitiveness on the job market (Stachowska, 2020).

All of the above elements are reflected in practice at schools. Table 1 present possible benefits of knowledge management in reference to the faculty, together with its capabilities and limitations.

Table 1.

Capabilities and limitations related to knowledge management in reference to a school's teaching staff

S. Stachowska*	Capabilities	Limitations
Constant growth and increase of competences.	Participation in training and courses. Completing a post-graduate programme. Attaining a doctoral or higher degree.	Insufficient funds, raising competences sometimes unrelated to school requirements, increasing competences through a post-graduate programme, training, etc. does not translate into compensation.

Cont. table 1.

Forming a bond with the organisation keeps staff turnover to a minimum.	A healthy atmosphere in the school, incentive pay, cooperation with parents and the school's external environment.	Awarding an incentive pay is the exclusive right of the headteacher. The incentive pay is not an obligatory part of a teacher's compensation. This bonus is discretionary in nature.
Easy access to sources of knowledge, translating into streamline work and its higher efficiency,	Access to the Internet, educational and e-learning platforms, the use of school library resources.	No access to broadband Internet for teachers and students, lack of the ability to use applications designed for teachers.
Saving time required to access the desired data.	The ability to use artificial intelligence, access to information available on school platforms. The use of Teams.	Lack of the AI skills and knowledge, limited use of Teams.
Creativity, leading to generating new value for the organisation.	Implementation of new methods and forms of teaching, as well as experimenting on them. Collaboration with other teachers, flexible approach to change.	Change indicates hardship and reluctance; new solutions are time-consuming labour-intensive.
Boosting employees' self-esteem, fostering mutual trust.	Good communication between staff and headteacher, and among teachers, clear recruitment criteria, onboarding.	Barriers to communication, e.g. physical barriers (crowded classrooms), language barriers (working with teachers and students from other countries), absence of defined onboarding principles.
Self-realisation.	Personal and professional growth boosting motivation.	No training, webinars or other forms of teacher education matching the staff's needs, inability to cope with stress, lack of motivation, burnout.
A sense of belonging to the organisation, forming, maintaining and reinforcing long-term bonds with staff.	Maintaining good contacts with all staff, team-building events, fostering sense of security.	Potential problems include lack of acceptance and appreciation for teachers' work, no opportunity to speak one's mind openly, mobbing, discrimination, lack of appreciation for team-building initiatives.
Being satisfied with work.	Contentment with one's work, managing and coping with stress, maintaining a work-life balance, creating a positive atmosphere at work.	Unfavourable atmosphere at work, lack of transparency when making decisions, obstacles to growth and self-improvement, inability to keep work-life balance.
Increasing employee competitiveness on the job market	For a teacher, higher qualifications means better employability, e.g. in teacher-training organisations or other institutions, as well as greater opportunities to start one's own business.	Teachers leaving the school in favour of other schools, institutions or jobs, causing staff shortages.

Source: Stachowska, 2020, p. 41.

Given that the school needs to function in a volatile and unpredictable reality, we should pay close attention to all of the above elements. Still, the headteacher (who has a double role as a manager and faculty member) will be unable to cope with some of its aspects without proper support from both state and local government. School needs a broadly-defined change and the capability to adapt to a difficult reality. Otherwise, it will be unable to achieve its basic goal of preparing a young person for existence in the world of VUCA.

7. Results

Managing diverse human capital in a secondary school is a problematic task to be faced by the management of the educational institution. The VUCA reality, with its unpredictability and ambiguity, has exposed several inadequacies.

First of all, the aging faculty: teachers with long track record will retire in a matter of several or a dozen years. Generational succession is insufficient, with young people choosing different careers.

Secondly, school as a knowledge-based institution must make a commitment to staff development, which testifies to its brand reputation and quality. Coping in VUCA times primarily means investing in digital skills, working with artificial intelligence or educational platforms. This could prove a formidable task for the older generation of teachers.

A third finding is of special significance for primary schools. There are no incentives encouraging men to work at school. Staff diversity translates into its strength.

Fourthly, human capital at school includes every teacher's knowledge, skills, competences which had to be grown. The current generation of secondary school students are digital natives immersed in modern technologies. To be able to work with them is a key competence which should be given special attention when selecting the subject matter of courses for teachers.

Another important point is creating a healthy atmosphere at work, developing communication skills, introduction of onboarding and mentoring for the new intake, as well as implementing new methods and forms of teaching, which would be attractive for young people.

School development strategy is a certain model of school management in a temporal perspective. VUCA demonstrates that the model needs to be flexible and often adapted to crises. The better educated the teachers are, the greater the chances of navigating difficult realities.

8. Discussion

Managing the employees of an educational institution is one of the most important responsibilities of the headteacher, whose skill, experience and competences will determine the success of the school and its students. However, gaining a foothold in the educational market will prove impossible without support from teachers, parents, local and national government. On the one hand, VUCA has exposed the weaknesses of schools, uncovering specific threats, necessitating a critical look at human capital management; on the other hand, it ushered an opportunity to make changes in the methods of managing institutions of crucial importance to every person.

What can be inferred from this process is that we cannot create a single, universal school management model which could be effective in every possible situation (as proved by the closure of school during the Covid pandemic). Another pressing issue is the need for headteachers to update their knowledge of management. This is especially relevant in VUCA times.

Secondary schools are grappling with many problems of particular significance for their functioning, such as aging faculty or inadequate generational succession. There are not enough young teachers, vocational instructors, psychologists (counsellors). This shortage recurs every single school year, forcing headteachers to hire teachers who are retired or who already work for other institutions.

Being a learning institution, a school must develop and respond to the challenges of reality:

- targeted training for teachers, with particular emphasis on modern technologies,
- encouraging teachers to raise the competences in the school's deficient areas,
- introduction of mentoring for teachers new to the profession,
- introduction of onboarding programmes for newly employed staff,
- modernizing and upgrading the equipment used by schools.

All of the above activities intended to address VUCA require considerable financial outlays, making it necessary for headteachers to overcome administrative or bureaucratic obstacles. The projects involved cannot be implemented all at once; some of them may not receive the required funding, and headteachers will be put in an unenviable position to make difficult decisions concerning investments or education. Still, schools must meet their goals, so a school management model need to be adjusted to its unique characteristics, financial and organisational capacity.

9. Conclusion

Leading a secondary school in an unpredictable reality calls for a fresh perspective on staff motivation, commitment, and capacity to address challenges. A new philosophy is being put in place, based on the premise that all employees are treated as valuable capital which can grow; staff involvement in the work performed for the organisation also gains importance (Dziwulski, Harasim, 2018).

A school is managed by its headteacher in cooperation with teachers, parents and students. It is the headteacher who bears the greatest burden of responsibility related to the function of the educational institution, provides pedagogical supervision, manages the school's finances and performs tasks arising from applicable regulations. The manager of a school should be acquainted with modern methods of running an organisation, put them in practice, be flexible and open to change. Today's secondary school educates future employees, young adults who

will have to take important job- and education-related decisions. However, without proper support from teaching staff they will be unable to meet these challenges. In young people's view, Polish schools are old-fashioned, boring, discriminatory and unfriendly (Gagatek, Karaś, Kelsz, 2025). This opinion may be a derivative of several issues.

First, times change but school does not. It remains an institution incompatible with the needs of the next generation of students. This means that it is not open to change, has no strategy or a vision of growth. Second, schools do not have enough young staff willing to raise their competences and learn from older generations of teachers. Third, effective and efficient communication between all stakeholders is paramount. Fourth, modern schools must quickly respond to change, which necessitates developing a suitable management model with values such as human capital, quality-committed employees, school brand and, last but not least, the effectiveness of teaching and preparing a young person to live in unpredictable times. "Human capital is becoming a prism through which one should evaluate the achievements of an organisation" (Nowicka-Mieszala, 2012, p. 89).

The VUCA concept demonstrates that school must adapt to change, which means designing a specific style of management and preparation for new tasks and challenges. Sill, VUCA also opens a host of possibilities related to upgrading an institution's skillset, mastering a new approach to teaching and communicating with students. Being aware of changes and capable of implementing them allows headteachers and teachers to develop a new paradigm based on flexibility and openness.

The subject matter discussed here is of relevant problem which should be analysed for various school types, e.g. general secondary schools, technical colleges, vocational schools, with school management issues in the context of VUCA. Some of them will share certain characteristics but there will be some aspects different across schools. Importantly, this should lead to developing a human capital management model which will enable schools to thrive and succeed on the educational market.

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